



Winter 2018

BIOLOGY 1A03 - CELLULAR AND MOLECULAR BIOLOGY

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COURSE/LABORATORY COORDINATOR

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LECTURE TA

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Contact Jo via her discussion forum on AVENUE or during her office hours.

COURSE DESCRIPTION

Structure, molecular composition, and function in sub-cellular and cellular systems.

Prerequisites

Grade 12 Biology U or Biology 1P03 and registration in any Level 1 program in the Faculty of Science or any program above Level 1; or any program above Level 1; or registration in Arts & Science I, Medical Radiation

Sciences I, Chemical Engineering and Bioengineering, Electrical and Biomedical Engineering. Not open to students with credit or registration in ISCI 1A24. Students are encouraged not to take Biology 1A03 and Biology 1M03 in the same term.

Co-requisites

WHMIS 1A00, BIOSAFE 1BS0 if not already completed. Both co-requisites must be completed prior to the first lab. Students enrolled in Biology 1A03 must also register in WHMIS 1A00 and BIOSAFE 1BS0.

All Biology 1A03 students must have completed the WHMIS 1A00 and BIOSAFE 1BS0 safety workshops in order to participate in the Biology 1A03 labs. This safety course is being offered on Avenue. For information regarding the Safety Workshops, refer to their listings posted on Avenue or visit the Environmental & Occupational Health Support Services website eohss@mcmaster.ca.

BIOLOGY 1A03 COURSE GOALS & OBJECTIVES

The Biology 1A03 course is 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 1A03, students will be able to:

1. Effectively discuss the fundamental concepts and underlying processes related to cellular and molecular biology.
2. Implement laboratory technical skills necessary for biological sciences.
3. Work independently and in collaboration with others to compile, analyze, interpret, and present scientific data using oral, written, and internet formats.

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 1A03 LECTURE CONTENT

Biology 1A03 is taught in a blended format, meaning that you will learn some of the course content at your own pace and on your own time through online visually rich web modules. Face-to-face time in interactive lectures is used to explore applied contexts with research and data analytics, and review lectures give you the opportunity to clarify concepts that you may have struggled with online.

BIOLOGY 1A03 LABS

Refer to 2017-2018 Fall Session Undergraduate Course Timetable.

Biology 1A03 labs will be held in the Burke Science Building (BSB) in laboratories 213, 214, 217, and 218.

Please refer to the Biology 1A03 Lab Manual/Lab Notebook that is available for purchase from The Campus Store, and the course calendar that is posted on the Biology 1A03 Avenue site.

EXEMPTION FROM THE LAB COMPONENT

Students with previous lab credit in Biology 1A03 may apply for an exemption from the lab component in Biology 1A03. Note that exemptions are NOT automatic. Forms to apply for the exemption are available from the Coordinator. Forms must be submitted to the Coordinator by Friday January 12th.

If the exemption is not approved, students must complete ALL of the 1A03 labs.

BIOLOGY 1A03 TEXTBOOK

BIOLOGY HOW LIFE WORKS 2nd Edition, Volume 1: Cells, Genetics, and Evolution by James Morris, Daniel Hartl, Andrew Knoll, and Robert Lue. Chapter 1 – 24.

BIOLOGY 1A03 HOW LIFE WORKS ONLINE LAUNCHPAD

The **BIOLOGY HOW LIFE WORKS** publishers have created an interactive website called LaunchPad. LaunchPad contains interactive videos, practice questions, external links, and many other additional resources. LaunchPad also contains a copy of the textbook in electronic form (eBook). The eBook contains chapters electronically that are present in the reading list (see below), but not present in the soft cover volume 1 textbook. LaunchPad and the eBook will be used to facilitate learning.

iClickers

Classroom response systems are utilized in the lectures. Students may purchase an iClicker at McMaster's Campus Store (Main Bookstore). iclicker activities will serve as lecture feedback and student engagement tools. iClickers will NOT be used for formal assessment (i.e. not for grades).

BIOLOGY 1A03 LABORATORY MANUAL AND LABORATORY NOTEBOOK

The Biology 1A03 laboratory manual and notebook are available for purchase from The Campus Store (McMaster's Main Bookstore).

ADDITIONAL REQUIRED LAB SUPPLIES

A lab coat, goggles (or protective eyewear), pens, pencils, erasers, paper, clear ruler, and the McMaster approved Science calculator are available for purchase at The Campus Store (McMaster's Main Bookstore).

ASSIGNED READING LIST

Refer to the Biology 1A03 AVENUE course website for the assigned reading list.

HOW TO LOG INTO THE BIOLOGY 1A03 AVENUE SITE

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 MUSS e-mail address (Your MAC ID).

For example: if your McMaster e-mail address is janedoe@muss.cis.mcmaster.ca, then your Avenue User ID is janedoe.

