



BIO2133: Genetics

Course Syllabus

Professor Colin Montpetit



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Course Description

BIO 2133

Genetics

(3,0,0b) 3 cr. HYB

Introduction to Mendel's laws of inheritance; application of Mendelian analysis to problems in genetics including: gene mapping and linkage, molecular genetics, bioinformatics and population genetics. Laboratory session includes experiments to illustrate genetic principles, tutorial and problem sessions. Previously BIO2123

Prerequisite: BIO1140 or 1540

BIO2133 is a course that will engage us as collaborators to study, discuss, and apply the conceptual frameworks that provide the foundation of genetics as a method for discovery-based research and clinical investigations. This course is an active learning zone that will combine online self-directed and self-reflective components with significant (F2F) face-to-face classes, and experiential learning (**Option A:** laboratory sessions or **Option B:** Community Service Learning Placement (limited space – based on availability – see annex 4)).

As a student in this class, you can expect to increase your disciplinary knowledge of biology, think analytically and critically about issues relating to genetic testing in the research and clinical settings, and actively collaborate with your peers to share ideas and learning in class, labs, and during exams (yes...even during exams!!). This course is most appropriate for students who have an interest in adding genetics into their "disciplinary knowledge and community skills toolbox" as students of the biological and medical sciences.

Professor: Colin Montpetit, Ph.D.

Contact info:



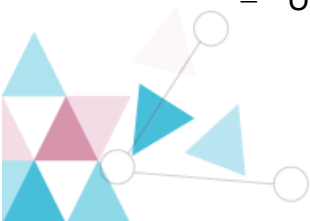
colin.montpetit@uottawa.ca



613-562-5800 X3933

Drop-in times: The following drop-in times (and locations) have worked in the past and I will continue with the practice. I'm usually at the classroom 30-40min before class time to discuss class content or other things.:

- Mondays – 3:00PM to 4:00PM (outside FSS 2005)
- Wednesdays – 1:30PM to 2:30PM (outside FSS 2005)
- Thursdays – 1:00PM to 5PM (my office - GNN 274) (subject to changes)
- Or by appointment (send me an email to schedule)





Teaching and Learning Objectives

BIO 2133 is a course offered by the Department of Biology and is designed to engage students in the development of their conceptual knowledge and scientific skills within the common "Departmental Learning Program Learning Outcomes" associated with: "Biological techniques and procedures", "Community and Communication", "Critical and Analytical Thinking", "The Unifying themes in Biology", and "The Scientific Method and Literacy"

Course Learning Objectives



At the end of this course, you should be able to do the following:

- Describe the molecular anatomy of genes and genomes.
- Compare different types of mutations and describe how each can affect genes and the corresponding mRNAs and proteins.
- Describe the mechanisms by which an organism's genome is passed on to the next generation.
- Describe the phenomenon of linkage and how it affects assortment of alleles during meiosis.
- Propose approaches and methods to conduct genetic studies on human and model organisms
- Deduce information about genes, alleles, and gene functions from analysis of genetic crosses and patterns of inheritance.
- Apply the results of molecular genetic studies in model organisms to understand aspects of human genetics and genetic diseases.
- Interpret results from molecular analyses to determine the inheritance patterns and identities of human genes that can mutate.
- Describe the processes that can affect the frequency of phenotypes in a population over time.

Program Level Learning Objectives



In addition to the course learning objectives, activities will also engage you in program level learning objectives. These include:

- Communicate information, arguments, and analyses accurately and reliably in writing and one-on-one, in small groups and on exams and to honestly and fully engage in all the learning opportunities offered in this course.
- Propose approaches and methods to conduct genetic studies on human and model organisms.
- Evaluate the social impacts of genetics.
- Operate with integrity and an awareness of the responsibilities of a biologist and a professional.
- Evaluate case scenarios and analyse research data.
- Respect the limitations of your knowledge and that of your classmates and others.

Lesson Planner

A learning planner that will help you plan your studies and know which learning outcomes will be address by which formal assessment (midterm and/or final exams) is provided on the **Online Course Syllabus**. As a point of reference, I also provide you the 2017 learning planner what it looked it by the end of the term.



2018 Learning Planner (PDF) (visit online course syllabus to download)



2017 Learning Planner (PDF) (visit online course syllabus to download)

Please keep an eye on it as I may update it on occasion to make sure it reflects accurately what we are doing in class. I will make announcements when updates are made.

Note: This course has a laboratory component. **For those taking the lab (Option A), Lab learning objectives will be addressed in the Laboratory web site and by the Lab Coordinator.** For those in the Community Service Learning Option (**Option B**), the learning objectives are communicated in the **2018 Learning Planner**.





