

Climate Change: A Geological Perspective ERTH 2402 (Winter Term 2021)

Lectures: Friday: 8:35AM - 11:25 AM

Although this is the formally scheduled lecture time for the course all lectures will be pre-recorded and posted to CULearn. The formal lecture time will be used to host tutorials, lecture debriefings and Q&A sessions.

Course Material: Distributed through CULearn

Instructor: Dr. Tim Patterson, Professor of Geology
tim.patterson@carleton.ca

Office Hours: No specific time. Meetings to take place at a mutually convenient time either by telephone or video conference

Teaching Assistants:

Carling Walsh? - CarlingWalsh@cmail.carleton.ca

Naomi Weinberg? - naomiweinberg@cmail.carleton.ca

Introduction

Welcome to Climate Change: A Geological Perspective. I am delighted that you have chosen to take this course and hope that you will enjoy learning about the variety of climates that have characterized the earth over time and what clues they provide for our future. Climate change research is a fascinating and rapidly changing discipline and one that I am excited to be involved in as a climate change researcher here at Carleton.

This general interest course is designed for the non-major and requires no prerequisites in Earth Sciences. That said there is a lot of material that will be covered and for students with little science background understanding some of the concepts will require additional reading. In short do not consider that this is a **“BIRD COURSE”** or **“GRADE RAISER COURSE”**.

This course explores climate change from the geological perspective, emphasizing the history of earth climates, geological causes of climate change, and impact that rapid climate change has had on the biosphere. At present concerns about these issues are commonly expressed by questions such as:

- How does carbon dioxide influence global temperatures?
- What determines changes in sea level and how do such changes affect the coastal environment?
- How has the atmospheric composition changed with time?
- What are the controls of the oceans, the atmosphere, and the physical geography of the land in setting the regional and temporal patterns of climate?
- How are nature and humans affecting the land?

- What is the role of natural global catastrophes on life in general, and humans in particular?

This course aims to address the issues of both long- and short-term natural and human induced environmental change on a global scale. An understanding of the geologic history of climate change is essential if researchers are to answer the above questions and accurately predict the impact that possible present-day rapid climate change may have on the biosphere. During its history our world has been subject to often dramatic, climatic shifts ranging from near global glaciations, to planetary greenhouse conditions. These dramatic shifts can be linked to varying factors including development of the planetary biota, plate tectonics and changes in paleoceanographic circulation.

During the past years in particular scarcely a day goes by without some discussion of a climate change related issue on television or in the newspapers. As a secondary goal I have developed the course to help the general public appreciate and better understand the science as well as the social issues associated climate change.

Course Learning Outcomes

In this course you will:

- Learn about human awareness and the impact of rapid and slow climate change on human civilization (Remembering and Understanding).
- Learn about the wide variety of climates that have developed on other planets and moons in the solar system, and new results that arising from the study of exoplanets in other solar systems (Remembering and Understanding).
- Learn about and understand the utility of climate proxies as a way to assess and reconstruct previous climate systems that have existed in the past (Remembering and Understanding).
- Learn about the links between atmosphere and oceanic circulation and how they are critical parts of the Earth climate system (Remembering, Understanding and Analyzing).
- Learn about the causes and impact that El Niño and other cyclic climate phenomena have on climate (Remembering, Understanding and Analyzing).
- Learn about what the historical record indicates about the probability of future extreme weather events (Remembering and Understanding).
- Learn about the impact of glaciation on climate through an overview of the unusually cold conditions that have prevailed on Earth through the Quaternary and previous “Ice House World” climatic intervals (Remembering and Understanding).
- Learn about climate cycles and trends that are recognizable in the Holocene

climate record (Remembering and Understanding).

- Learn about the advantages and disadvantage of the mathematical models that are used to make estimates of previous and future climates using climate models (Remembering and Understanding).
- Learn about the link between climate change and extremely rapid (often catastrophic) events (e.g. meteors, volcanoes, and nuclear weapons exchange; (Remembering and Understanding).

Course Evaluation

Grade Breakdown

Term paper – Due Tuesday March 16 th (electronically)	40%
Final Exam – Date, Time, TBD	60%
Total	<hr/> 100%

Textbooks

There are two textbooks that we will be drawing on for the class.

Van Andel, Tjeerd H. 2002. New Views on an Old Planet. Cambridge University Press, 2nd Edition. 458 pages.

“Earth Science is history, and because the earth is changing every day, earth history is being added every moment. Professor van Andel's now famous book on earth history interweaves three main themes: the evolution of the solid earth; the history of oceans and atmospheres; and the evolution of life. In the decade since this award-winning book was first published, much new information has been learned and confirmed, and Dr. van Andel draws on this wealth of knowledge to thoroughly revise and update the text. There is a new chapter on how we can improve our grasp on geological time and, mindful of the current interest in global change, new sections describe the greenhouse effect and address its possible future ramifications. In prose that is both concise and compelling and with a glossary and suggestions for further reading New Views on an Old Planet: A History of Global Change, makes earth history appealing to the general reader .”

This book is available as a free chapter by chapter ebook pdf download in the Carleton Library at:

<http://ebooks.cambridge.org.proxy.library.carleton.ca/ebook.jsf?bid=CBO9781139174114>

You can either print the pdf out or load it on a reader such as and iPad. For those of you who prefer a paper copy of the text it is available for purchase at many online vendors for as little as a dollar including:

www.amazon.ca

<http://www.chapters.indigo.ca>

www.abebooks.com

Be sure and order the 2nd edition though!

Peters, E. Kirsten, 2012. The whole story of climate: What science reveals about the nature of endless change. Prometheus Books. 290 p. ISBN-10 185383582X.