3. PASSWORD: Type in your McMaster Modem / Printing / CIS Lab Access /Proxy Services password.

4. Then click on the Login button.

You will need Adobe Acrobat Reader (this is freeware) to read the Biology 1A03 *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 professors and Coordinator of this course.

BIOLOGY 1A03 POLICIES

1. It is the responsibility of the student to attend the lecture and lab sections to which he or she has been assigned. If a lab or a lecture is missed, students are responsible for the covered material. Permanent changes from the assigned sections may be made online through MOSAIC by Friday January 12th. After this time, no further section changes are possible.
2. It is the requirement that students complete at least 75% of the course work to obtain credit for Biology 1A03, including labs, tests, and assignments. All students must write the final examination.
3. In order for a student to pass the course, students must pass the lab component of the course. It is also a requirement of Biology 1A03 that students complete the majority of the lab exercises.

Because this course has a compulsory lab component, it is the responsibility of the university to ensure that students have the appropriate academic and laboratory skills necessary to succeed in upper year biology courses. If a student does not complete the majority of the lab component, the university reserves the right to withhold a student's grade until they have completed the required labs during a future semester. This policy applies even if the student has notes from their Associate Dean of Studies office excusing him or her from the missed labs, tests, or assignments.

It is the responsibility of the student to attend all labs as scheduled.

A missed lab will result in a grade of zero unless the student's absence is supported by a MSAF or the student's Associate Dean's (Studies) office. Documentation of the reason for the absence will be required by the Associate Dean's office. It may be possible to reschedule a missed lab. See the Coordinator to do so.

Biology 1A03 requires the submission of one formal lab report during the term. If a student misses any one of the labs, please see the Coordinator for further directions as the student will still be required to write the formal lab report at the end of the term.

If a student is not able to attend one of the labs (Lab 1A, Lab 1B, Lab 2, Lab 3, Lab 4, Lab 5, Lab 6, Lab 7, or Lab 8), he/she must complete the following two steps in order to prevent a zero being assigned to his/her lab report grade.

Step 1 - The student will need to complete a MSAF (<http://mcmaster.ca/msaf/>) for the missed work.

Step 2 - Contact Alastair Tracey to ensure that MSAF confirmation email was received.

The value of his/her missed lab will be added on the value of his/her Lab Exam unless the student can complete the lab at an alternate time.

In addition to the Biology Statement on Academic Dishonesty, it is the policy of Biology 1A03 that all data collected in the laboratory be handed in with the lab report when applicable. Furthermore, data must be written in ink and signed by the Lab Teaching Assistants. A mark of zero will be assigned if the data are not attached when applicable.

A laboratory notebook will be kept as a complete record of a student's activities in the Biology 1A03 labs. It will be the primary resource allowed to students in the Lab Exam at the end of the term.

A lab coat and goggles are required for admission to the labs in Biology 1A03. Without a lab coat and goggles, students will not be allowed to enter the lab room.

4. By using the Drop Box system in place for Biology 1A03, the student takes full responsibility to ensure that the assignment or lab be dropped into the correct box by the deadline, which is 1:00 pm on the day in which it is due. Drop boxes are located outside BSB room 201. If an assignment or lab is late or submitted to the wrong box, a 10% per day penalty will accrue until the assignment or lab is located. A late lab should be submitted directly to the Coordinator during office hours.
5. If a student knows in advance that a test will be missed (for a legitimate reason), the student may be given permission to write during the alternate test time. Any student that needs to write during the alternate test time due to a course conflict, religious, medical, or personal reason should speak to Alastair Tracey IN PERSON.
6. Only use of a McMaster University approved calculator (*Casio fx-991MS* or *Casio fx-991MS Plus*) is allowed during evaluations (tests and the final exam). Written answers must be completed in blue or black ink pen. Use of correction fluid or correction tape is not permitted on tests or exams.
7. All tests, lab reports, and assignments should be completed and submitted individually unless other instructions to work in groups are specifically defined. All reports and assignments which are submitted should be unique. It is considered academic dishonesty to submit work that was 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.
8. Sometimes a student may encounter a technical difficulty with the quizzes. Some of the common issues are outlined (with solutions to them) in the Biology 1A03 Lab Information Document that found in the Lab Manual. If a student needs help with other problems, the Coordinator can likely help, but only if the student comes to see the Coordinator in person in BSB 201A before his/her quiz deadline. If the Coordinator does not know about the student's technical difficulty until after the due date has passed, there is nothing that the Coordinator can do to help the student. The student will only be able to inform the Coordinator of technical difficulties during their office hours (which do not include evenings or weekends), so please plan to complete the quizzes well in advance of the due dates.
9. Any marked term work (labs, tests, 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 1A03 Avenue site 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 Coordinator's office.
10. Any term mark corrections must be made BEFORE the Biology 1A03 Final Exam is written. Contact the Coordinator regarding tests/assignments grades corrections. There are no alternative assignments that can be completed by students for the purpose of increasing their final grade.
11. The professors, Coordinator, and 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 once per day) during the term and take note of updates or 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 normally 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 days cannot use the on-line, self-reporting tool to request relief. They **MUST** report to their Faculty Office 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 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 their Faculty Office 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 relief from any course work that is valued at greater than 25% of 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 the Course Coordinator.

