School of Environment, Resources and Sustainability
Faculty of Environment
University of Waterloo

ERS 335: Ecological Restoration Fall 2020

Instructor:
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Office Hours: Due to COVID-19, office hours will be by appointment rather than scheduled. Please contact me or the TA by email with concerns. Drop-in hours will also be scheduled every two weeks for students with questions that do not require an office hour appointment or who wish to engage in student discussions.

Description

This is a transdisciplinary course that reflects the essence of ecological integrity and restoration ecology – but there still is a clear emphasis on natural/physical sciences, integration with social sciences & engineering, ecosystem function, and quantitative analysis.

Approach

This course will be a mix of synchronous (together at the same time) and asynchronous (on your own at your own pace) learning. **Synchronous class times are Mondays and Wednesday 1:00 pm – 2:30 pm. Synchronous classes will be recorded to provide asynchronous access.**

Students will be expected to keep up with the readings and lectures ahead of class time and be prepared to discuss the content during synchronous class times, which will consist of active learning (activities and discussions) pertaining to the readings. Readings and lectures will be available on LEARN at least 2 weeks before the topic will be covered in class.

Course Technologies

We will use LEARN and Perusall in this course. On LEARN, you will have access to course syllabus, content, assignment deadlines, and drop box for assignment submissions. You will also have access to Virtual Classroom (powered by Bongo) for the synchronous classes.

On Perusall, the readings for the class will be posted for group reading. Students will be assigned groups and be able to add notes to the posted readings, including asking questions, answering questions, requesting clarification, and participating in discussions.

Course Textbooks

Two required texts (available @UW Bookstore, Perusall, other sellers; used copies are OK).

- Newcomb L; Morrison. G. 1977. Newcomb's wildflower guide. Little Brown & Co.
- Allison SK and Murphy SD Routledge Handbook of Ecological and Environmental Restoration.https://www.routledge.com/Routledge-Handbook-of-Ecological-and-Environmental-Restoration-1stEdition/Allison-Murphy/p/book/9781138922129. (You can buy or rent an e-version – I recommend buying it through Perusall as we'll be using that technology extensively. We will use almost every chapters in the 600+ page book. All other readings will use sources available on-line via LEARN and Perusall; there is no extra cost.)

Learning Outcomes

By the end of this course, you will be able to:

1. **Demonstrate** field identification skills for the purposes of ecological monitoring (and assessment) in a restoration ecology context

2. **Explain** experimental design and **demonstrate** advanced data (quantitative/statistical) analysis skills related to measuring outcomes of ecological restoration

    - You will be at an intermediate level of skill and competence for experimental design and analysis using parametric and non-parametric statistics

3. **Implement** basics of ecological restoration in a long-term project

    - (i.e. an ongoing restoration project implemented and monitored by UW students every year)

4. **Apply** explanatory theories to case studies or examples at various spatial and temporal scales

5. **Critique & evaluate** use of explanatory theories in their application in case studies

6. **Synthesize** lessons from case studies in terms of general practice of restoration ecology and assessment of ecological integrity

7. **Apply** learning outcomes to your assignments, the final exam, and beyond, using the comparative method

8. **Exhibit** all above skills in a consultant style report (professional communication) and in creative design for ecological restoration

Course Schedule

The course was designed and previously implemented by Dr. Stephen Murphy. We will be using the same course schedule and sequence of topics that he has in the past.

Note: readings for each week may differ from this schedule depending on instructor discretion, students will be required to check Perusall for assigned/mandatory readings.