“In the publicity surrounding global warming, climate scientists are usually the experts consulted by the media. We rarely hear from geologists, who for almost two hundred years have been studying the history of Earth's dramatic and repeated climate revolutions, as revealed in the evidence of rocks and landscapes. This book, written by a geologist, describes the important contributions that geology has made to our understanding of climate change. What emerges is a much more complex and nuanced picture than is usually presented.

While the average person often gets the impression that the Earth's climate would be essentially stable if it weren't for the deleterious effects of greenhouse gases, in fact the history of the earth over many millennia reveals a constantly changing climate. As the author explains, several long cold eras have been punctuated by shorter warm periods. The most recent of these warm spells, the one in which we are now living, started ten thousand years ago; based on previous patterns, we should be about due for the return of another frigid epoch. Some scientists even think that the warming of the planet caused by man-made greenhouse gasses tied to agriculture in the past few thousand years may have held off the next ice age. Though this may be possible, much remains uncertain.

But what is clearly known is that major climate shifts can be appallingly rapid--occurring over as little as twenty or thirty years. One danger of dumping greenhouse gases into the atmosphere is that they may increase the chance that this "climate switch" will be thrown, with catastrophic effects on worldwide agriculture.

Besides her discussion of climate, the author includes chapters on how early naturalists pieced together the complicated geological history of Earth, and she teaches the reader how to interpret the evidence of rock formations and landscape patterns all around us.

Accessible and engagingly written, this book is essential reading for anyone looking to understand one of our most important contemporary debates.”

New and used copies of this text can also be obtained from suppliers like Amazon.ca at very reasonable prices. For those of you who prefer a paper copy of the text it is available for purchase at many online vendors for as little as a dollar including:

www.amazon.ca

<http://www.chapters.indigo.ca>

www.abebooks.com

Term Paper Guidelines and Grading Scheme

This document supplements the information provided above in the grade breakdown.

Term paper itself: (15%)

Term paper body is to be single spaced, with 2.5 cm margins all around and paginated. Additional pages may be included for abstract, references, figures and tables as required. Font is to be 12-point Times or Times-Roman.

Electronic version of term paper is to be provided so that submissions can be analyzed for originality. Term paper is due on or before March 16th, 2020 through the CU Learn submission portal. There will be 20% deduction in value for each day that the term paper is late.

The layout of the term paper is to follow the outline below:

Title and Abstract: (10%)

Clear and concise. Clearly outlines the contents of the paper in 200-400 words. The Abstract should be on a page by itself.

Paper Body: (65%)

The term paper body is to be 5 pages long. While a complete, in-depth analysis of the topic is not expected (that would be a dissertation or book), a superficial discussion is not sufficient. The term paper should be a thoughtful discussion of your topic. I want to know by reading the paper that you learned some things and thought seriously about the topic. Organize your paper in an organized way. In a survey paper such as you are writing begin with a clear introduction, followed by background and then a discussion of the main points that you wish to cover. It may be useful to subdivide the various parts of the paper with subheadings. Be concise. Wordiness distracts from the points that are being made and wearies the reader. Rephrase or use parenthesis to indicate the work of others. Do not copy text into your document. It is an indication of plagiarism, easily detectable and is a serious academic offence (see section in course outline on plagiarism). Fully cite your sources as you develop your ideas. Class notes do not qualify as citations. Do not use “grandfathered” citations. Go to the original source! Spelling errors are also distracting. Be sure and spell check the document prior to submission.

Conclusions: (10%)

Clearly and briefly summarizes the main points made in the paper.

References (5 %)

Are all references listed in bibliography cited in text? And are all references cited in text

listed in the bibliography? The Internet is a wonderful source of information. However, many non-academic sites are commonly not screened and refereed as are academic journals and publications. If you do cite web pages, give the exact URL address. In the case of online journal articles such as those found in the online peer-reviewed journal *Palaeontologia Electronica*, cite them as though they were in printed form.

Figures and Tables (10%):

Earth Science papers are often replete with many figures and data tables. If you include figures from elsewhere clearing reference the source. Figures should be clear with the main points that you wish to make based on them easily distinguishable. It might be useful in some cases to draft your own figure. Figures and Tables require captions that are to be printed on the same page. Figures and Tables are to be placed in order at the end of the paper with one figure and table per page, not interspersed through your manuscript. When you cite figures in the text they should be in order. The progression should be Fig 1, 2, 3, 4, 5 etc. Do not cite Figure 3, then 5, then 1 etc.

Final Exam

The final examination will consist of multiple-choice questions.

Plagiarism

The University's Senate defines plagiarism in the regulations on instructional offences as: "to use and pass off as one's own idea or product work of another without expressly giving credit to another". Borrowing someone else's answers, unauthorized possession of tests or answers to tests, or possession of material designed in answering exam questions, are all subject to university policy regarding instructional offences.

Requests for Academic Accommodations

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

For Students with Disabilities:

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

For Religious Obligations:

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student. Students who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holy days and Carleton's Academic Accommodation policies, or may contact an Equity Services Advisor in the Equity Services Department for assistance. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Please note: students who choose to wear head coverings that obscure their facial features will be required to produce a student identity card showing their true likeness, which must be shown to a proctor of the same sex. They will be asked to temporarily remove themselves from the examination room to a private area prior to the beginning of the examination where they will be required to reveal their faces to a proctor of the same sex. The instructor needs to be advised of this requirement at least one week ahead of the examination to ensure that an appropriate proctor can be obtained.

Pregnancy obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Medical Certificates:

Please note that in this course on all occasions that call for a medical certificate you must use (or furnish the information demanded in):

www1.carleton.ca/registrar/ccms/wp-content/ccms-files/med_cert.pdf

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline

Requests for Academic Accommodations

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

For Students with Disabilities:

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

For Religious Obligations:

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event. Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student. Students who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holy days and Carleton's Academic Accommodation policies, or may contact an Equity Services Advisor in the Equity Services Department for assistance. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Please note: students who choose to wear head coverings that obscure their facial features will be required to produce a student identity card showing their true likeness, which must be shown to a proctor of the same sex. They will be asked to temporarily remove themselves from the examination room to a private area prior to the beginning of the examination where they will be required to reveal their faces to a proctor of the same sex. The instructor needs to be advised of this requirement at least one week ahead of the examination to ensure that an appropriate proctor can be obtained.

