



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. **Course: ZOOLOGY 463 – ANIMAL PHYSIOLOGY II**

Lecture Section: L01 MWF 10:00-10:50 ES 162 WINTER 2016

Instructors:	Dr. H.R. Habibi	BI 276	220-5270	habibi@ucalgary.ca
	Dr. D.A. Syme	BI 289	220-5281	syme@ucalgary.ca
	Dr. C. Flynn	BI 238B	220-5055	cflynn@ucalgary.ca
	Dr. M. Vijayan	BI 488	220-3094	mmvijaya@ucalgary.ca

D2L course name: **ZOOL 463 L01 - (Winter 2016) - Animal Physiology II**
Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITE(S):** Zoology 461

ANTIREQUISITE(S): Credit for both Zoology 463 and any of Biology 305, Medical Science 403, 604, Zoology 269, Kinesiology 259, 260 or 323 will not be allowed.

See section 3.5.C in the Faculty of Science section of the online Calendar
(<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)

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:

Midterm Lecture Exam	30 %
Laboratory Reports	30 %
Final Exam	40 %

(There will be a 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. Students must achieve a passing grade (D minimum) on the portion of the course comprised of the midterm and final exam in order to qualify for a passing grade overall.

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. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.3 of the University Calendar

5. **Scheduled out-of-class activities:** Dates and times of approved class activities held outside of class hours.

MIDTERM EXAM (Lectures 1-19) March 7, 2016 5:30-7:00pm ICT 102

PLEASE NOTE THAT THERE WILL NOT BE A DEFERRED MID-TERM EXAMINATION.

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. **Course Materials:** TEXT: Recommended: GUYTON & Hall, Textbook of Medical Physiology, W.B. Saunders Co., Toronto. 13th Ed. 2015, and Animal Physiology. Hill, Wyse, Anderson. Sinauer Associates, Inc., Mass., 3rd edition.

7. **Examination Policy:** Students should also read the Calendar, [Section G](#), on Examinations.
8. **Writing across the curriculum statement:** e.g. “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 [Section E.2](#) of the University Calendar.
9. **Human studies statement:** indicating whether students in the course may be expected to participate as subjects or researchers. See also [Section E.5](#) of the University Calendar.

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>.

10. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **Misconduct:** 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.

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 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 (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: 403 220-3911 Email: suvpaca@ucalgary.ca
SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
Student Ombuds Office: 403 220-6420 Email: 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) **U.S.R.I.:** 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). Your responses make a difference - please participate in USRI Surveys.

Department Approval _____ ORIGINAL SIGNED _____ Date _____

Associate Dean’s Approval for
out of regular class-time activity: _____ ORIGINAL SIGNED _____ Date: _____
Z463 co W16; 1/18/2016 1:04 PM

ZOOLOGY 463

TERM: Winter 2016 SECTION: 01

PREREQUISITE(S): Zoology 461

ANTIREQUISITE(S): Credit for both Zoology 463 and any of Biology 305, Medical Science 404, 502, 604 or Zoology 269, 363 will not be allowed.

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

COURSE COORDINATOR: Dr. H.R. Habibi

LAB COORDINATOR: Dr. C. Flynn

INSTRUCTORS:	Dr. H.R. Habibi	BI 276	220-5270
	Dr. D.A. Syme	BI 289	220-5281
	Dr. C. Flynn	BI 238B	220-5055
	Dr. M. Vijayan	BI 488	220-3094

LECTURES: MWF 10:00 ICT 102

LABS: T 0900/1300 BI 227
R 0900/1300/1700 BI 227

TEXT Recommended: GUYTON & Hall, Textbook of Medical Physiology, W.B. Saunders Co., Toronto. 13th Ed. 2015, and Animal Physiology. Hill, Wyse, Anderson. Sinauer Associates, Inc., Mass., 3rd edition.

RESERVE READING ROOM: See attached page

MARK DISTRIBUTION: A. Composition of Final Grade

Midterm Exam	30%	ICT 102
Laboratory Reports	30%	
Final Exam	40%	

B. Final Exam (Lectures)

There will be a final examination scheduled by the Registrar's Office.
The final exam will include materials from both the lectures and laboratories.