Instructional Approach

BIO 2133 is a **Blended Learning Course** designed as an **active learning zone** that combines **online activities** (self-directed and self-reflective activities), **face-to-face (F2F)** classes, and **experiential learning** to provide you with experiences that will allow you to play an integral part in achieving the course objectives and helping others do so as well.

The objective of this course is to study, discuss, and apply within an active and collaborative environment, the conceptual frameworks that provide the foundation of genetics as a method of scientific discovery and its applications. This will be accomplished through interactive lectures (using a student response system (e.g. clickers), case scenarios, problem-based learning (i.e. online tutorials and quizzes, practice problems, etc.), collaborative exams (i.e. 2-stage exams) and laboratory activities or Community Service Learning (**see annexe 4**).

I have taught the course for the past 10 years at the University of Ottawa and have implemented several teaching and learning approaches that will help you succeed in this course. My classroom approaches differs from the mainstream approaches to teaching in the large classroom (Lecture) and with reason....**THEY WORK and students do so much better!!**

What are Blended Learning Courses?

Click on the following links to learn more about uOttawa's perspectives on Blended Learning Courses:



What is a blended/hybrid course?

<http://tlss.uottawa.ca/site/en/what-is-a-blended-course>



What are the advantages of blended/hybrid courses for students and professors?




<http://tlss.uottawa.ca/site/en/benefits-of-blended-courses>

What is Community Service Learning?

CSL is a form of experiential learning which allows students to contribute to their community by participating in professor-approved community service placements that are related to their course learning objectives. This program is coordinated by the University of Ottawa's Michaëlle Jean Centre for Global and Community Engagement.

Students choosing this option (**see annexe 4**) will engage in their placement as a replacement to the lab activities and be required to submit reflections of their experiences. Please be aware that there will be a limited number of placements (up to 40 as they become available) and will be given on a first come first serve basis. **See annexe 4 for instruction on how to sign-up**).

Assessment Methods

Assessment Methods	Value (%)
 <p>Assessments <u>FOR</u> learning (Bin points) - 15%</p> <p>Answering questions in class (e.g. Echo360) and online (MasteringGenetics and Brightspace) will earn you participation marks. Each time you submit an answer to a question in class or online, you will earn a “bin point”. If you collect 80% of the total of “bin point” questions I pose, you will earn the full 15% of the marks. If you engage less than 80% of the time, the following equation will be used to calculate your mark: $[(\text{\#of bin pts}/\text{\#of total bin points}) * 15] / 0.8$.</p> <p>Notice, that I will not grade the correctness of your answers. Therefore, you should not fear getting incorrect answers. The point is for you to try and receive feedback on your progress in the course so that you can apply your learning on the exams. Because this marking scheme takes into account potentially missed classes, forgotten online activities, and technical issues, doctor’s notes (or other notes) will not be accepted. See course policies for more information.</p>	
 <p>Assessments <u>OF</u> Learning - Exams - 65%</p> <p>Midterm exam #1 - Saturday Feb 3, 2018, 10:00am-12:00pm (noon) Midterm exam #2 (cumulative) - Saturday March 17, 2018, 10:00am-12:00pm (noon) Final exam (cumulative) - April exam period, TBA</p> <p>Weighting of the exams will be based on your success on the exams. The equation giving you the best grade will be used:</p> <ul style="list-style-type: none">- Equation #1: 10% exam 1 + 20% exam 2 + 35% Final exam- Equation #2: 5% exam 1 + 15% exam 2 + 45% Final exam- Equation #3: 7.5% exam 1 + 17.5% exam 2 + 40% Final exam- Equation #4: 2.5% exam 1 + 12.5% exam 2 + 50% Final exam <p>Note 1: The exams will be cumulative. Note 2: All exams will be 2 stage exams. Stage 1 will be completed individually and stage 2 will be completed in teams of 3-4 students. See annexe 2 for details on how your exam grades will be calculated. Note 3: The class exams will be based on the learning outcomes from the course component of the course (and will not include lab related learning outcomes).</p>	
 <p>Option A: Laboratory activities 20% Lab assignments, reports and quizzes</p> <p>Option B : Community Service Learning (CSL) - Replaces the lab component. (Limited space). See Annexe 4 for further details on the assessments and how your final grade will be calculated. (I will use a different equation).</p>	
Total	100%

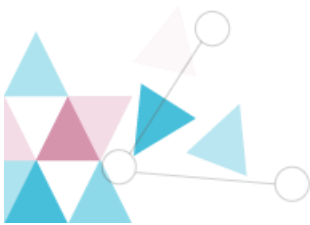
Course Calendar

Visit course website for updates to the calendar

Class schedule: Section A - Monday 100pm to 220pm, MRN150; Wednesday 1130am-100pm, MRN150
Section B - Monday 400pm to 530pm, FSS2005; Wednesday 230pm-400pm, FSS2005