Pregnancy obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Medical Certificates:

Please note that in this course on all occasions that call for a medical certificate you must use (or furnish the information demanded in):

www1.carleton.ca/registrar/ccms/wp-content/ccms-files/med_cert.pdf

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or

perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline

Carleton University Academic Integrity Policy

I INTRODUCTION

Carleton University is a community of scholars dedicated to teaching, learning and research. Sound scholarship rests on a shared commitment to academic integrity based on principles of honesty, trust, respect, fairness and responsibility. Academic misconduct, in any form, is ultimately destructive to the values of the University. Conduct by any person that adversely affects academic integrity at Carleton University is a serious matter. The University demands, unequivocally, academic integrity from all of its members, including students. Misconduct in scholarly activity will not be tolerated.

The Academic Integrity Policy is concerned with student academic integrity. The integrity of a student's academic work is critical to enabling student success. Students who violate the principles of academic integrity undermine the quality of their education and the value of a Carleton University degree.

II SCOPE

The Academic Integrity Policy:

- describes those actions and behaviours which violate Carleton University's standards of academic integrity;
- defines the responsibilities of various offices and individuals in upholding the policy;
- specifies the procedures and processes to be followed when an allegation of violating these standards has been made against a student;
- specifies the sanctions that may be applied to a student who has been found to have violated these standards; and,
- describes the appeal and petition processes open to students who feel they have not been treated fairly under this policy.

It is our goal to ensure that all involved in student academic integrity at Carleton University are treated in a fair, transparent and consistent manner.

This policy applies to all students as defined by this Policy. Any student who violates the standards of academic integrity set out in this policy will be subject to appropriate sanctions.

The Carleton University Student Rights and Responsibilities Policy governs the non-

academic behaviour of students, whereas this policy governs academic misconduct. In some cases, a student's actions may involve both academic and non-academic issues. In such cases, the student may be subject to the procedures of either or both policies.

Students are reminded that sanctions imposed by the University for breach of this Policy do not prevent the imposition of civil or criminal law sanctions by the relevant authorities in appropriate circumstances.

III PRINCIPLES

Carleton University seeks to ensure that allegations of violations of this Policy are managed appropriately. The following principles serve as the foundation for this policy:

- allegations shall be handled in a fair and equitable manner adhering to principles of procedural fairness and natural justice;
- Carleton University's expectations for students regarding academic integrity will be clearly communicated;
- where possible, sanctions are to be educational and rehabilitative rather than punitive;
- students will be advised and guided through the process to ensure that they are properly informed and aware of their options.
- investigative procedures shall recognize importance of timeliness, clarity and consistency.

IV DEFINITIONS

Appeal refers to the process by which students may appeal a decision pursuant to this Policy.

Allegation refers to information sent to the Dean by an instructor or staff member relating to his/her concern that a student may have committed a violation of this Policy. For example, an instructor may send a student's assignment and pages taken from an article to the Dean's office for investigation because he/she thinks the student's paper has been plagiarised from that article.

Committee refers to the Senate Student Academic Integrity Appeals Committee.

Dean means the chief academic and administrative officer of a Faculty or an Associate Dean of the Faculty who has been designated by the Dean to manage the academic misconduct process.

Disciplinary Record means the record retained by the Undergraduate Registrar's Office in respect of a student who has committed a violation of this Policy. A disciplinary record is kept confidential. It is different from the academic transcript and includes only that information specific to the allegation and decision made pursuant to this Policy.

Evidentiary Records are those records that are created as a result of an allegation that a student has violated the Policy and includes records created for that purpose by instructors, Chairs, Directors and Deans.

Examination includes tests, quizzes, mid-term, final and deferred examinations.

Expulsion from the University means the termination of all of a student's rights and privileges as a student at the University. Return to studies at the University is possible only through a petition to Senate. If expelled, the student shall be withdrawn from courses in which a violation has not been committed without academic penalty.

Faculty may mean:

- A major teaching division of the University divided into departments, schools or other units and headed by a Dean. (e.g. Faculty of Arts and Social Sciences).
- The academic teaching staff of the University.

Instructor means any individual employed by the University to teach.

Misconduct refers to actions by a student that constitute a violation of the academic integrity standards defined in this policy.

Undergraduate Registrar's Office refers to the Office that provides procedural advice to instructors, students, Faculties and University administrators with respect to case investigation and documentation in the administration of the appeals process in this Policy and maintains the disciplinary records on students who have violated academic integrity. In addition, it is the office responsible for maintaining the academic records of all Carleton University students, past and present, undergraduate, graduate and special.

Ombudsperson provides advice and guidance to students with respect to this Policy.

Policy means the Academic Integrity Policy.

Provost refers to the Provost and Vice-President (Academic) who is the chief academic officer of the University.

Senate Student Academic Integrity Appeals Committee is a Standing Committee of Senate appointed by Senate. Student appeal requests are submitted to the Senate Academic Appeals Committee through the Undergraduate Registrar's Office.

Student, for the purposes of this Policy, means any person who at the time of the alleged violation of this policy satisfied at least one of the following criteria:

- was admitted to a program, including an undergraduate or graduate degree, diploma or certificate program;
- was registered in a course;
- was registered in a non-credit course offered by the University;
- was applying to obtain admission, readmission or registration in a program or a course if it is alleged the person breached this Policy in order to obtain admission, readmission or

registration.