Components of the Course for Which a Passing Grade is Essential

Students must achieve a passing grade (D minimum) on the portion of the course comprised of the midterm and final exam in order to qualify for a passing grade overall.

Grade scale:

87 A	75 B	62 C	50 D
83 A-	71 B-	58 C-	50< F
79 B+	66 C+	54 D+	

Students will be expected to consult the library extensively when preparing laboratory reports or to supplement aspects of the lectures not adequately covered in the text. The library has been asked to place the books on the attached list of reserve books in the undergraduate reading room reserve collection. This is done purely for the convenience of the student and is not in any way meant to restrict the student to gathering necessary information from these books rather than any other appropriate ones.

Students will be expected to supply dissecting sets and graph paper. Laboratory coats or aprons are recommended. Laboratory reports are due 1 week following completion of the laboratory. If presented late they will be graded only if accompanied by a medical excuse. A Laboratory Examination will be included in the final examination scheduled by the registrar during the April examination period.

ZOOLOGY 463 PHYSIOLOGY II
LECTURE OUTLINE - WINTER 2016

<u>General topic</u>	<u>No. of Lectures</u>	<u>Instructor</u>
Respiration	6	Dr. D. Syme
Circulation	7	Dr. D. Syme
Excretion	6	Dr. C. Flynn
Body Fluids and Hemostasis	3	Dr. H.R. Habibi
Body Defense System	3	Dr. H.R. Habibi
Gastrointestinal Physiology	6	Dr. M. Vijayan
Thermoregulation	6	Dr. H.R. Habibi

LECTURE SCHEDULE - WINTER 2016

Respiration

Jan 11 – 22

(D. Syme, 6 lectures)

Anatomy and lung/gill mechanics
 Diffusion and gas exchange
 O₂ and CO₂ transport
 Acid/base balance
 Regulation of breathing
 Respiratory stress

Circulation

Jan 25 – Feb 8

(D. Syme, 7 lectures)

Overview of cardiovascular function
 Comparative anatomy/function of the heart I
 Comparative anatomy/function of the heart II
 Cardiac muscle –structure and electrical properties
 The heart – electrical and mechanical properties
 Blood flow/pressure regulation
 Comparative cardiovascular patho/physiology

Renal Physiology

Feb 10 -29

(C. Flynn, 6 lectures)

Principles of osmotic and ionic regulation
 Evolution of the mechanisms of salt and water balance

Feb 13-20

READING DAYS, NO LECTURES or LABS

Function of the mammalian nephron-I
 Function of the mammalian nephron-II
 Function of the mammalian nephron-III
 Physiological compensation to environmental changes-I
 Physiological compensation to environmental changes-II

Body Fluids & Hemostasis

Mar 2 - 7

(H Habibi, 3 lectures)

Body fluids and compartments
 Blood cells and Hemostasis
 Blood clotting

Mar 7

Mid-Term Exam (lectures 1-19)

ICT 102

Body Defense System

Mar 9 -14

(H Habibi, 3 lectures)

Body fluids and compartments
 Blood cells and Hemostasis
 Hanges Blood clotting

Gastrointestinal Physiology

Mar 16 - 30

(M. Vijayan, 6 Lectures)

Gastrointestinal control systems
 Gastric motility
 Gastric secretion
 Liver and Biliary system
 Intestinal digestion & absorption I
 Intestinal digestion & absorption II

Thermoregulation

April 1 – 13

(H Habibi, 6 lectures)

Body temperature and metabolism
 Heat exchange mechanisms
 Thermoregulation and thermo receptors
 Hypothermia, hyperthermia and pyrexia
 Heterothermy and Hibernation
 Thermoregulation in Poikilotherms

LAB SCHEDULE - WINTER 2016

<u>Date</u>			<u>Exercise</u>
Jan.	19 – 26	1	Mechanics and Control of Ventilation
Feb.	2 – 9	2	Blood Pressure, Electrocardiography and Circulation
Feb.	15 – 19		NO LAB (Reading Week)
Feb.	23 – Mar 1	3	Renal function
Mar.	8 – 15	4	Hematology
Mar.	22 – 29	5	Immunology
Apr.	5 – 12	6	Acid-Base Balance