Date	Day	Virtual	# cours	F2F	Topic
Jan 8	M	Virtual	1	F2F	Introduction (What is a blended course? CSL?)
Jan 10	W		2	F2F	Diagnostic test; Gene expression
Jan 15	M	Virtual	3	F2F	FOXP2 Case study: Gene expression, phenotypes, alleles, and mutations
Jan 17	W		4	F2F	FOXP2 Case study: continues
Jan 22	M	Virtual	5	F2F	Case study: Athletic competitions and gender testing
Jan 24	W		6	F2F	Case study: In need for additional data, Getting it right
Jan 29	M	Virtual	7	F2F	Anatomy of genes, genomes and chromosomes
Jan 31	W		8	F2F	Anatomy of genes, genomes and chromosomes
Feb 3	S	MIDTERM			
Feb 5	M	Virtual	9	No class	Genetics studies, tests, screens, DNA markers, crosses
Feb 7	W		10	F2F	Genetics studies, tests, screens, DNA markers, crosses
Feb 12	M	Virtual	11	No class	Mendelian inheritance (1,2,3 genes)
Feb 14	W		12	F2F	Case study: Getting it right (Part II) - Pedigrees
Feb 19		READING WEEK			
Feb 21		READING WEEK			
Feb 26	M	Virtual	13	No class	Epistasis and Complementation testing
Feb 28	W		14	F2F	Mendelian Inheritance – Epistasis
Mar 5	M	Virtual	15	No class	Epistasis and Complementation testing
Mar 7	W		16	F2F	Case study –Complementation testing
Mar 12	M	Virtual	17	No class	Extranuclear inheritance, epigenetics
Mar 14	W		18	F2F	Extranuclear inheritance, epigenetics
Mar 17	S	MIDTERM			
Mar 19	M	Virtual	19	No class	Gene linkage analysis and DNA markers
Mar 21	W		20	F2F	Gene linkage analysis and DNA markers
Mar 26	M	Virtual	21	No class	Molecular markers and analysis
Mar 28	W		22	F2F	FOXP2 case study: Part II – gene discovery!
Apr 2	M	EASTER BEAKEASTER BREAK			
Apr 4	W	Virtual	23	F2F	Case study : Getting it right? More data is needed!
Apr 9	M		24	F2F	Wrap-up



Student Workload

Based on University of Ottawa policies, **1 credit** (<https://www.uottawa.ca/administration-and-governance/academic-regulation-8-courses>) **typically corresponds to 45 hours of work**, including class attendance (lectures, labs, practical training), online presence, personal work, practical assignments and exam preparation. As such, for a 3 credit course, we expect that you dedicate a minimum of 135hours of study based on the teaching and learning approaches used in the course.

The following table provides a guide for how much time you should dedicate to each component of the course:

Teaching – Learning Activities		# of activities	# of hours per week	Total Hours
In-class & diagnostic tests	Face-to-Face. Lectures, diagnostic tests including minute papers, pre/post-tests, student surveys, and course evaluations will be conducted throughout the term	16	1.33 (80 minutes)	~22
Online	Homework (i.e. readings, activities, quizzes, problem sets, articles)	10	4	~40
Study	Private study (readings, revisions, exam preparation)	12	4	48
Option A: Labs	Laboratory sessions (3h) + preparation (2h)	5	5	25
Option B	Community Service Learning (see annexe 4)		~3	~30

Total hours ~135





Essential and required resources



Official Textbook and MasteringGenetics (Required)

Concepts of Genetics, 11th Edition, by Klug, Cummings, Spencer, and Palladino. Pearson Education, 2015. **Access to MasteringGenetics and the text is required in this course!** and can be purchased at the uOttawa and Agora bookstores.

Here I provide perspectives on two options for which you can procure the required resources in regards to the text and MasteringGenetics.

This year, we offer 1 of 3 purchasing options to acquire these learning needs:

Option 1 - Loose leaf text + MasteringGenetics (+e-text) - ~\$110

Option 2 - Hardtext + MasteringGenetics (+e-text) - ~ \$192

Option 3 - MasteringGenetics without e-text - ~\$60 (required if you buy a used text)

Please be aware that we **WILL NOT recommend the purchase of a used textbook, other than the 11th edition (used or new), nor support its use.** Be aware, **any and all** second-hand version of the text **will NOT** come with updated codes to register to Mastering. If you buy a second-hand copy of the textbook you will still have to purchase access to MasteringGenetics as well!!

About

I'm really excited about MasteringGenetics. With MasteringGenetics you will be able to access your reading quizzes, tutorials, activities and test your knowledge in preparation for exams and will also be able to **earn participation marks** towards your final grade. Some of you may have experienced similar web sites in Chemistry and Physics (MasteringChemistry and MasteringPhysics). This will allow for seamless interaction between Face-2-Face interactions and online activities that will support the Hybrid Learning philosophy in this course.