Suspension is a sanction under this Policy that removes a student's right to register in any courses, or to be awarded a degree, diploma or certificate for a specified period of time. The suspension referred to in this policy is a sanction and should not be confused with suspension, as defined in the calendar, that is the result, in certain circumstances, of an Academic Performance Evaluation (APE).

V RIGHTS AND RESPONSIBILITIES

The University upholds and will take reasonable steps to ensure that students are aware of their rights and responsibilities as members of the University community. The importance of confidentiality of each student's academic and disciplinary University record is recognized and will be protected in accordance with legislative and policy obligations.

Students can expect other members of the Carleton University community to demonstrate honesty and integrity in their teaching, research and administrative practices. Instructors, staff, and administrators hold a responsibility to support an environment that discourages violation of the standards of academic integrity and to assist students in completing their university degree successfully.

The Ombudsperson is available to advise students of their rights and responsibilities under this Policy, to advise them on the procedures to be followed, and to accompany them at meetings with the Dean and hearings with the Senate Student Academic Integrity Appeals Committee pursuant to this Policy.

Students can expect fairness and equity in the assessment of their work.

Students are responsible for being aware of and demonstrating behaviour that is honest and ethical in their academic work. Such behaviour includes:

- Following the expectations articulated by instructors for referencing sources of information and for group work.
 - Submitting original work, citing sources fully, and respecting the authorship of others.
- Asking for clarification of expectations as necessary. Students who are in any doubt as to whether an action on their part may be viewed as a violation of the standards of academic integrity should ask for clarification.
 - Identifying situations that may reasonably lead to a violation of this policy.
- Preventing their work from being used by others, e.g. protecting access to computer files, etc.
 - Adhering to the principles of academic integrity when conducting and reporting research.

Instructors at both the graduate and undergraduate level have the responsibility to provide clear guidelines concerning their expectations of academic integrity (e.g. rules of collaboration or citation) on all course outlines, assignment and examination material. In particular, graduate supervisors hold the responsibility to provide trustworthy mentoring.

VI ACADEMIC INTEGRITY STANDARDS

Effective adherence to academic integrity requires that students understand the meaning of academic misconduct. The following list describes conduct that violates standards of academic integrity, which may lead to the imposition of sanctions pursuant to this Policy. It is important to note that this is neither a comprehensive nor a mutually exclusive list and should not be viewed as exhaustive.

1. Plagiarism

Plagiarism is presenting, whether intentionally or not, the ideas, expression of ideas, or work of others as one's own.

Plagiarism includes reproducing or paraphrasing portions of someone else's published or unpublished material, regardless of the source, and presenting these as one's own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, art works, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, and material on the internet.

Examples of plagiarism include, but are not limited to:

- submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another's data or research findings;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one's own
- failing to acknowledge sources through the use of proper citations when using another's work and/or failing to use quotations marks.

2. Unauthorized Resubmission of Work

A student shall not submit substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the second submission occurs. Minor modifications and amendments to an essay or paper, such as changes in phraseology, do not constitute a significant and acceptable reworking of an assignment.

3. Unauthorized Co-operation or Collaboration

An important and valuable component of the learning process is the progress a student can make as a result of interacting with other students. In struggling together to master similar concepts and problems and in being exposed to each other's views and approaches, a group of students can enhance and speed up the learning process. Carleton University encourages students to benefit from these activities which will not generally be viewed as

a violation of this policy. With the exception of tests and examinations, instructors will not normally limit these interactions.

Students shall not co-operate or collaborate on academic work when the instructor has indicated that the work is to be completed on an individual basis. Failure to follow the instructor's directions in this regard is a violation of the standards of academic integrity. Unless otherwise indicated, students shall not co-operate or collaborate in the completion of a test or examination.

Group Work: There are many cases where students are expected or required to work in groups to complete a course requirement. Normally, students are not responsible for violations of this policy committed by other members of a group in which they participate. In order to make a determination that part of the work submitted by a group of students violates this policy it is necessary that that part of the work that is alleged to have violated the policy can be directly attributed to a particular student.

4. Misrepresentation

Students shall not submit or present false assignments, research, credentials, or other documents or misrepresent material facts for any academic purpose.

Examples of misrepresentation include but are not limited to:

- falsified research or lab results and data;
- falsified facts or references;
- falsified medical or compassionate certificates;
- falsified admission documents;
- falsified letters of support or other letters of reference;
- falsified academic records, transcripts, diplomas or other registrarial records;
- falsified dates or times of submission;
- falsified scores or records of an examination result; and/or
- resubmitted graded work.

5. Impersonation

It is a violation of the standards of academic integrity to impersonate another person or enter into an arrangement with another to be impersonated by any means for the purposes of gaining academic advantage including in the taking of examinations, tests, or the carrying out of laboratory or other assignments.

6. Withholding

It is a violation of the standards of academic integrity to withhold records, transcripts or other academic documents to mislead or gain unfair academic advantage.

7. Obstruction and Interference

It is a violation of the standards of academic integrity to obstruct or otherwise interfere with the scholarly activities of another in order to gain unfair academic advantage. This includes but is not limited to interfering or tampering with data or files, with human or animal research subjects, with a written or other creation (e.g. a painting, sculpture, file), with a chemical used for research, with any other object or study or research device or with library, electronic or other materials intended for academic use.

8. Disruption of Classroom Activities, Periods of Instruction, or Examinations
Carleton University has a commitment to provide an appropriate environment for learning. It is

a violation of the standards of academic integrity for a student registered in a class to disrupt the class or other period of instruction, or an examination with any action or behaviour reasonably judged by the instructor, lab assistant or tutorial assistant to be detrimental to the activity.

Normally disruption of activities outside of the classroom or outside of periods of instruction or by a student not registered in the class is dealt with under the Student Rights and Responsibilities Policy but in particular cases may be subject also to this Policy.