There will be no discretionary approvals given by the Coordinator or the Professors.

BIOLOGY 1A03 MSAF POLICY

Course component not completed (MSAF submitted)	Result
Lab quiz (0.5% of final grade)	0.5% added to the value of lab exam, now 10.5% of final grade.
Informal lab report (1% of final grade)	1% added to the value of lab exam, now 11% of final grade.
Formal lab report (10% of final grade)	48 hour extension of deadline. The value of the formal lab report will not be added to the value of another course component.
Lab exam (10% of final grade)	Completion of a make-up lab exam or alternate evaluation. The value of the lab exam will not be added to the value of another course component.
MSAF submitted for only test 1 (12% of final grade)	12% added to the value of final exam, now 52% of final grade. 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.
MSAF submitted for only test 2 (15% of final grade)	15% added to the value of final exam, now 55% of final grade. 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.
MSAF submitted for both test 1 and test 2 (12% + 15% = 27% of final grade)	27% added to the value of final exam, now 67% of final grade. Final exam composed of 80 multiple choice questions and 30 marks of short answer questions, 3 hours in duration, written in an alternate location.
No MSAF submitted for either test 1 or test 2	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 instructors or coordinator 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: (h) 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 and (j) 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 1A03 TESTS AND EXAM FORMATS

Biology 1A03 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 1A03 lab exam will be composed of 27 multiple choice questions.

The Biology 1A03 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 1A03 MSAF policy on page 7 for details. The Biology 1A03 final exam is cumulative and will evaluate the information covered during the entire academic term.

GRADING Final Biology 1A03 grades will be determined by the following evaluation:

ITEM	GRADING SCHEME
PRE-LAB QUIZZES Throughout the term (10 quizzes x 0.5% each)	5%
INFORMAL LABS Throughout the term (8 reports x 1% each)	8%
FORMAL LAB REPORT To be announced during laboratory (1 report)	10%
TEST 1 Friday, February 9th, 7:00 pm to 8:30 pm	12%
TEST 2 Friday, March 16th, 7:00 pm to 8:30 pm	15%
LAB EXAM Tuesday, March 27th, 7:00 pm to 8:00 pm	10%
FINAL EXAM Date and time to be announced	40%

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. Grade adjustment techniques may be used. However, marks will NOT be bell-curved at any point in the term.

The Professors and the Coordinator reserve the right to change or revise information contained in this course outline. The professor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. 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.

Marks will be calculated according to the above grading scheme. The Biology Department does not approve of altering grades arbitrarily at a student's request.

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. 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.

McMASTER UNIVERSITY GRADING SCHEME

Grades obtained for Biology 1A03 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 1A03 among our students. Biology Academic Achievement Awards are conferred to Science I students, who obtain the highest standings in Biology 1A03. Approximately ten awards, each consisting of a book prize and a certificate, are given per year for the course. No applications are necessary as the awards are based solely on course grades.

MISSED FINAL EXAM

Students who miss the Biology 1A03 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.

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.

ACADEMIC DISHONESTY

All students in Biology 1A03 are expected to display honesty and utilize ethical behaviour in all aspects of their academic learning. Academic dishonesty is to knowingly act or fail to act in a manner which results or could potentially result in consequences, including a grade of zero on a test or assignment, loss of course credit with a notations that reads "Grade F, assigned for academic dishonesty", and/or suspension or expulsion from McMaster University.

Students are responsible for understanding what constitutes academic dishonesty. Refer to <http://www.mcmaster.ca/academicintegrity> for further clarification.

The following descriptions some of the forms of academic dishonesty:

1. Plagiarism (the submission of work that is not a student's own or for which other credit has been obtained)
2. Improper collaboration in group work.
3. Copying or using unauthorized aids during tests and examinations.

In order to uphold the integrity of the Department of Biology at McMaster University, please consult the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty stipulated in the Senate Policy Statements, presented at registration in the Senate Office, and also accessible on the web,

<http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf>

Any student who infringes one of these resolutions will be treated according to published policy. To deter acts of academic dishonesty in Biology 1A03, there will be multiple versions of tests & final exams. In addition, marked student course work will be randomly scanned and photocopied.

Winter 2018 Biology 1A03 Course Outline Updated January 1, 2018