

UNIVERSITY OF CALGARY  
DEPARTMENT OF BIOLOGICAL SCIENCES  
COURSE OUTLINE

1. Course: **Biology 311 - Principles of Genetics**

Lecture Sections: L01 MWR 10:00-11:45 ST127 Spring 2016  
Instructor(s): Dr. Cynthia Yip cyip@ucalgary.ca  
Lab Coordinator: Dr. Isabelle Barrette-Ng BI 430A 220-6240 mibarret@ucalgary.ca

D2L Course Site— BIOL 311 L01 - (Spring 2016) - Principles of Genetics (P2016BIOL311L01)

Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITES:** Any two of Biology 231, 233, 241 and 243.

3. **GRADING:** The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

<b>Assignments</b>	<b>7%</b>
<b>Midterm Exam</b>	<b>25%</b>
<b>Final Exam</b>	<b>35%</b>
<b>Laboratory</b>	<b>33%</b>

There will be a 3 hour final exam scheduled by the Registrar's office.

Each piece of work (assignment, laboratory report, midterm test or final examination) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

4. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in section 3.6: <http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html>. It is the student's responsibility to familiarize himself/herself with these regulations. See also <http://www.ucalgary.ca/pubs/calendar/current/e-3.html>.

5. Dates and times of MT Exam(s):

**Midterm**      **Wednesday, June 8, 2016**      **IN CLASS 10:00AM-11:45AM**      **Location: ST127**

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **EXAMINATION POLICY:** No electronic or written aids (eg. cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams. Non-programmable calculators will be permitted to answer quantitative questions on exams, if applicable, and permission to do this will be clearly indicated on the examination paper. Students should also read the Calendar, Section G, on Examinations: <http://www.ucalgary.ca/pubs/calendar/current/g.html>

7. **WRITING ACROSS THE CURRICULUM:** In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports. See also <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

8. **STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS.** See also <http://www.ucalgary.ca/pubs/calendar/current/e-5.html>.

## 9. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at [http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf).
- Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email [addy@ucalgary.ca](mailto:addy@ucalgary.ca) or phone 403 220-3140.
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOI/PA). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
SU Faculty Rep. Phone: 403 220-3913 Email: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca) and [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca);  
Student Ombuds Office: 403 220-6420 Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca); <http://ucalgary.ca/provost/students/ombuds>
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

Department Approval \_\_\_\_\_ **ORIGINAL SIGNED** \_\_\_\_\_ Date \_\_\_\_\_

UNIVERSITY OF CALGARY  
DEPARTMENT OF BIOLOGICAL SCIENCES  
COURSE OUTLINE  
**BIOLOGY 311**  
PRINCIPLES OF GENETICS

TERM:	Spring 2016	SECTION: L01
PREREQUISITE(S):	Any two of Biology 231, 233, 241 and 243	
	A student may not register in a course unless he/she has a grade of at least C- in each prerequisite course.	
COURSE INSTRUCTOR:	Dr. Cynthia Yip	cyip@ucalgary.ca
LAB COORDINATOR:	Dr. Isabelle Barrette-Ng	BI 430A      220-6240      mibarret@ucalgary.ca
LECTURES:	L01      M W R	10:00-11:45      ST 127
LAB	B01      TR	13 :00-15 :50      EEEL 303
	B02      TR	13 :00-15 :50      EEEL 309

All scheduled laboratories will begin on Tuesday, May 10, 2016. Students need to read the introduction to the laboratory manual and Lab #1 prior to attending the first lab and be comfortable with all terms used.

TEXT: Required:      An Introduction to Genetic Analysis. 11<sup>th</sup> ed., Griffiths, Wessler, Carroll, Doebley (10th ed. is also acceptable)

Solutions Megamanual for An Introduction to Genetic Analysis, 11th Edition, Fixsen, W.D., Lavett, D.K., W.H. Freeman. (10th ed. is also acceptable)

Carolina Drosophila Manual, Flagg, R.O., 5<sup>th</sup> Edition, Carolina Biological Supply Company

Biology 311 Laboratory Manual, Spring 2016 (To be downloaded from D2L)

MARK DISTRIBUTION:      A. Composition of Final Grade

Assignments	7%
Midterm exam (1.8hrs)*	25%
Final exam (3hrs)**	35%
Laboratory***	33%

B. Final Exam

There will be a cumulative final examination emphasizing material covered since the midterm. This 3 hour exam will be scheduled by the Registrar's Office between the 2<sup>nd</sup> and 4<sup>th</sup> of July, 2016, inclusive.

EXPECTED STUDY TIME:      At least two hours per one-hour lecture plus the required laboratory

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\*Dates:      Midterm      Wednesday, June 8, 2016      IN CLASS 10:00AM -11:45PM      Location: ST127

\*\*      This will be a comprehensive final exam covering the entire course, but with emphasis on the material covered after the midterm exam.

\*\*\*      Various lab components have predetermined weighting to a total of 33% as specified in the Lab Manual.

TENTATIVE LECTURE SCHEDULE SPRING 2016

<b>Date(s)</b>	<b>Topic(s)</b>	<b>Chapter(s)</b>
May 9	Intro to course, autosomal and sex-linked inheritance, pedigree analysis	2
May 11	Independent assortment of genes	–
May 12	Linkage, recombination, genetic mapping, chi-square, multiple crossovers	3
May 16		
May 18	Gene interactions	4
May 19	Bacterial and viral genetics	6
<b>May 23</b>	<b>No Lecture – Victoria Day</b>	–
May 25	Bacterial and viral genetics	5
<b>May 26 – June 3</b>	<b>No Lectures – Congress</b>	–
June 6	DNA structure and replication, genetic technologies	Parts of 1, 7, 10, 14
<b>June 8</b>	<b>MIDTERM – In class</b>	–
June 9	Genetic variability and DNA polymorphisms	16, 18
June 13	Detection of DNA polymorphisms and phenotypic change	10, 14, 16, 18
June 15	Regulation of gene expression in prokaryotes	11
June 16	Regulation of gene expression in eukaryotes	12
June 20	Genetic engineering and DNA manipulation	10
June 22	Epigenetics and Developmental genetics	12, 13
June 23		
June 27	Mutations and Genetics of Cancer	16, 17
June 29	Transposons	15
June 30	Review	–
<b>July 2 – 4</b>	<b>FINAL EXAM scheduled by the registrar</b>	–

Conversion between course percentage and course letter grade for BIOL 311:

<b>Letter Grade</b>	<b>Percentage Cut Off</b>
A+	95%
A	90%
A-	85%
B+	80%
B	76%
B-	72%
C+	68%
C	64%
C-	60%
D+	55%
D	50%
F	<50%