Second, the uOttawa campus is covered by a WIFI network and you'll be able to access your MasteringGenetics (and e-book) anywhere on campus. If you use the e-book version of the text book.....you will also be able to highlight and add notes as you read and whenever and wherever you access your e-book your highlights and notes are available.

Thirdly, the e-book provides features (annotations, highlighting, bookmarking, etc) that may be helpful to your studying.

Registering and creating you MasteringGenetics account

To register for **BIO2133 - Genetics 2018**:

1. Go to www.pearsonmylabandmastering.com.
2. Under Register, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's course ID: **montpetit38997**, and **Continue**.
5. Enter your existing Pearson account **username** and **password** to **Sign In**.

You have an account if you have ever used a Pearson MyLab & Mastering product, such as MyMathLab, MyITLab, MySpanishLab, MasteringBiology or MasteringPhysics.

→ If you don't have an account, select **Create** and complete the required fields.

6. Select an access option.

- Enter the access code that came with your textbook or was purchased separately from the bookstore.
- Buy access using a credit card or PayPal account.
- If available, get temporary access by selecting the link near the bottom of the page.

7. From the You're Done! page, select **Go To My Courses**.

8. On the My Courses page, select the course name **BIO2133 - Genetics 2018** to start your work.

To sign in later:

1. Go to www.pearsonmylabandmastering.com.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select the course name **BIO2133 - Genetics 2018** to start your work.

To upgrade temporary access to full access:

1. Go to www.pearsonmylabandmastering.com.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select **Upgrade access** for **BIO2133 - Genetics 2018**.
5. Enter an access code or buy access with a credit card or PayPal account.





Echo360 – Active Learning Platform (Required)

To fully participate during F2F meetings and earn participation marks you will need to bring an electronic device that allows you to be connected to the WI-FI (iPAD, laptop computer. I will take advantage of the Echo360 - ALP functionalities that will allow you to submit answers to questions I ask during lecture time. Through this platform, you will also be able to review lecture "podcasts" for studying purposes.

Registration to the system is completely free!

Invitation E-mails will be sent before the start of the term. (Keep an eye out for it in your uOttawa email account).

To register, you will receive an invitation to register to the course within the system by email (at your uOttawa email address). Simply follow the prompts to create and account and to start using the program. We will use class time during the first session to register for those who have not completed it and use it to get familiarized with its functionalities. If you have already used it in the past, following the invitations instructions will load the course into your Echo360 - ALP account.

What are the benefits of the system?

- Allows you to follow the lecture slides.
- Answer questions I ask during lectures to test your conceptual knowledge.
- Communicate with the professor during lecture (you can ask questions via the Q & A feature anonymously).
- Respond to questions other students ask during lecture.
- Signal SOS call outs on slides that are confusing to you.
- To watch the lecture podcasts to study. Every session will be filmed and made available to you.
- To watch other videos I may post.

Note: If you do not have a smartphone, laptop computer, iPAD, that is a device that allows you to be connected to the internet, please come talk to me. I have solutions to help you out!

(Images of Echo360-Active Learning Platform can be found in the online course syllabus)

(A video and PPT file on how to register can be found in the online course syllabus)

Course Policies

1- Attendance

The university requires that you attend at minimum of 80% of your classes and you are only allowed to be absent from five events (lectures, labs or quizzes). If either of these happens you won't be allowed into the final exam for the course. With the size of the course I can't take attendance in class but it will be taken in the labs. As an aside it may not be the wisest thing to skip class.

2- Policy on Echo360-ALP, Mastering Genetics, and the textbook:

These are required resources for this course. Participation in online and class activities is a requirement.

1. Echo360-ALP: It is your responsibility to register to the Echo360-ALP, to bring your device to class to participate, and to maintain your device in working order.
2. MasteringGenetics: It is your responsibility to register to MasteringGenetics and access the website to participate in the exercises to receive participation marks.

3- Absence from a midterm exam:

Missing a midterm exam without justification will result in receiving a mark of 0 for that midterm. If you aren't feeling well enough to write the exams or perform labs, don't enter the exam or lab. In regards to exams – once you have written an exam it stands no matter what reason you may have after the exam is over. If you are ill the day of the exam, it is essential to get a medical certificate the same day. Medical certificates retroactively covering the midterm date are not acceptable, unless exceptional circumstances are documented. A medical note from your care provider is required to justify an absence. You will have 5 business days following the exam to provide a copy of the note. We reserve the right to refuse all justification after this deadline. Work is not an acceptable justification to miss an exam.