9. Improper Access

It is a violation of the standards of academic integrity to improperly obtain access to confidential information such as examinations or test questions or to gain undue academic advantage as a result of such behaviour.

10. Improper Dissemination

It is a violation of the standards of academic integrity to publish, disseminate, or otherwise make available to a third party confidential information without prior consent.

Confidential information includes but is not limited to academic information, data or documents (including draft documents) which are not otherwise publicly available and which have been gathered or held with reasonable expectation of confidentiality. This includes, for example, unpublished data or drafts of articles for publication. In particular, students are expected to follow the Carleton University Policies and Procedures for the Ethical Conduct of Research.

11. Knowingly Assisting in the Violation of the Standards of Academic Integrity

To assist anyone in violating the standards of academic integrity is itself a violation of academic integrity standards and subject to this Policy. Claiming ignorance of or confusion about the academic integrity standards as described in this Policy does not excuse a student from being responsible for violations of those standards.

12. Tests and Examinations

The University is committed to ensuring fairness and consistency in the completion of examinations. As part of this commitment, students are required to follow proper examinations procedures. A student who commits a violation of this Policy on an examination, test, or takehome examination, or obtains or produces an answer or unfair advantage are subject to sanction under this Policy.

This includes but is not limited to:

- bringing to the examination/test room any unauthorized material;
- writing an examination or part of it, by consulting any person or materials outside the confines of the examination room without permission to do so;
- intentionally leaving answer papers exposed to view;
- attempting to read other students' examination papers;

- speaking to another student (even if the subject matter is irrelevant to the test);
- disrupting or delaying a test or examination;
- failing to comply with the instruction of a University official administering an examination.

A violation of this Policy may also occur by breaching one of the Rules and Procedures of Examinations.

VII PROCEDURES

1. Alleged Violation

Instructors, advisors and/or supervisors must report all suspected cases of violation of this Policy to the Faculty Dean.

All evidence relevant to the alleged violation should be sent to the relevant Faculty Dean's office responsible for administering the course in which the alleged violation took place within five (5) working days after the discovery of the evidence. In academic units where consultation with the Chair (or delegate) is required, instructors will forward all appropriate documentation to the Chair who will, upon his/her judgment, forward it to the relevant Dean's office within five (5) working days after receiving it from the instructor.

The Dean may advise the instructor to record a grade of GNA (grade not available) on the Final Grade Report. The grade of GNA will be replaced by an appropriate grade once the allegation has been resolved.

2. Review of Allegation by Faculty Dean

Upon review of the documentation, the responsible Dean may determine that:

- there is insufficient evidence to proceed and return the documentation to the instructor. If the assignment was not graded at the time it was sent to the Dean, the instructor will grade the assignment without penalty or prejudice.
- there is sufficient evidence to proceed and arrange a meeting with the student to discuss the matter. A meeting will be scheduled to occur within fifteen (15) working days or as soon thereafter as practicable following the receipt of the allegation by the Dean's office.

If the student is enrolled in a program in another Faculty, the Dean will notify the other Faculty Dean(s) of the allegation and the Deans will decide whether both Faculties will be involved in the meeting. The Dean responsible for the course is the Dean who will make the determination in the case.

If the student is a graduate student, the Dean of the Faculty of Graduate Studies and Postdoctoral Affairs will notify the Faculty Dean(s) responsible for the administration of the course or program and the Deans will decide whether all relevant Faculties will be involved in the meeting.

3. Contacting the Student

The Faculty Dean will inform the student, with a copy to the Ombudsperson, of the nature of the allegation in the breach of this Policy, the details of the evidence against him or her (including copies where appropriate), the procedures to be followed as well as the time and place of the meeting. The student will be encouraged to seek the advice of the University Ombudsperson. The University Ombudsperson, or delegate of the University Ombudsperson, may be invited by the student or the Dean to attend the meeting.

If the student does not respond to the request for a meeting, or if the student does not attend the meeting, the Dean may make a decision on the available evidence. In cases where the student is unable to attend a meeting in person, he or she may request a meeting using a suitable alternate mode of communication and it will be arranged if possible or provide a written statement.

4. Checking for Previous Violations

The Faculty Dean shall inquire with the Undergraduate Registrar's Office to determine if there are any previous violations of the Policy by the student.

5. Determining Whether a Violation Has Occurred

The purpose of the Dean's meeting is investigative, rehabilitative and educational in nature. It is also meant to:

- provide students with an opportunity to respond to the allegation made against them;
- seek clarification of the evidence;
- help students understand academic integrity standards and responsibilities, and
- enable the Dean to decide whether or not this Policy has been violated.

The Faculty Dean shall determine, based on his or her discussion with the student and a review of all relevant evidence, whether a breach of this Policy has been committed, and if so, an appropriate sanction.

6. Notification of Decision

Student The Dean will inform the student of the decision, normally within five (5) working days of the Dean's meeting. If the Dean concludes that it is necessary to conduct further investigation, the student will be informed of any new information and be given the opportunity to respond either in writing or in person before a final decision is made as to whether this Policy has been violated.

If the Dean determines a violation of this policy has been committed, then the written decision to the student will include a description of the conduct, the sanction imposed and the relevant details on which the finding and the sanction were based.

In cases where the student has admitted to a violation of this Policy, reference to this fact will be made in the letter. The student will also be informed of the appeal process and his or her right to take such action.

In cases where the Dean determines there has been no violation of this Policy, the record of the decision will be kept in the Dean's office.

Other Offices The instructor and where appropriate, the Department/Unit Chair, other Faculty Deans, and the Ombudsperson will be informed of the Dean's decision. In cases which require action by the University or where penalties affect a student's academic record, the Dean will notify the University Registrar within ten (10) working days of the penalty decision.