DATE/TOPIC/READING – MW 1300-1430 (Online or Outside)	CLASS OR FIELD ACTIVITIES & ASSIGNMENTS	LEARNING OUTCOMES
Sept 9: Foundations & Applications of Ecological Restoration Biodiversity as a goal, indicator and outcome of restoration ecology *Murphy and Allison 2017; Choi 2017; Higgs and Jackson 2017; Cabin 2017; Allison 2017 Booth et al. 2010*	We will discuss the changing nature of the broad conceptual, theoretical and methodological frameworks of restoration ecology Anticipating our field skills classes, discuss what we might find and how it relates to restoration ecology	Understand the scope & practicalities of restoration ecology and its frameworks (and what is a framework) Determine how well biodiversity serves the concept of restoration ecology
Sept 14: Research communication in restoration ecology Experimental design in restoration ecology *See links on LEARN for this class*	We'll discuss how to communicate ideas effectively We discuss controlled and mensurate experimental designs in restoration ecology	Learn to design experiments in restoration ecology *You have Term Assignment Part 1 due in 2 weeks*; this is meant to show you how to succeed for this class milestone and for employment generally
Sept 16: Principles of data analysis in restoration ecology *Murphy 2018 (primer on stats)*	We examine parametric, non-parametric, and multivariate analyses in restoration ecology	Learn the principles of analyses in restoration ecology
Sept 21: Practicum in data analysis in restoration ecology *See dataset provided in LEARN folder for this class* *Murphy & Brook (2019)*	We do a class exercise where we use the open source program r to analyze a real dataset from a restoration ecology project	Learn how to do analyses using software; *prepares you for Term Assignment Part 2* – due in about 6 weeks but it will sneak upon you
Sept 23: Synthesizing data and measuring outcomes of ecological restoration *Wortley et al 2013*	Provides theoretical foundations of how data supports decisions in restoration ecology	Learn the fundamental options of measuring outcomes in restoration ecology
Sept 25	**Term Assignment Part 1 due at 11:00 pm on LEARN**	**The goal: raise your game at scientific/professional writing**

Sept 28: Field skills in Applied Ecological Restoration I *Bring Newcomb's Guide & other field class materials**	We go outside and do Site Assessments of meadows using herbs and forbs as indicators; if the insects are active, we will add those to our indicator list	Learn to assess meadow sites and plan site-based ecological restoration
Sept 30: Field skills in Applied Ecological Restoration II *Bring Newcomb's Guide & other field class materials**	We go outside and do Site Assessments of riparian zones using herbs and forbs as indicators	Learn to assess riparian sites and plan site-based ecological restoration
Oct 5 Restoration ecology at population scales *Murphy et al 2017 McKay et al 2005*	Provides theory behind how population scale restoration works	Use population theories in problem solving for restoration ecology
Oct 7 Restoration ecology at community scales *Palmer et al 1997; Harris 2009 Kardol & Wardle 2010*	Provides theory behind how community scale restoration works	Community scales are perhaps the major focus in restoration ecology, so this shows how we use theory to problem solve
Oct 12 and Oct 14 – No Class	**READING WEEK**	
Oct 19 Restoration ecology at landscape scales *Bell et al 1997; Perring 2017*	Explores examples of spatial processes (landscape ecology) in restoration	Use landscape ecology theories & apply to restoration ecology
Oct 21 Governance, law, policy and restoration ecology *Cliquet 2017; Mansourian 2017*	Natural & physical sciences are important but social science issues may be even more critical to restoration ecology	Examine the legal, governance and government (policy) drivers for and against restoration ecology
Oct 26 Social capacity and ecological restoration I & II *Metcalf et al 2017; Packard 2017; Baker 2017; Heneghan & Heneghan; Edwards et al 2017*	Building social consensus and social capacity was once overlooked in restoration ecology; this addresses that form gap	Allows us to understand how social processes can help or hinder restoration ecology solutions as this is a big part of being a professional
Oct 28 Ecological restoration and economics I & II *Blignaut 2017; Williams 2017*	Delving deeply into the restoration economy's theory and practice	Be able to use case studies for comparative understanding and analysis of restoration economy projects
Oct 30	**Term Assignment Part 2 is due today at 11:00 pm on LEARN**	**The goal: present restoration results with statistical analyses**
Nov 2 Restoration Ecology in Tropical Ecosystems I & II *Byers 2017; Brown 2017; Segura 2017; Overbeck and Muller 2017; Lamb 2017*	Shows how people approach restoration ecology in different types of tropical ecosystems	We'll explore if there's anything unique about restoration in the tropics