If it's a personal family matter (death or major illness for example) a note from your parent explaining the absence will be required. In some cases, if you are representing the university in an official capacity at an out-of-town event, you may also miss a midterm. In this case a note from the coach or co-coordinator of the event is required.

Note: The professor or Marc Charette reserves the right to verify the authenticity of all justification letters. Your authorisation might be required to do so and refusing said authorisation will constitute an unjustified absence.





I try my best to be sure that the Saturday midterm doesn't conflict with other courses. Occasionally it does and if there is an exam or evaluation of your other course at the same time as the midterm I'll need a note from the professor teaching the course. Finally, for some, Saturday is a holy day and cannot write the exam: a note from your spiritual leader is required. In all cases, the notes explaining why you can't write the exam must be on official letterhead of the institution the writer represents.

The following equations will be used to calculate your final grade depending on the situation:

If you miss one or both midterms the weight of the evaluation will be transferred to the weight of the final exam.

Note 1: At times, midterms may fall close to dates (before or after) of the reading week or of long weekends. Prior to scheduling a personal trip (i.e. vacation), please consult exam dates. A pre-scheduled personal trip will not be considered as a valid reason for your absence.

Note 2: All notes explaining absences due to pre-scheduled activities (see above) must be returned to me at the very latest, 1 week before the scheduled midterm.

Note 3: There will be NO make-up exams in the case of an absence to a midterm.

4- Alternative midterm exam dates:

For those of you who have a legitimate reason for missing a midterm I will try and set up an alternative date for you to write the exam. In most cases this will be the Thursday before the midterm. The reason that I cannot guarantee an alternate date is that we often don't have a room available on the campus to use for the exam.

PLEASE NOTE: the alternate exam is only for those who can't write on the exam date because of the reasons outlined in the previous point and those that do write on the alternate date must provide a written explanation from a religious leader, coach or university representative for why you can't write on the Saturday. If you can't write on both the Saturday and the alternate date, but still have a valid reason for missing the midterm exam the calculation of your exam mark will be as described in the section on Absence from a midterm.

What happens to the group test? Those who written the alternative midterm will form groups (# at the discretion of the proctor) following the individual exam.

5- Absence from a final exam

In the case of the final exam, you must deal directly with the Undergraduate Science Office (Gendron 172). Unlike the midterms, they control all aspects of final exam scheduling. The only acceptable medical excuse must come from University of Ottawa Health Services and it must be submitted within a week of the exam. Whatever you do, if you aren't feeling well enough to write the exams don't enter the exam— once you have written an exam it stands no matter what reason you may have after the exam is over. Get yourself over to Health Services if you don't feel well enough to write before the exam starts! You will write a deferred exam in the following exam period.

6- Deferred exams

Deferred exams are available to students that have a medical excuse for their absence from the final exam. In this case your grade replaces **ONLY** the final exam component of the course. All the other grades from labs, assignments and midterm exams are still used in the calculation of your final grade after writing either a supplemental or deferred exam. There will be no group exams during deferred exams.

7- Cancelled final exams

It doesn't happen often but there's always the possibility of a cancelled final exam as a result of an unforeseen event. It's the office of the Vice-President Academic who makes that decision and it must be made before 8:00 am on the day of the exam. Check the Vice-President's web site for announcements. Be warned though the make-up date may be the very last day of the exam period which is kept clear for just that reason – judge your travel plans accordingly.

8- Reviewing exams

Midterms will be handed back. Instructions will be communicated on how we will proceed with exam reviews.

For final exams you will have the opportunity to review your graded exam once, and only once the final grades have been posted on Infoweb. As is the case every year, the month May is a busy time for attending professional meetings/ conferences. It is unlikely that I, Marc or the TAs will be available for exam reviews during this time. Following my return, I will schedule days to allow students to come in to review exams. Although grades become official after 6 weeks of being posted on Infoweb, grade changes can still be made subsequently (for a period up to 6 months after the grades have been posted).





In this course, TAs will be responsible for most of the grading. The TAs responsible for marking lecture exams may not be the same TAs responsible for labs. The TAs will be provided with marking rubrics and will attend Genetic Clinics to discuss marking issues.

9- Posting marks

While midterm grades will be posted in the grade book link in Blackboard Learn, rules do not permit me to post final exam grades until the final course grades have been submitted to the science undergraduate office and posted on Infoweb. Marks posted in Virtual Campus are considered “unofficial”. All official grades are kept and updated using Excel spreadsheets in my personal files. Changes to grades may not be updated immediately on Virtual Campus. All lab grades will be kept by the lab coordinator. Any inquiries related to lab grades, lab exams and assignments must be communicated to the lab coordinator.

