



**FALL 2019**

## **BIOLOGY 1M03 BIODIVERSITY, EVOLUTION, & HUMANITY**

### **PROFESSORS**

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### **COURSE/LAB COORDINATOR**

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### **LECTURE TA**

**TBA**  
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### **COURSE DESCRIPTION**

This course covers fundamental evolutionary and ecological concepts with particular reference to biodiversity and human evolution. We examine the dynamics of species diversity and explore the evolution and impact of humans. Emphasis is placed on evolution, ecology, behaviour, and conservation as related to the gain and loss of biodiversity. The PBL (problem-based learning) and tutorial activities reinforce the lecture topics and develop skills facilitating the interpretation of scientific observations. The course is a prerequisite for many programs and most relevant to those focusing on evolution and ecology.

**PREREQUISITES:** Grade 12 Biology U or Biology 1P03 (Introductory Biology).

**ANTIREQUISITES:** Biology 1M03 is not open to students with credit or registration in ISCI 1A24.

### **BIOLOGY 1M03 LECTURES - GOALS & OBJECTIVES**

Biology 1M03 lectures are designed for students who intend to specialize in Science programs and is required for many higher level courses in the Faculty of Science. Upon completion of Biology 1M03, students will be able to:

1. Effectively discuss the fundamental concepts and underlying processes related to evolution, behaviour, ecology, and the conservation of biodiversity.
2. Work independently and in collaboration with others to compile, analyze, interpret, and present scientific data using oral, written, and internet formats necessary for biological sciences.

The primary goal of the course is to prepare students academically for subsequent, specialized Biology courses and to ensure that students acquire skills essential for upper-level biology courses and biology-related fields of study.

### **BIOLOGY 1M03 LECTURE SECTIONS & FORMAT**

Refer to the **2019-2020 Fall/Winter Session Undergraduate Course Timetable**.

The Biology 1M03 lectures will be a synthesis of several sources (the required textbooks, primary scientific literature, such as journal articles and current research). Lecture Outlines, Study Questions, and Supplementary Resources will be posted on the Biology 1M03 AVENUE site.

Students are expected to attend all lectures and supplement the posted Biology 1M03 AVENUE postings with their own written "in-class" lecture notes.

Tests and the final exam will include some concepts and current experimental work, which are not discussed in your textbooks. These topics will be discussed exclusively during lectures. The use of new material will demonstrate how the concepts covered in Biology 1M03 lead directly to recent work and to applied research.

## **BIOLOGY 1M03 TUTORIALS**

Refer to the **2019-2020 Fall/Winter Session Undergraduate Course Timetable**. Tutorials will be **every other week**. A schedule of tutorial dates is listed in the table on the next page.

The **5 tutorial periods which includes the PBL project** will consist of **mandatory tutorial-type activities**. Tutorial attendance is mandatory. Completion of the course requires attendance and participation in the tutorials (which includes in-tutorial, post-tutorial/online assignments/quizzes) as well as completion of the PBL project. Detailed schedules and tutorial information will be announced in lectures and posted in the Biology 1M03 AVENUE site.

## **REQUIRED BIOLOGY 1M03 TEXTBOOKS**

**BIOLOGICAL SCIENCE, McMaster Customized 3rd Canadian** By Freeman, Quillin, Allison, Black, Podgorski, Taylor, Carmichael, Harrington, and Sharp.

**Note:** Students are advised to purchase the most recent edition of the textbooks. Old editions do not contain the updated concepts and figures. An old textbook will put a student at a disadvantage.

### **Note: A Short Guide to Writing Biology**

This is an excellent reference which has been included in the Customized *Biological Science* (McMaster Edition) as Appendix C. Students will find Appendix C of the Customized *Biological Science* useful when completing their PBL report and PBL oral presentation.

## **OPTIONAL TEXTBOOK STUDY GUIDE**

The Study Guide is **highly recommended**. It contains summaries and practice questions related to the Biological Science textbook information.