Nov 4 Restoration Ecology in Temperate Ecosystems I & II *Kulluvainen 2017; Stanturf 2017 Prach et al 2017; Hanberry et al 2017*	The temperate zones include much of Canada, so we need to understand how restoration is done here – and in places like Canada	We'll still explore if there's anything unique about restoration in the temperate zones
Nov 9 Restoration Ecology in Desert/Dryland Ecosystems I & II *Abella 2017; Mucina 2017*	Deserts and drylands tend to get neglected in some cases and over-pampered in others; we will explore what happens	We will understand when we should or should not try and restore these ecosystems (and if so, how)
Nov 11 Restoration Ecology in Freshwater Ecosystems I & II *Smith and Chadwick 2017; Jeppesen et al. 2017; Keddy 2017*	Freshwater ecosystems are the 'canary in the coal mine'; we'll explore options for ecological restoration	We will understand how freshwater ecosystems are affected by disturbance and how we can restore them
Nov 16 Restoration Ecology in Marine Ecosystems *Burdick and Adamowicz 2017; Coen and Humphries 2017; Hancock et al 2017*	Marine ecosystems are perhaps a big mystery to most because they are hard to access; we'll mainly explore inshore and near shore types of ecosystems	Learn how we can restore such iconic ecosystems as coral reefs and estuaries
Nov 18 Urban Restoration Ecology *Norris et al. 2017*	As more people live in urban areas, the need to restore is urgent; we'll explore how	We will have a good grounding of how ecological restoration is done in a seemingly impossible set of circumstances
Nov 23 Restoration Ecology and Invasive Species *Dudney et al 2017*	Invasive species can be a problem for restoration; we'll explore how we should research and act	We will understand how to define thresholds for action on invasive species in restoration ecology
Nov 25 **Nov 27**	Term Assignment Part 3 Q&A **Term Assignment Part 3 Due at 11:00pm on LEARN**	**The goal: synthesizing results with current academic literature on restoration**
Nov 30 The Big Picture of Restoration Ecology I *Trevenen et al 2017; Chazdon and Rey Benayas 2017; Murphy 2018*	The regime changes caused by anthropogenic climate change and the tools needed to address these Earth scale issues will be explored; we will have some focus on strategic issues today	We will learn the scope of the problem in detail and how we can cope with such widespread and rapid degradation – how do we effect restoration in a hostile social/environment?
Dec 2 The Future of Restoration Ecology I & II *McDonald et al 2016; Higgs et al 2018a,b; Gann et al 2018; Hobbs et al 2009; 2014a; 2014b;*	We'll discuss how controversies erupt, especially when long held ideas are challenged	Novel ecosystems are ones not likely to be restored to a 'historical' condition; we seek to answer if this is defeatist or simply practical

Murcia et al 2014; Murphy 2013b; 2013c		
Dec 7 Course Evaluation & Exam Review	Evaluate the course and discuss the exam (kind of self-explanatory)	You will have a chance to improve the course and will get a lot of exam hints and help here

Course Assessments

Assessment	**Due Date**	**Weight**
Term Assignment		
Term Assignment Part 1	September 25, 2020 at 11:00pm on LEARN	10%
Term Assignment Part 2	October 30, 2020 at 11:00pm on LEARN	10%
Term Assignment Part 3	November 27, 2020 at 11:00pm on LEARN	30%
Field and Writing Prompts		
Writing Prompt 1	September 11, 2020 at 11:00pm on LEARN	2%
Field Prompt	October 2, 2020 at 11:00pm on LEARN	4%
Writing Prompt 2	October 16, 2020 at 11:00pm on LEARN	2%
Writing Prompt 3	November 13, 2020 at 11:00pm on LEARN	2%
Summative Assessments		
Reflection on Restoration	December 4, 2020 at 11:00pm	10%
Final Exam	TBD	30%

1. Term Assignment

Divided into 3 Parts (3 Submission Dates): Each student will write a formal technical report in the format used by consultants. This ensures you have yet another skill set for your life experience and that looks good on a CV/resume. Start plotting out this assignment early and start each section as early as possible. Do not cause yourself grief because of poor time management and a failure to heed this advice. All submissions will be on LEARN drop box.