Undergraduate Registrar's Office Where the Dean determines that there has been a violation of the Policy and imposes a penalty, a copy of the decision letter will be sent to the Undergraduate Registrar's Office and shall be maintained centrally by that Office. These records are Disciplinary Records and are maintained and destroyed in accordance with Part XI of the Policy. In addition, The University Registrar's Office will record these changes within five (5) working days of receiving notification of the penalty decision.

7. Procedures for Recommending a Sanction to the Provost or Senate Executive

Provost In a case where the Dean recommends an additional sanction to be imposed by the Provost, the Dean will advise the Provost (see Section VIII) of his or her recommendation and forward all evidence involved in the case.

The Provost will arrange a meeting with the student and the Dean. Notification to the student will occur within ten (10) working days after the Provost has received the Dean's recommendation. The student will be encouraged to seek the advice of the University Ombudsperson, who may be invited to attend the meeting with the student. The Provost shall determine, based on the discussion at the meeting and a review of all relevant evidence, whether or not to apply the recommended additional sanction pursuant to Part IX.

If the additional sanction recommended by the Dean is applied, the student will be informed in writing of the sanction. The student will also be informed of the appeal process and his or her right to take such action.

If the additional sanction recommended by the Dean is not applied by the Provost, all other sanctions applied by the Dean will remain in effect.

If, in reviewing a recommendation, the Provost identifies a concern regarding an error in fact or procedure, the Provost may recommend that the student appeal the Dean's decision.

Senate Executive In a case where the Provost recommends rescission or suspension of one or more degrees, diplomas or certificates, the Provost will advise Senate Executive of this recommendation and forward all evidence involved in the case to Senate Executive.

Senate Executive will, upon review of the case, determine whether or not to accept the recommendation of rescission or suspension of the degree. If the sanction is upheld, the student will be informed of this decision in writing. The student will also be informed of the appeal process and his or her right to take such action.

If the rescission or suspension of one or more degrees, diplomas or certificates recommended by the Provost is not supported by Senate Executive, all other sanctions applied by the Provost will remain in effect.

VIII SANCTIONS

The Faculty Dean may apply any one or any combination of the following sanctions if, after hearing the student's response to the alleged violation, the Faculty Dean is satisfied that a violation of this Policy has occurred.

Factors that may impact the sanction include:

- any record of previous violations,
- the seriousness of the violation
- the relative weight of the work,
- the student's year standing,
- the rehabilitative benefit of the sanction
- any mitigating circumstances

In the case of graduate students, consideration of the student's year standing in the graduate program and the work in which the violation occurred (e.g. an M.A. course paper versus a comprehensive examination) may affect the sanction assigned. Recommendations by supervisory committee members may also be considered.

Sanctions may be used independently or in combination for any single violation.

Sanctions that may be imposed by the Faculty Dean

1. A written reprimand.
2. Requirement to remain registered in the course in which the violation occurred.
3. Completion of a remediation process. Completion of a remediation process may be either a sanction of its own accord or may be used to reduce a more severe sanction. Examples of remediation are attendance at a Writing Tutorial or study skills workshop, completion of an academic integrity computer tutorial or the submission of a new assignment for grading.
4. Resubmission of the piece of academic work in which the violation was committed, for evaluation with or without a grade penalty.
5. Assignment of a reduced grade (including a grade of zero or a failing grade) for the

- piece of academic work in respect of which the violation was committed.
6. Assignment of a reduction of the final grade in the course in respect of which the violation was committed.
 7. Assignment of a grade of unsatisfactory or failure for the course in respect of which the violation was committed.
 8. Restitution of costs incurred by the University as a result of the violation of this policy.
 9. Withdrawal from the course in respect of which the violation was committed. In certain cases, the Dean may decide that the student will not be allowed to enroll in the course again for up to three (3) terms.
 10. An additional requirement of a maximum of 1.0 credit added to the student's program of studies.
 11. Registration limited to a specified number of credits per term for up to three (3) terms.
 12. Suspension for up to three (3) terms, normally beginning with the next academic term after the final decision has been made. Students are allowed to complete courses that are ongoing at the time of the decision but will be withdrawn from any courses in which they have registered and which would begin during the suspension.

Additional Sanctions that may be Recommended to the Provost by the Faculty Dean

1. Recommendation to the Provost that a student be suspended for more than three terms normally beginning with the next academic term after the penalty is assigned. As part of a suspension imposed by the Provost, the student may be required to withdraw, without academic penalty, from courses unrelated to the violation, that were ongoing at the time of the imposition of the suspension. Students will be withdrawn from any courses in which they have registered and which would begin during the suspension. The Dean should clearly indicate if the recommendation includes a transcript notation.
2. Recommendation to the Provost that the student be expelled from the University with a corresponding transcript notation.
3. Recommendation to the Provost for rescission or suspension of one or more degrees, diplomas or certificates obtained by any student with a corresponding transcript notation.
4. Recommendation that a notation be added to the student's transcript.

Additional Sanctions that may be imposed by the Provost on Recommendation of the Faculty Dean.

1. Suspension for more than three (3) terms, normally beginning with the next academic term after the final decision has been made. Student may be required to withdraw, without academic penalty, from courses unrelated to the violation, that were ongoing at the time of the imposition of the suspension. Students will be withdrawn from any courses in which they have registered and which would begin during the suspension.
2. In the case of suspension for more than three (3) terms, the Provost may determine that a notation be placed on the student's transcript in the form as set out in this policy. The notation may be permanent or for a limited period. In the case of a limited period, the notation shall be removed at the expiry of the set time limit.
3. Expulsion from the University with a notation on the transcript.
4. A notation may be added to the student's transcript.

Sanctions that may be Recommended to Senate Executive by the Provost

The rescission or suspension of one or more degrees, diplomas or certificates obtained by any graduate who, while enrolled at the University, committed any violation of this Policy.