## **ASSIGNED TEXTBOOK CHAPTERS**

### **Dr. Dushoff's Lectures (September 4 to October 23)**

**Biological Science, (Vol. 2 – Evolution, Diversity, & Ecology)**

- Chapter 1** Biology and the Tree of Life
- Chapter 22** Evolution by Natural Selection
- Chapter 23** Evolutionary Processes
- Chapter 24** Speciation
- Chapter 25** Phylogenies and the History of Life

**Human Evolution Supplement, (by Joan Sharp; This supplementary information will be available as a PDF on AVENUE to Learn)**

**Chapters 55-58** Specific readings to be announced in lecture.

### **Dr. Kolasa's Lectures (October 25 to December 4)**

**Biological Science, (Vol. 2 – Evolution, Diversity, & Ecology)**

- Chapter 50** Behavioural Ecology

**Human Evolution Supplement, (by Joan Sharp; This supplementary information will be available as a PDF on AVENUE to Learn)**

**Chapters 55-58** Specific readings to be announced in lecture.

**Biological Science, (Vol. 2 – Evolution, Diversity, & Ecology)**

- Chapter 49** Introduction to Ecology
- Chapter 51** Population Ecology
- Chapter 52** Community Ecology
- Chapter 53** Ecosystems
- Chapter 54** Biodiversity and Conservation

## **ACADEMIC PROPERTY STATEMENT**

No part of the Biology 1M03 lecture presentations or in-class discussions may be reproduced, in any form or by any means, without formal permission in writing by the Biology 1M03 Professors (J. Kolasa and J. Dushoff).

No visual media (voice recordings, overheads, photos, PowerPoint, MP3 media) may be reproduced or communicated by any means. Usage of voice recorders, cameras or video / camera-capable cell phones are not permitted to be used during lectures.

## **HOW TO LOG INTO THE BIOLOGY 1M03 AVENUE WEBSITE**

1. Start your web browser and go to: <http://avenue.mcmaster.ca>
2. **USER ID:** Type in the first part (in lower case letters) of your McMaster e-mail address (your MAC ID).  
  
For example: if your McMaster e-mail address is janedoe@mcmaster.ca,  
then your AVENUE User ID is janedoe.
3. **PASSWORD:** Type in your McMaster password.
4. Then click on the Login button.  
You will need Adobe Acrobat Reader (this is freeware) to read the Biology 1M03 *pdf* files.  
Most computers have Adobe Acrobat Reader installed as standard software.  
If your computer does not have it, you may download it from the Adobe website:  
<http://www.adobe.com/products/acrobat/readstep2.html>

**Note:** In this course, we will be using AVENUE for some assessments. Students should be aware that when they access the electronic components of this course, private information, including first and last names, user names for the McMaster University e-mail accounts, and program affiliations may become apparent to others participating in the course. Continuation in this course will be deemed as consent to this disclosure. If you have any questions or concerns about such disclosure please discuss them with the course professors and course coordinator.

## **GRADING**

Biology 1M03 final grades will be determined by the following evaluations:

	<b><u>DATES</u></b>	<b><u>VALUE</u></b>
TEST #1	Wednesday, October 9, 7:00 pm	17.5%
TEST #2	Wednesday, November 20, 7:00 pm	17.5%
PRE-TUTORIAL QUIZZES (five, 1% each)		5%
TUTORIAL ASSIGNMENTS (five, 2% each)		10%
PBL PROJECT		10%
	Annotated Bibliography	0.5%
	PBL Meeting	0.5%
	PBL Final Report	4%
	PBL Oral or Poster Presentation	4%
	Peer Review	1%
FINAL EXAM	Date to be announced	40%

Biology 1M03 final marks for the course are based on a total assessment of each student's record.

**It is a student's responsibility to make sure that his/her marks are complete and correct before the final exam is written.** Grade adjustment techniques may be used. The Professors and Course Coordinator reserve the right to change or revise information contained in this course outline. If either type of modification becomes necessary, students will be given reasonable notice with an explanation and an opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