1. a. Term Assignment Part 1

Submit a draft introduction contextualizing an ecological restoration study. Weight: 10% of final grade; Word limit: 1000 words. **Due Date is September 25 at 11:00pm on LEARN.**

1. b. Term Assignment Part 2

Data Analysis. Analyze data on an ecological restoration study using open source software and submit the Results in a coherent format. Weight 10% of final grade. **Due Date is October 30 at 11:00 pm on LEARN.**

1. c. Term Assignment Part 3

Writing a Complete Research/Consultant Style Technical Report on An Ecological Restoration Study. Word Limit: 7500 words (not including tables or literature cited). Weight: 30% of Final Grade. **Due Date is November 27 at 11:00 pm on LEARN.**

You also get a 48-hour grace period (penalty free) if you really need it – a free extension in other words.

2. Field and Writing Prompts

You will receive field and writing prompts for overarching content topics. Each prompt will require a response of 250 words maximum; additional criteria will be presented with the prompt on LEARN. Weight 10% of final grade. **Varying due dates through the term.**

3. Individual Reflection on Restoration

You will be assessed on your general experience in our learning community. For this assignment, you will submit (max 2 pages single spaced) a reflection on your learning outcomes. Learning outcomes can be varied, from the methods and techniques you have learned, experiences in the field, working on the term assignment, coming to appreciate nature, learning to observe. Students will be provided prompts to guide their reflection. The assignment description will be available from term start. Weight: 10% of final grade; Word limit: 1000 words. **Due Date is December 4 at 11:00 pm on LEARN.**

4. Final Exam

The final exam is based on our discussions (including all lecture and field days). The exam will focus on point form explanatory style answers to questions largely posed as synthesis or problem-solving exercises. Typically, there will be 6-8 questions but there will be some choice in selecting options within the questions given. If you like to skip the last classes on principle - that approach would be a very bad idea. Despite the scary looking weighting given to the final exam, this is the type of weight and format that professionals must master when becoming professionally certified. Your grade on the final exam is maximized if you go to class diligently, synthesize your own class notes + the slides each week + keep up with the course, discuss any gaps in your understanding with me + TA + friends, review practice questions that I send out

during term, and step back and give the whole course some deep thought. Basically, if you perform as scholars, you will do well. Weight: 30% of final grade.

The exam will be scheduled by the registrar's office. Due to the online nature of the course, students will have a 24-hour period to complete the exam.

Readability and Clarity:

Students are expected to present well organized, and properly written work. Penalties of up to **25%** may be applied in cases where readability and/or clarity are inadequate.

Late Penalties

All assignments are to be submitted online on LEARN. Students are responsible for handing their work in on time. Students have 7 days past the assignment regular due date to submit assignments with a 10% late penalty total. Only in unavoidable circumstances will extensions be granted and must be given by the course instructor prior to the due date of the assignment.

Use of Turnitin

Plagiarism detection software (Turnitin) will be used to screen assignments in this course. Turnitin is primarily a plagiarism detection tool but can also be used to help students understand academic integrity in written assignments. Turnitin generates 'originality reports' on student submissions, which can provide instructors with information about plagiarized sources, but **the reports can also be used to help students understand the proper use of quotation marks, how to cite sources properly, and how to paraphrase**.