Sanctions that may be imposed by Senate Executive on Recommendation of the Provost

On recommendation of the Provost, rescission or suspension of one or more degrees, diplomas or certificates. In this event, a notation will be made on the student's transcript pursuant to Part IX.

IX TRANSCRIPT NOTATIONS

All transcript notations shall include:

- the reason for the notation (for example, "Suspended for academic misconduct")
- the date the notation was applied (for example, "beginning Sept. 1, 2015")
- the date the notation is to be removed (for example, "until Aug 31, 2018")

Unless otherwise specified, the notation regarding a suspension shall be removed at the end of the period of suspension. Other notations (for example, for expulsion or for the rescission of a degree) are normally permanent. If Senate at some later date reinstates this student, this will be followed by the notation: Reinstated from Term 20xx

Petition to Remove Notation

A petition may be made to have a notation removed. Such a petition shall not be considered before five years from the date the notation was added to the transcript. A petitioner has no right to have a notation removed. The decision to remove a notation is at the discretion of Senate, acting through Senate Executive.

1. A student initiates such a petition by a written request to the Clerk of Senate.
2. The Clerk of Senate shall refer the petition to the Senate Student Academic Integrity Appeals Committee for consideration.
3. The Senate Academic Integrity Appeals Committee will follow procedures analogous to those it uses for appeals.
4. The Senate Student Academic Integrity Appeals Committee will make, in timely fashion, a written recommendation to Senate Executive. The recommendation may include any conditions that the Committee feels that Senate Executive should impose.
5. Acting on behalf of Senate, upon receipt of the recommendation from the Senate Student Academic Integrity Appeals Committee, Senate Executive will make the decision whether or not to grant the petition.
6. In making a decision to remove a notation, Senate Executive may impose such conditions as it considers reasonable.

7. The Clerk of Senate, on behalf of Senate Executive, will inform the student in writing of the decision of Senate Executive.
8. Senate Executive will inform Senate, in a closed session, of the petition and its decision.
9. The decision of Senate Executive is final and not subject to appeal.

X APPEAL OF SANCTION

All students have the right to appeal a sanction imposed pursuant to this Policy to the Senate Student Academic Integrity Appeals Committee.

An appeal shall be based on:

- new information and facts not considered by the original decision maker
- a claim that this policy and related procedures were not properly followed
- a claim that the impact of the sanction was not consistent with the offence

The Committee may

- Determine that there is no basis for the appeal
- Deny the appeal
- Allow the appeal and refer the case back to the Dean
- Allow the appeal and find no violation of the Policy

In a case where the Committee finds that the student has presented evidence that they were not treated equitably under this Policy, the case may be referred to an alternate Dean for reconsideration. In this case, this Dean is expected to consult with the original decision maker regarding matters of fact and the level of sanctions typical in the student's faculty for similar violations of this policy.

In the case where a student is appealing a decision made by the Provost on a recommendation made by a Dean, the Senate Student Academic Integrity Appeal Committee is empowered to make a new decision, where it feels grounds exist, regarding the recommendation.

Carleton University recognizes that there are circumstances that make following the time constraints imposed in this policy difficult or impossible. In cases where the time constraints specified in this policy are not followed by either the student or the university, an appeal based on delay shall only be granted in cases where the delay is unreasonable, unjustified or places an undue burden on the student.

The Appeal Process

An appeal should be started by a student at the Undergraduate Registrar's Office within ten (10) working days from the time that the student receives the letter notifying her or him of the sanction imposed under the Policy.

The original sanction will remain in effect until the appeal process is completed. In cases of extreme hardship, and following a request from the student, the Committee may grant a student a stay of sanction pending appeal. In this case, a grade of GNA may be given to the student until the appeal is decided.

Appeals are submitted on-line using the Undergraduate Registrar's Office On-line Appeal Application form made available on the Undergraduate Registrar's Office website. The appeal must contain a concise statement that identifies precisely the grounds for the appeal. Students are advised to consult with the Ombudsperson or the Assistant Registrar, Central Academic Records for assistance in completing their appeal documentation.

Within five (5) working days of the submission of the on-line appeal application form the Assistant Registrar, Central Academic Records (or designate) shall:

- provide the student with a written acknowledgement of receipt of his or her appeal, and notify the student of information missing from the on-line appeal application form and;
- inform the original decision-maker of the appeal.

Within seven (7) working days of the Assistant Registrar, Central Academic Records sending acknowledgement of the notice of appeal, the student may make an appointment with the Assistant Registrar, Central Academic Records and review his or her file. In this case, the student will normally have an additional five (5) working days to provide additional evidence responding to material in the file, or further documenting the case made in the notice of appeal. When the student's documentation is complete, he or she will be notified, within five (5) working days, of the date when the Committee will first consider his or her appeal. The student will also be informed of any further meetings where his or her appeal is considered.

Decision Making Process:

The Committee shall decide upon appeals after considering documentation provided by the student, the file provided by the Dean's office, and other relevant information. The procedural rules for the hearing of an appeal are attached to this Policy as an Appendix.

The Committee shall communicate its appeal decision to the student, the original decisionmaker(s), the Ombudsperson, and individuals who received a copy of the Dean's decision letter in writing within ten (10) working days from the time that the Committee's decision is made.

Decisions of the Committee shall be final subject only to a Procedural Review by the Clerk of Senate. A Procedural Review is restricted to determination of whether procedures have been followed as set out in this Policy, whether issues of bias have been properly addressed, and whether the Committee has made a decision in accordance with its authority. Information on Procedural Review is available at the Carleton University website.

Membership of the Committee:

The Committee is a Standing Committee of Senate appointed by Senate consisting of:

- four faculty members;
- two undergraduate students; and
- two graduate students.