## **BIOLOGY 1M03 POLICIES**

1. It is the responsibility of the student to attend the lecture and tutorial section to which he or she has been assigned. If a lecture or a tutorial is missed, students are responsible for the covered material. Permanent changes from the assigned sections may be completed through MOSAIC by Wednesday, September 11. After that time, no further section changes are possible.
2. It is the responsibility of the student to attend all tutorials as scheduled. There are no "make-up" tutorials.
3. By using the Drop Box system in place for Biology 1M03 tutorial assignments, the student takes full responsibility to ensure that the assignment be dropped into the correct box by the deadline. If an assignment is late or submitted to the wrong box, students will receive a 10% per day penalty that will accrue until the assignment is located. Drop boxes are located outside Burke Science Building (BSB) Room 201. **A late assignment should be submitted to the Course Coordinator during office hours to acquire a date/time stamp in order to avoid larger late penalties.**
4. If a student knows in advance that a test will be missed, the student may be given permission to write during the alternate test time. This permission is sought from the Course Coordinator, Marko Jovic. **It is not possible to do "make up" tests after the regularly scheduled and alternate test have been written.** With valid documentation/approval, a missed test's percent worth will be added to the percent worth of the Final Exam.
5. **To receive credit for Biology 1M03, students must complete a majority (75%) of the tutorials and other term assignments. A MSAF or other note(s) from the Associate Dean of Studies office does NOT exempt students from completing the course term requirements. If a student misses more than 75% of the tutorial and/or term components, credit in Biology 1M03 will NOT be given. This applies even if the absences from the tutorials or tests are validated by MSAF's or other Dean's notes AND the student has a passing grade the portion of the course the student has completed.**
6. Only use of the McMaster University approved calculator (*Casio fx-991MS* or *Casio fx-991MS Plus*) is allowed during evaluations (tests and the final exam). Do not forget to bring your calculator to the tests & final exam as there will not be any loaners available.
7. **Any marked term work (assignments, test, etc.) may be submitted for re-grading within 5 business days of the work being returned to the student.** The work must be accompanied by a re-grade request form printed from the Biology 1M03 AVENUE website and the reason for the regrade request must be completely justified on the form. Regrade requests made for frivolous reasons will be denied. Regrade forms and course work should be submitted to the regrade drop box outside BSB 201A.
8. **Any term mark corrections must be made before the Biology 1M03 Final Exam is written. Contact the Marko Jovic regarding test/assignment grades corrections.**
9. Because this course has compulsory tutorial activities, students must participate in all tutorial activities so that they have the appropriate academic skills necessary to succeed in upper level biology courses. If a student does not complete the majority of the mandatory tutorial activities, the Biology 1M03 instructors reserves the right to withhold a student's grade until the student has completed the required activities during a future semester. A passing grade in the tutorial component is required to pass Biology 1M03. This policy applies even if the student has notes from their Associate Dean of Studies office excusing him or her from the missed activities, tests, or assignments.

**10.** Tests and assignments must be completed and submitted individually, unless other instruction to work as a group is specifically defined. All reports and assignments which are submitted must be unique. It is considered academic dishonesty to submit work that is not originally yours or that has been previously submitted. All cases of academic dishonesty will be dealt with through the office of Academic Integrity at McMaster University.

**11.** The instructors and the university reserve the right to modify elements of the course during the term. The university may change dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster e-mail and course websites regularly (at least every other day) during the term and to note changes.

## **12. Requests for Relief for Missed Academic Term Work**

### **For absences from classes lasting up to three calendar days:**

Using the McMaster student absence form (MSAF) on-line, self-reporting tool, undergraduate students may report absences lasting up to three calendar days and may also request relief for missed academic work. The submission of medical or other types of supporting documentation is not required. Students may use this tool to submit a maximum of one request for relief of missed academic work per term. Students must immediately follow up with their course instructors regarding the nature of the relief. Failure to do so may negate the opportunity for relief. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

### **For absences from classes lasting more than three calendar days:**

Students who are absent more than three calendar days cannot use the on-line, self-reporting tool to request relief. They **MUST report to the Office of the Associate Dean of their respective Faculty** to discuss their situation and may be required to provide appropriate supporting documentation. If warranted, students will be approved to use a discretionary version of the MSAF on-line, self-reporting tool.

### **For the reporting of more than one request for relief per term:**

Students who wish to submit more than one request for relief of missed academic work per term cannot use the on-line, self-reporting tool to request relief. They **MUST report to the Office of the Associate Dean of their respective Faculty** to discuss their situation and may be required to provide supporting documentation. If warranted, students will be approved to use a discretionary version of the MSAF on-line, self-reporting tool.