Students will be given an option if they do not want to have their assignment screened by Turnitin. In the first week of the term, details will be provided about arrangements and alternatives for the use of Turnitin in this course. **NOTE: any student not wishing to submit materials for Turnitin detection must contact the instructor within the first week of the term, to arrange for an alternate format for the review questions and assignment – including an annotated bibliography for each assignment.**

Citation Format for Assignments

The citation format adopted for this course is the APA (American Psychological Association) style. The complete style outline can be found in the Publication Manual of the American Psychological Association, located in the reference section in Dana Porter Library, call number BF76.7.P83 1994.

Online you can find some quick references at the following URLs:

APA essentials - http://www.vanguard.edu/faculty/ddegelman/index.aspx?doc_id=796 and http://www.apastyle.org/

APA Crib Sheet - http://www.wooster.edu/psychology/apa-crib.html
Citing Electronic References - http://www.apa.org/journals/webref.html#Email
Frequently asked Questions - http://www.apa.org/journals/faq.html

Course Processes & Other Key Information

Experiential Learning: We Have 3 Classes Devoted to Field Skills Practicum: This year, due to COVID, the online experience will make the experiential aspect of the course a little bit different. The Ecology Lab will be supporting us through virtual classes and instructional videos. Students will be provided with potential locations to do the field practicum. Expectations for field safety and field note-taking will be covered before your field practicum. You may do some seeding for ecological restoration, depending on how the field aspect pans out. This ensures you get some experiential learning during the late summer/early fall.

You are expected to review assigned readings before and after each class. I selected peer-reviewed readings (see LEARN Lessons Folder & Class Schedule) for your use as background on the topics we will discuss in class and as sources for your assignments. You can also use these to help you find other relevant references. I follow the readings in class and base my lessons on them; whatever we emphasize in class will be emphasized on the final exam. I do not play Trivial Pursuit on exams.

Your assignments will be submitted online via LEARN to reduce use of paper. They are due @ 11:00 pm on the date indicated in this syllabus. They will be graded and commented on using the track changes feature of MS Word. 10 MB limit on file size. Call them surname_firstname_335AX where X = assignment 1,2, or 3. Don't take this too literally; swap in your own name please.

Read, explore databases, & start work on assignments during the first week of classes – _you can do a lot of the work on reports early; if you don't, you will be cursed (and will curse). Late assignment penalties apply as follows and to all cases except for those few extensions granted for medical reasons or for professional counseling for serious personal problems – _extensions can be granted with proper documentation or discussion well in advance. For those who are in their 2A term, take note: This can be a very challenging term. Often, you go through personal changes. I am sympathetic but we need to communicate; if you identify a problem of any type, come and see me ASAP. All discussions confidential, we can usually work out a better path.

There are normally penalties for submitting the any of the parts of the Term Assignment after the due date. My approach is that for the first 2 days, I only apply a relatively small penalty; it means that if you are 6 hours late you might as well take another day or two anyway to make it really good to compensate. Specifically, for each assignment, if the assignment is up to 48 hours late, a flat 10% is deducted. Exceptions are considered for medical/related reasons AND there is

a nice little grace period (penalty free) for 48 hours for Assignment 3 ONLY (you're welcome) - after that, then the penalties begin as described here. If the assignment is >48 and < 144 hours late, a flat 25% is deducted. Assignments later than 144 hours (7 days) past deadline receive a grade of 0.

Resources for You – University Policies, Your Rights, Mental Health Help, AccessAbility
Each course must refer you to this webpage with many resources (policies, mental health help and so forth): https://uwaterloo.ca/environment/undergraduate-teaching-resources. Beyond that, make all efforts to communicate with me if there are acute or chronic struggles that affect your class attendance or course performance – I know it is tough to admit you need help or to trust anyone. The earlier we address issues and find a success path, the better; I am willing to assist and alter the standard path.

University Policies and Procedures:

♦ Students with disabilities: AccessAbility Services, located in Needles Hall, Room 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 AccessAbility Services at the beginning of each academic term.