Members will be asked to commit to membership of the Committee for a minimum of twelve (12) months. Student members of the Student Academic Integrity Appeals Committee must be in good academic standing. The non-voting secretary of the Committee will be the Assistant Registrar, Central Academic Records or delegate. The Committee shall select its own Chair from members of the Committee. The Committee shall meet as needed in response to appeals made by students. The quorum for the Committee shall consist of two faculty members and one student. A Committee panel that considers a case must have more faculty members than student members.

Where a member of the Committee has a conflict of interest, that member will remove himself or herself from the case. In the case of an appeal by a graduate student, all reasonable efforts will be made by the Committee to ensure the attendance by a graduate student representative on the Committee at all meetings concerning the appeal.

XI RECORDS

The Undergraduate Registrar's Office shall maintain the disciplinary record under this Policy.

The purpose of this record, which shall be kept separate from any other of the student's records, is to determine whether there has been a previous violation, before a sanction is imposed. Such a record of violations shall not be used for any other purpose without the student's consent.

The Dean's Office shall maintain the evidentiary record under this policy. The purpose of this record is to preserve the evidence used by the Faculty Dean in making a determination so that it can be used in the event the student makes a petition or appeal regarding the case. This record is considered confidential and shall be kept separate from all other records.

Destruction of Records related to Violations of this Policy

The Undergraduate Registrar's Office and each Faculty will annually undertake a process to destroy all disciplinary records and evidentiary records of academic integrity decisions relating to students who have graduated in the past year and, where appropriate, for students who have ceased studying for at least five (5) years. Individual student records must be maintained for at least 30 days after the student graduates in order to allow all students proper access to the appeals process. Students who wish to have returned to them work that was kept as evidence

and would normally have been returned must make their wishes known in a written request to the appropriate Dean's office within 30 days of their graduation.

Records, both disciplinary and evidentiary, for students who have transcript notations will be held indefinitely in the Undergraduate Registrar's Office and are to be used only in the event of a subsequent appeal by the student for which the violation of the policy is relevant or for a petition regarding the transcript notation.

When the penalty includes a transcript notation as described in Part IX, and the student's petition to delete the transcript notation has been granted by the Senate, Senate may direct the Undergraduate Registrar's Office to destroy the disciplinary and evidentiary record when the transcript notation is deleted.

In exceptional circumstances, where the violation of this policy is found to be particularly serious, the Dean may recommend to the Provost, in association with the recommendation for additional sanction, that the records associated with the offence be kept indefinitely in the Undergraduate Registrar's Office.

The Undergraduate Registrar's Office will report annually to the Provost on compliance with this section.

Destruction of Records in cases where there is no Violation of this Policy

In the event that a student has been found not to have violated this policy (by a Faculty Dean, the Provost, Senate Executive or on appeal) then all disciplinary records of the relevant allegation of a violation of this Policy held in the Undergraduate Registrar's Office shall be destroyed.

XII REPORT TO SENATE

The Undergraduate Registrar's Office will keep the statistics on academic misconduct cases. These statistics shall be presented to Senate in an annual report by the Senate Student Academic Integrity Appeal Committee, together with any other comments on the characteristics of violations or relevant information. This report will be made publicly available to all members of the Carleton University community in a manner that protects the identity of those involved.

APPENDIX:

Senate Student Academic Integrity Appeals Committee: Rules and Procedures for Appeals

1. The Senate Student Academic Integrity Appeals Committee ("the Committee") will meet in accordance with the membership, quorum and conflict of interest requirements described in the Academic Integrity Policy ("the Policy").
2. Students have a right to appeal decisions and/or penalties made under the Policy to the Committee on the grounds set out in the Policy.

3. The appeal process should follow the timelines set out in the Policy. Timeframes are subject to extension only in exceptional circumstances, such as medically documented illness or religious obligations. A request for an extension should be directed to the Undergraduate Registrar's Office. The Office of Equity Services will provide students with advice on how to document religious obligations.
4. The Committee requires that students submit the appeal by completing the on-line form available on the Undergraduate Registrar's Office website. Requests for appeals not made on the standard form will be accepted, however students will be requested to fill in the standard form before the Committee hears the appeal.
5. The decision to permit the student or others to attend and observe all or some of the hearing proceedings shall be made by the Committee as required, based on any adverse impact this may have on the parties involved.
6. The Hearing shall be chaired by the chair of the Committee or, in the case of conflict of interest or the chair's absence by a member of the Committee elected by the Committee.
7. If an oral hearing is held, the student is encouraged to bring representation in the form of a friend, peer, or student advocate. The student or the Committee may invite the University Ombudsperson to attend.
8. In the event of an oral hearing, the Committee shall advise the student ahead of time of any time limits on the student's statement or witnesses' statements.
9. An oral hearing is not analogous to a legal trial and should avoid overly technical or litigious language, motions and procedures. The student and Committee members should play an active role in the proceeding, and have an opportunity to ask and respond to relevant questions. Oral hearings generally begin with an in camera meeting of the Committee. The remainder of the oral hearing will normally take the following form:
 1. A brief welcome and summary of procedures from a member of the Committee.
 2. The student's statement (or, when appropriate, a statement from the student's representative or advocate).
 3. Questions and requests for clarification by Committee members.
 4. Witness statement(s), when relevant.
 5. Questions and responses to witness statement(s) by the Committee and then the student.
 6. Any witness will normally only be permitted at the hearing for the duration of the witness's presentation.
 7. Any further questions for the student by the Committee, followed by questions for the Committee by the student.
 10. The Committee shall grant a student's appeal when she/he has provided a clear and convincing case.
 11. The Committee shall take decisions by majority vote. The chair of the

Committee will vote.

12. The Committee shall communicate the Committee's decision to the student in writing, within ten working days from the time that the Committee's decision is made.

13. The Committee shall report to Senate as described in the Senate Student Academic Integrity Policy.