For absences from classes lasting more than three calendar days or for the reporting of more than one request for relief per term: if the reason was medical, the approved McMaster University Medical Form covering the relevant dates must be submitted. The student must be seen by a doctor at the earliest possible date, normally on or before the date of the missed work and the doctor must verify the duration of the illness. Relief will not be considered for minor illnesses. If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within five working days. In some circumstances, students may be advised to submit a Petition for Special Consideration (Form A) seeking relief for missed academic work. In deciding whether or not to grant a petition, adequacy of the supporting documentation, including the timing in relation to the due date of the missed work and the degree of the student's incapacitation, may be taken into account. If the petition is approved the Faculty Office will notify the instructor(s) recommending relief. The student must contact the instructor promptly to discuss the appropriate relief. Failure to do so may negate the opportunity for relief. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

The MSAF on-line, self-reporting tool cannot be used to apply for any course work that is valued at 25% or greater than the final grade, or any final examination or its equivalent. See *Petitions for Special Consideration* in this section of the calendar. Students should expect to have academic commitments Monday through Saturday but not on Sunday or statutory holidays. Students who require accommodations to meet a religious obligation or to celebrate an important religious holiday should make their requests within three weeks of the start of term to their Faculty office.

**There will be no discretionary approvals given by the Biology 1M03 instructional team.**

## BIOLOGY 1M03 MSAF POLICY

Course component not completed (MSAF approved)	Result
Pre-tutorial quiz (1% of final grade)	1% added to the value of final exam, now 41% of final grade.
Post-tutorial assignment (2% of final grade)	2% added to the value of final exam, now 42% of final grade.
Annotated bibliography (0.5% of final grade)	0.5% added to the value of final exam, now 40.5% of final grade.
PBL meeting (0.5% of final grade)	0.5% added to the value of final exam, now 40.5% of final grade.
PBL written report (4% of final grade)	The value of the PBL written report will not be added to the value of the final exam. The PBL project is a group project and equal contribution to the written report is required in order to obtain a PBL written report grade. Inadequate or complete lack of contribution to the group's PBL written report may result in a grade of 0 being assigned to this course component.
PBL presentation (4% of final grade)	The value of the PBL presentation will not be added to the value of the final exam. If a group member (or members) is absent during the PBL presentation, the missing member (or members) will be required to present the entirety of the group's presentation at an alternate time. Inadequate contribution or complete lack of completion of the PBL presentation may result in a grade of 0 being assigned to this course component.
MSAF submitted for only test 1 (17.5% of final grade)	<b>17.5% added to the value of final exam, now 57.5% of final grade.</b> <b>Final exam composed of 80 multiple choice questions and 15 marks of short answer questions, 2.5 hours in duration, written in an alternate location.</b>
MSAF submitted for only test 2 (17.5% of final grade)	<b>17.5% added to the value of final exam, now 57.5% of final grade.</b> <b>Final exam composed of 80 multiple choice questions and 15 marks of short answer questions, 2.5 hours in duration, written in an alternate location.</b>
MSAF submitted for both test 1 and test 2 (17.5% + 17.5% = 75% of final grade)	<b>35% added to the value of final exam, now 75% of final grade.</b> <b>Final exam composed of 80 multiple choice questions and 30 marks of short answer questions, 3 hours in duration, written in an alternate location.</b>
<b>No MSAF submitted for either Test 1 or Test 2</b>	Final exam valued at 40% of final grade and composed solely of 80 multiple choice questions, 2 hours in duration.

**13.** As a student enrolled in this course you have been granted permission to access an online learning management system, Avenue to Learn. Avenue to Learn course pages are considered an extension of the classroom and usage is provided as a privilege subject to the same code of conduct expected in a lecture hall (see relevant section of the student code of conduct below). This privilege allows participation in course discussion forums and access to supplementary course materials. Please be advised that all areas of Avenue to Learn, including discussion forums, are owned and operated by McMaster University. Any content or communications deemed inappropriate by the course instructor (or designated individual) may be removed at his/her discretion. Per the University Technology Services Code of Conduct, all members of the McMaster community are obligated to use computing resources in ways that are responsible, ethical and professional. Avenue to Learn Terms of Use are available at <http://avenue.mcmaster.ca>.

