UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
**COURSE OUTLINE**

1. Course: BIOLOGY 331 – INTRODUCTION TO CELLULAR AND MOLECULAR BIOLOGY

| | | | | | |
|---|---|---|---|---|---|
| Lecture Sections: | L01 | MWF | ST 127 | 10:30-12:20 | SUMMER 2014 |
| **Instructor(s):** | Dr. T. Don Nguyen | | nguyendt@ucalgary.ca | BI 387 | |
| | Dr. Lars Petersen | | lfpeters@ucalgary.ca | BI 442 | |
| Tutorial: | T01/02 | TR | ST 059 | 09:00/10:00 | |
| Teaching Assistant: | Gareth Jones | | gmjones@ucalgary.ca | | |

D2L course website: https://d2l.ucalgary.ca/d2l/home

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

2. **PREREQUISITES:** Biology 311

3. **GRADING**: The University policy on grading and related matters is described in "Academic Regulations, sections F.1 and F.2" of the online University Calendar (**http://www.ucalgary.ca/pubs/calendar/current/f-1.html** and **http://www.ucalgary.ca/pubs/calendar/current/f-2.html**) In determining the overall grade in the course the following weights will be used:

| | |
|---|---|
| Midterm Exam | 35% total |
| Tutorial term project | 20% total |
| Tutorial participation | 10% total |
| Final Exam scheduled by the Registrar. | 35% total |

"Each piece of work (assignment, 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 class exercises held outside of class hours: NIL

**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.

**Department Approval** _____ **Date** 2014-06-27

B331 CO S14; 01/04/2014 13:27

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. "In this course, the quality of the student's writing in laboratory reports will 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.** Students are expected to be familiar with http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html of the on-line calendar. 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 K. Student Misconduct (http://www.ucalgary.ca/pubs/calendar/current/k.html) 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 at http://www.ucalgary.ca/emergencyplan/assemblypoints.**

(c) **ACADEMIC ACCOMMODATION POLICY.** Students with documentable disabilities are referred to the following links:
Calendar entry on students with disabilities: **http://www.ucalgary.ca/pubs/calendar/current/b-1.html**
Student Accessibility Services: www.ucalgary.ca/access

(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 (FOIPP). 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**: 220-3911 **Email:** suvpaca@ucagary.ca.
SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca Website
**http://www.su.ucalgary.ca/home/contact.html**.
Student Ombudsman: **http://www.su.ucalgary.ca/services/student-services/student-rights.html**

(g) **INTERNET and ELECTRONIC COMMUNICATION DEVICE Information.** You can assume that in all classes that you attend, **your cell phone should be turned off.** 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.

UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

# BIOLOGY 331

## INTRODUCTION TO CELL AND MOLECULAR BIOLOGY

TERM: Summer 2014 SECTION NO: 60

PREREQUISITE: Biology 311
A student may not register in a course unless he has a grade of at least C- in each prerequisite course.

LECTURER(S): Dr. T. Don Nguyen nguyendt@ucalgary.ca
Dr. Lars Petersen lfpeters@ucalgary.ca

| | | | | |
|---|---|---|---|---|
| LECTURES: | L01 | MWF | 10:00-11:50 | ST 127 |
| Tutorial : | T01/02 | TR | 09:00/10:00 | ST 059 |

TEXTS: Required: Cell and Molecular Biology, Concepts and Experiments. Gerald Karp, John Wiley & Sons Inc., Toronto. 7th Edition, 2013.

RESERVE SERVICES: None

MARK DISTRIBUTION:

A. Composition of Final Grade

| | |
|---|---|
| Midterm Exam | 35% total |
| Tutorial term project | 20% total |
| Tutorial participation | 10% total |
| Final Exam scheduled by the Registrar. | 35% total |

B. Final Exam

There will be a Final Examination scheduled by the Registrar's Office (sometime Aug 15-17).

**Grade Breakdown**

A+ --> 100 to 91%
A --> 90 to 85%
A$^-$ --> 84 to 79%
B$^+$ --> 78 to 75%
B --> 74 to 70%
B$^-$ --> 69 to 64%
C$^+$ --> 63 to 59%
C --> 58 to 55%
C$^-$ --> 54 to 50%
D+ --> 49 to 45%
D --> 44 to 40%
F --> 39 to 0%

**Tentative Lecture Schedule (Monday, Wednesday, Fridays)**

| Date | Topics | Text References | Assignment Deadlines and Scheduled Exams |
|---|---|---|---|
| July 2 | Plasma Membrane I (membrane lipids and proteins) | Chap 4; p120-146 | |
| July 4 | Plasma Membrane II (membrane transport, potential, & nerve impulses) | Chap 4; p147-177 | |
| July 7 | Endomembrane system I (ER & Golgi) | Chap 8; 270-318 | |
| July 9 | Mitochondria & Chloroplasts | Chap 5&6; 178-234 | |
| July 11 | Cytoskeleton I (Microtubules) | Chap 9; 330-353 | |
| July 14 | Cytoskeleton II (Microfilaments) | Chap 9; 356-384 | |
| July 16 | Cytoskeleton III (Intermediate filaments) | Chap 9; 354-356 | |
| July 18 | Nucleus, DNA, and the Genome | Chap 10; 388-417, Chap 12; 483-542, Chap 13; 545-571 | |
| July 21 | **In Class 2 hr Exam** | | |
| July 23 | Ribosome and Protein Synthesis | Chap 11; 426-479 | |
| July 25 | Cell Cycle Regulation | Chap 14; 572-615 | |
| July 28 | ECM and Cell Interactions I | Chap 7; 235-256 | |
| July 30 | ECM and Cell Interactions II | Chap 7; 257-269 | |
| Aug. 1 | Cell Signalling I | | |
| Aug. 4 | **Civic Holiday – No lectures** | | |
| Aug. 6 | Cell Signalling II | Chap 15; 617-662 | |
| Aug. 8 | Cancer | Chap 15; 617-662 | |
| Aug. 11 | Molecular/Cell Biology Techniques | Chap 16; 664-697 | |
| Aug. 13 | Review Lecture (if needed) | | |

**Tutorial Lectures will begin on Tuesday, July 8, 2014 and there will be no tutorial on July 22, 2013.**
**The Final Exam will be scheduled sometime during Aug 15-17.**

**Tentative Tutorial Schedule (July/ August Tuesdays and Thursdays)**

| Date | Topic | Important Deadlines |
|---|---|---|
| July 8 | Membrane fluidity | |
| July 10 | Protein Secretion | |
| July 15 | Mitochondria & Chloroplasts | |
| July 17 | Cytoskeleton & Microtubules | |
| July 24 | DNA techniques and the Genome | |
| July 29 | Gene Expression and Cellular Function | |
| July 31 | Cell Growth and Culturing | |
| Aug. 5 | Microscopy | |
| Aug. 7 | Cell Cycle | |
| Aug. 12 | Cellular protein function | |

***All material covered in tutorials will be included on exams.**