10- Email

If you have a question you can use e-mail to ask it. I would ask that you place the course code in the subject line of your message. The subject line should include “BIO 2133, Section A/B/C, and a brief mention of the topic in the email (e.g. BIO 2133 – confused about gene linkage). The body of the email should have a clearly written message, and must include your name and student number.

11- Drop-In times

Consultations sessions are provided to offer opportunities to chat with myself and/or the course coordinator about the course content, genetic problems, labs, research, exams and grading, and your progression in the course. The consultation sessions will also be a good opportunity to meet in groups or individually to cover problematic aspects that may be common to a number of students. Ideally, I would like to meet as many of you as possible! If you wish to schedule an office appointment (e.g. cannot make the office hours, or would like to discuss in a more private setting) please send me an e-mail (colin.montpetit@uottawa.ca) to schedule a mutually convenient time to meet. All appointments will be conducted in my office (Gendron 274).

This year, we will organize “Genetic Lunches”. We will announce where myself and/or Marc will be having lunch and any and all are invited to join us. Look out for the announcements.

12- Lab policies

The lab component of the course is supervised by Dr. Gabriel Guillet. The lab has its own website that provide the information about the lab schedule, lab learning objectives, activities and related assessments. Students must follow laboratory policies outlined in the lab manual. All matters relating to the lab is to be directed to Dr. Guillet.

13- Student access services statement

Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the professor as soon as possible and/or follow the uOttawa regarding policies regarding access services. Because we are using 2-stage tests in this class there is extra administrative steps we need to take for those writing with SASS so that the students can take advantage of the 2-stage exams in terms with helping with scheduling the start and end times of the exam so that you can take advantage of the 2-stage exams.

Therefore, if you are or planning to write your exams with SASS, you **are required to give a notice of minimum 11 complete business days to Marc Charette**. Without such notice, we cannot guarantee that you will receive the required accommodations.

Please come discuss how we will make the arrangements so that you can take advantage of the 2 stage-exam.

14- Academic Integrity and code of conduct

Students are expected to engage fully and honestly and with professionalism in all course activities. Students are expected to be familiar with and follow the uOttawa policies regarding academic integrity.

15- No extra credit

In order to be fair and consistent with regards to the entire class, individual grades are not negotiable. We cannot provide “extra credit” assignments.





Annexe 1: Assessments FOR Learning

This course is designated as a Blended Learning course. This means that you will be expected to perform assigned readings and online activities at various times during the course to help you learn. In fact, you will have weekly online and in-class activities for which you will need to submit answers to questions I ask. For online activities, assignments will be due by **posted dates**...this way you will be able to work your way through the readings and related materials of the homework at your own pace and time during the week. Be aware that the online readings and assignments make part of the content that will be covered by the exams. The in-class work and online homework assignments should be taken very seriously as these will help you gauge your progress and receive feedback through the term, and provide you with many opportunities to practice your knowledge!

Indeed, your engagement in this course will play a significant role in your learning and success. For these reasons, I have placed a large value towards engagement (15% of the total grade). In this course, there will be three ways to accumulate these marks. All three are required to achieve the maximum amount of the mark. Participating in only one or two of the three ways will not earn you enough bucket points to achieve 100% of your mark. To do so, you will need to participate in all three!

Three ways to accumulate bucket marks

1. Echo360-ALP (student response system): A cloud based system that will allow you to submit answers to questions I pose in class using a smart device (iPAD, Smartphone, laptop computer).
2. MasteringGenetics: I will assign reading quizzes, interactive tutorials, and question/problem sets in MasteringGenetics on a weekly basis.
3. Blackboard Learn: I will also post questions to answer on a weekly basis on BBL. Activities will include self-reflection questions, surveys and problem sets.

Answering questions in class (e.g. Echo360-ALP) and online (MasteringGenetics and Blackboard Learn) will earn you participation marks. Each time you submit an answer to a question in class or online, you will earn a “bin point”. If you collect 80% of the total of “bin point” questions I pose, you will earn the full 15%. If you engage less than 80% of the time, this equation will be used to calculate you participation marks: $[(\# \text{ of bin pts} / \# \text{ of total bin points}) * 15] / 0.8$.

Notice, that I will not grade the correctness of your answers. Therefore, you should not fear getting incorrect answers. The point is for you to try and receive feedback on your progress in the course so that you can apply your learning on the exams.

Because this marking scheme takes into account potentially missed classes, forgotten online activities, and technical issues, doctor’s notes (or other notes) will not be accepted. See course policies for more information.

Note: if you do not own a device with which to submit questions during class time, you may obtain an iPad or laptop computer on loan from the library. In regards to cell phones, it is best to have a smartphone. If you have a cell phone but not a smartphone, the system will allow you to text in your answers (please see the information associated with Lecture Tools in the Course Components of the Course Guide).





Annexe 2: 2-Stage exams

The exams in this course are likely not like other exams you've written. Yes, you have to study for them. And yes, they have a time limit. But you might leave happier than you've left other exams and you'll have improved your mark and your understanding of the material. In short, there will be two-parts during exams 1) you will write the exam individually, 2) then collaborate with classmates to improve your performance on the exam.

But you might leave happier than you've left other exams and you'll have improved your mark and your understanding of the material.

Exams are based on the learning objectives/outcomes of the lecture and lab components of the course and will consist of multiple-choice, multiple true-false questions and short answer questions (that may include problem solving questions - e.g. discuss, predict, analysis, determine, hypothesize, etc.). What will be expected of you and the types of questions that will be on the exams will be largely representative of the types of questions and activities that you experiences during the online activities, face-2-face meetings and the lab sessions.

Phase 1 Exams are performed individually. 2/3 of the time allotted for the exam will be dedicated to complete Phase 1.

Phase 2 Following phase 1, individual exams will be collected, and students will be asked to form groups of 3-4 (of your own choosing). Groups will receive 1 exam and will require the group to come to consensus on their answers. In Phase 2, the exam will contain a repeat subset of questions (e.g. most challenging questions, conceptual questions), may also contain open-ended questions turned into MCQ questions and MCQ questions turned into short answer questions, and contain new questions altogether.

Why do this? I strongly believe that if I ask you to collaborate with classmates in your learning during class time that it's only fair that I ask you to collaborate during exams. This is also a part of my efforts to engage you in the "Community and Communication" learning objectives of the programs of the Faculty of Sciences. Research shows that this form of assessment results in improved student learning. I will show you the data in class. As well, you'll work on skills such as working as a group, coming to a consensus as a group, listening skills, discussion skills, the ability to articulate ideas. These are all transferable skills that are desired by employers and professional schools. And none of this comes at the risk of your mark being lowered! In our 2-stage exams, In this way, our exams mirror the collaborative exercises in class and the collaborative exercises in class will help you develop skills useful for the exam.

Students writing with Student Access Support Services: Please see me at the beginning of the term to discuss how this will happen for you.

How will your exam mark be calculated?

Phase 1	Phase 2	Total grade
Individual portion will be worth 85% of your grade for that test;	Group mark will be worth 15% of your grade for that test.	The best part? Your group mark can only improve your grade! If your group mark is lower than your individual mark, your individual mark will be your grade for that exam.

Video: Two-stage midterm exam

This video provides an example of a 1st year physics class doing a 2-stage midterm exam. Double click on the video to activate it **(video can be found in the online course syllabus)**.





Annexe 3: How you will help me evaluate the course!

Course evaluations are indispensable tools to help professors make informed decisions regarding learning and teaching in the classroom. I will employ a number of evaluation strategies that will give you opportunities to provide feedback in this course. The following course evaluation approaches will be employed. I take these very seriously and they help me make informed decisions about the teaching and learning approaches employed in this course.

Your honesty and genuine participation will be very much appreciated!

Different ways I will use to evaluate the course

Diagnostic tests
(pre and post-testing) These are tests to evaluate your conceptual understanding of genetic concepts. This will be given as a pre and post-test (Note: The overall mark on the tests will NOT count towards your final grade; you will however receive credits towards participation marks). This test will help me understand where the class sits in regards to conceptual understanding of genetic concepts and will help me adapt lectures and activities accordingly and to evaluate the effectiveness of the course and may occur on a few occasions in the term. The first one is likely to be on the first or second day of class. No studying is required for these.

Mid-term course evaluation For this evaluation, I will be asking you 2-3 questions relating to the course activities to help me see how the class is going. Someone from the Centre for University Teaching will also administer a questionnaire to ask you about the course.

End of year evaluation You will be asked to fill a mandated end of year course evaluation.

Annexe 4 – Community Service Learning

What is Community Service Learning (CSL)?

CSL is a form of experiential learning which allows students to contribute to their community by participating in professor-approved community service placements that are related to their course learning objectives. **This program is coordinated by the University of Ottawa's Michaëlle Jean Centre for Global and Community Engagement.** If you choose this option, you will have the opportunity to volunteer within a community-based organization whose scope of work revolves around gender, health, and/or (dis)ability.

This learning experience will replace the laboratory requirement of the course (you **will NOT** be required to attend and complete the lab activities). This option is **not available to all students** in the class. Space is limited (up to a maximum of 40 placements will be offered and this will be based on their availabilities) and processed on a first come first served based.

The Centre for Global and Community Engagement will give a presentation in class during the first week of classes to discuss this opportunity.

Selecting a CSL Placement:

- Students can choose from a list of professor-approved placements offered by the Centre on the Community Engagement (CE) Navigator website (<https://nav-cemc-cgce-sso.uottawa.ca/Community/Main.aspx>) ; or
- Students can propose their own placement to the professor and register it with the Centre.

CSL Placement Criteria:

- The placement must be with a non-profit organization or social enterprise.
- The placement must be related to the course themes or learning objectives and must be approved by the professor.
- The student must volunteer for a minimum of 20 hours.
- The student must be matched to the placement on the CE Navigator website (<https://nav-cemc-cgce-sso.uottawa.ca/Community/Main.aspx>).
- The student must log a minimum of 20 volunteer hours and have them approved by his or her supervisor.
- The supervisor must complete an evaluation of the student's performance.
- The student must submit a reflection paper of the placement to the professor by **April 11th, 2018, by 500pm.**

Further information and CSL resources (i.e. handbook for students) can be accessed on this address: <http://servingothers.uottawa.ca/volunteering/community-service-learning/csl-resources>





Learning Objectives for CSL:

- Situate theories discussed in class in relevant, “real-world” practical situations;
- Address the relation of service learning to current issues by placing the service activity and the associated student self-reflection at the center of the course;
- Enrich students’ sense of social awareness and responsibility by working directly with people in need.

Questions/Concerns:

Please contact Cathryne Milburn at the Michaëlle Jean Centre for Global and Community Engagement as soon as any questions or concerns regarding your placements arise:

Cathryne Lillian Milburn
Centre Michaëlle-Jean pour l'engagement mondial et communautaire
Michaëlle Jean Centre for Global and Community Engagement
Université d'Ottawa | University of Ottawa
Pavillon Tabaret Hall
550 Cumberland (304) Ottawa, ON, K1N 6N5
Tel: 613-562-5800 ext. 4285
cmilburn@uottawa.ca

An incomplete Community Service Learning (CSL) placement will result in the grade “Incomplete” for the course.

Distribution of Grades: (E-portfolio – 25%; Exams – 60%; Participation – 15%)

E-portfolio: If you choose this option, you will be required to maintain an **electronic portfolio (in Brightspace)** that demonstrates 3 reflections on your experiences (1 at the very beginning of the placement, and 1 at the start of each month, February and March). These will be written blog style, ~1000 words (2 pages) and will be shared with the students in the class). Each blog will be worth **5% each** of your final mark (**total 15%**).

Final report: You will also be required to write up a report about your community work experience. This work will be worth **10%** of your final grade. Using the key concepts learned in class, the report will include:

Overview of the CSL experience: In this section, you will give an overview of the activities and tasks you have completed throughout your CSL experience. In addition, you will tell the reader about the mission and objectives of the organization within which you volunteered. In other words, you will describe the rationale that informs the services and/or programs offered by the organization and indicate the individuals whom

the services and/or programs are tailored to. You could certainly write about other ideas/thoughts/experiences you deem important to include in this section.

Critical analysis of the CSL experience: In this section, you will perform an evaluation of your CSL experience. Some examples of the components of your evaluation could be: (a) a discussion of the positive and negative events that occurred during your community-based experience, (b) an analysis of the level of rapport or involvement with women, men, and/or other persons (if applicable), (c) a constructive evaluation of the strengths and weaknesses of the program(s) of the organization, (d) a suggestion of what could be done differently to improve the well-being of individuals for whom the program(s) are designed.

Lessons learned during the CSL experience: In this section, you will discuss the lessons learned during your CSL experience. Furthermore, you will provide an explanation of how the community-based experience you were engaged in was helpful to develop a better understanding of some of the theoretical concepts related to gender, health, and/or (dis)ability seen in class and in your readings.

Your report may be written in English or French. You will include a cover page with the title of the course, your name, the name of the professor, the title of your proposal, and the date of submission. You will also include a bibliography or list of references at the end of your paper. Your list of references should include **ONLY** the references for authors or works **CITED** in your paper. You are required to offer a scholarly reflection of your community volunteering experience. This means that you must use scholarly language to express your ideas and that your paper must draw from refereed articles (i.e., articles published in a scholarly journal where there is a review board to evaluate articles prior to publishing). A minimum of 5 refereed articles is required, but any other source may be used in addition to the 5 refereed articles. Your paper is to be a minimum of 6 pages and a maximum of 8 pages in length, 12 point font, double-spaced with 1 inch margins using APA style referencing. Your essay and references must be formatted according to the privileged APA style. The *Publication Manual of the American Psychological Association* is available at the library.

You will submit a paper version of the term project in class **April 11th** by **500pm**. No electronic copies will be accepted.

Exams: In this option, the weighting of your exams in the course will be 60% (instead of 65%).

Participation marks: Participation to class activities and online activities can earn you up to 15% of your final mark. See Annexe 1 for further details.