### Student Code of Conduct - Appendix D

Major Offences include, but are not limited to: engaging in disruptive behaviour. Disruptive behaviour is behaviour in class or out of class which involves substantial disorder and/or disrupts the operation of the University engaging in verbal or non-verbal behaviour or communication toward an individual or group which is considered to be intimidating, harassing and/or discriminatory

## **BIOLOGY 1M03 TESTS AND FINAL EXAMINATION FORMAT**

Biology 1M03 tests may include multiple choice, figures, graphs, and written factual, conceptual, and application style questions. Tests will be composed of 30 multiple choice questions, and 15 marks of short answer questions.

The Biology 1M03 final exam will be composed of 80 multiple choice questions **unless** a MSAF is submitted to report the non-completion of test #1 and/or test #2. See the Biology 1M03 MSAF policy on page 6 for details. The Biology 1M03 final exam is cumulative and will evaluate the information covered during the entire academic term.

## **ACADEMIC INTEGRITY**

Students are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials students earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

**Students are responsible to understand what constitutes academic dishonesty.** For information on the various types of academic dishonesty, please refer to the *Academic Integrity Policy*, located at [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

The following illustrates only three forms of academic dishonesty:

- Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained
- Improper collaboration in group work
- Copying or using unauthorized aids in tests and examinations

Any student who infringes one of these resolutions will be treated according to published policy. To deter acts of academic dishonesty in Biology 1M03, there will be multiple versions of tests & final exams. In addition, marked student course work will be randomly scanned and photocopied.

## **AUTHENTICITY/PLAGIARISM DETECTION**

Students who do not wish to submit their work through A2L and/or Turnitin.com must still submit an electronic and/or hardcopy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com or A2L. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g. on-line search, other software, etc.). To see the Turnitin.com Policy, please go to [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

## **ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES**

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail [sas@mcmaster.ca](mailto:sas@mcmaster.ca). For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities. <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

Students who are registered with SAS should meet with the Course Coordinator in order to discuss their academic accommodations.

## **ACADEMIC ACCOMODATION FOR RELIGIOUS, INDIGENOUS, OR SPIRITUAL OBSERVANCES (RISO)**

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request to their Faculty Office normally **within 10 working days of the beginning of term in which they anticipate a need for accommodation** or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments and tests.

## **McMASTER UNIVERSITY GRADING SCHEME**

Grades obtained for Biology 1M03 will be converted according to the following scheme, which is the one in general use at McMaster University.

90 - 100%	A+	12
85 - 89%	A	11
80 - 84%	A-	10
77 - 79%	B+	9
73 - 76%	B	8
70 - 72%	B-	7
67 - 69%	C+	6
63 - 66%	C	5
60 - 62%	C-	4
57 - 59%	D+	3
53 - 56%	D	2
50 - 52%	D-	1
0 - 49%	F	0

## **THE BIOLOGY ACHIEVEMENT AWARD**

The Department of Biology recognizes the importance of superior undergraduate academic performance in Biology 1M03 among our students. Biology Academic Achievement Awards are conferred to Science I students, who obtain the highest standings in Biology 1A03. No applications are necessary as the awards are based solely on course grades.

## **STUDY SKILLS**

The academic transition from high school to university is often very challenging for many students. For students who wish to improve their academic skills, study habits, time management, or for students who require specialized services [learning challenged students and ESL (English as a second language students)], assistance is available at both the Student Success Centre located in Gilmour Hall 110 and the Student Accessibility Services located the lower level (basement) of the McMaster University Student Centre B107.

## **MISSED FINAL EXAM**

Students who miss the Biology 1M03 Final Exam for a valid reason may apply to the Office of their Associate Dean of their respective faculty for permission to write a Deferred Final Exam. The student must submit a completed McMaster University Medical Certificate and the completed application for the deferred Final Exam to the Office of the Associate Dean within one week of the Final Examination period.

## **EXTREME CIRCUMSTANCES**

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g. severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.