♦ Mental Health**:** The University of Waterloo, the Faculty of Environment and our Departments/Schools consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges - physical and / or emotional. Please note that help is available. Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services https://uwaterloo.ca/counselling-services/ is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more.

♦ Provincial Tests: Students will be expected to follow the rules of the provincial tests. Rules for testing at the University of Waterloo will not apply, nor will accommodations be made during these tests that fall outside the provincial rules.

♦ Religious Observances: Students need to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

♦ Unclaimed assignments**:** Unclaimed assignments will be retained for one month after term grades become official in quest. After that time, they will be destroyed in compliance with UW's confidential shredding procedures.

♦ Communications with Instructor and Teaching Assistants**:** All communication with students must be through either the student's University of Waterloo email account or via Learn. If a student emails the instructor or TA from a personal account, they will be requested to resend the email using their personal University of Waterloo email account.

♦ Intellectual Property: Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides); Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.
Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).

♦ Academic Integrity: Each student will be asked to read and sign the Academic Integrity form below. **We will go over on the first day of the course: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.**

The University's guiding principles on academic integrity can be found here: **http://uwaterloo.ca/academicintegrity**. ENV students are strongly encouraged to review the material provided by the university's Academic Integrity office specifically for students: **http://uwaterloo.ca/academicintegrity/Students/index.html**

Students are also expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions.

Students who are unsure whether an action constitutes an offense, or who need help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. Students may also complete the following tutorial: https://uwaterloo.ca/library/get-assignment-and-research-help/academic-integrity/academic-integrity-tutorial

When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline: https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71. Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance: https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70 Plagiarism: In particular, you should not plagiarize the work of others. Policy 71 defines plagiarism as: "The act of presenting ideas, words or other intellectual property of another as one's own. The use of other people's work must be properly acknowledged in all written material such as…essays, laboratory reports, design projects, statistical data, computer programs and research results. The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without complete and unambiguous acknowledgement, however, is an offence under this policy." Students are expected to keep a copy of all materials used to prepare assignments in case of disputed work and should be able to provide working notes and original data for any assignment within 4 hours of this being requested.

In the context of this course, plagiarism includes (among other activities) submitting without appropriate acknowledgement any report (or part thereof, including software, designs, photos, computer images, models, drawings, maps, statistics, samples, results of lab or field work etc.) which has been submitted previously to any course anywhere by any person, submitting a report in which the production has been shared by more than one student and each has submitted it as their own without acknowledgement of the other's contributions, submitting any work created in whole or in part by another without the usual acknowledgement. Policy 71 states that one should not submit "an essay, report or assignment when a major portion has been previously submitted or is being submitted for another course with the express permission of all the instructors involved".

If in doubt, ask the course instructors or the teaching assistant if your intended assignment submission is acceptable.

All suspected academic misconducts are investigated and formally reported to the Associate Dean, Undergraduate of Faculty of Environment.

♦ Appeals**:** A decision made, or penalty imposed, under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72

♦ Grievance**:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70 - Student Petitions and Grievances, Section 4, https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70. When in doubt please contact your Undergraduate Advisor for details. *This form may be used by course instructors as an educational tool to help their students maintain high standards of academic integrity (AI) in their work. Additional copies (as well as a version specifically for programming assignments) are available online at: https://uwaterloo.ca/academic-integrity/sites/ca.academic-integrity/files/uploads/files/AIAcknowledgementForm.pdf.*

Students are expected to know what constitutes AI, to avoid committing AI offences, and to take responsibility for their actions. Students who are unsure whether an action constitutes an offence, or who need 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, TA, academic advisor, or the Undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to **Policy 71, *Student Discipline***, http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm

A student who believes that they have a ground to appeal a discipline decision should refer to **Policy 72, *Student Appeals*,** http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm
A student who believes that a decision or action of a faculty member has been unfair or unreasonable should refer to **Policy 70, *Student Petitions and Grievances***, http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm