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 2015

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 395	220-3094	mmvijaya@ucalgary.ca

D2L course name: **ZOOL 463 L01 - (Winter 2014) - 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 35, 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.6 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 1-18) March 5, 5:30-7:00pm KNB 126, KNB 132 and SB 103

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. 11th Ed. 2006, 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) Academic Accommodation Policy: Students with documentable disabilities are referred to the following links: Students with Disabilities: http://www.ucalgary.ca/pubs/calendar/current/b-1.html B.1 and Student Accessibility Services: http://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; Student Ombudsman

(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 W15; 1/6/2015 11:25 AM

ZOOLOGY 463

TERM: Winter 2015 SECTION: 01

PREREQUISITE(S): Zoology 461

ANTIREQUISITE(S): Credit for both Zoology 463 and any of 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 395	220-3094

LECTURES:	MWF	10:00	ES 162
LABS:	T	0900/1300	BI 222
	R	0900/1300/1700	BI 222

TEXT Recommended: GUYTON & Hall, Textbook of Medical Physiology, W.B. Saunders Co., Toronto. 11th Ed. 2006, 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%
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:

>86	A	>74	B	>62	C	>50	D
>82	A-	>70	B-	>58	C-	<50	F
>78	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 2015

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

LECTURE SCHEDULE - WINTER 2015

Body Fluids & Hemostasis (H Habibi, 3 lectures)
Jan 12 - 16
- Body fluids and compartments
- Blood cells and Hemostasis
- Blood clotting

Body Defense System (H Habibi, 3 lectures)
Jan 19 - 23
- Body fluids and compartments
- Blood cells and Hemostasis
- Hanges Blood clotting

Thermoregulation (H Habibi, 6 lectures)
Jan 26 – Feb 6
- Body temperature and metabolism
- Heat exchange mechanisms
- Thermoregulation and thermo receptors
- Hypothermia, hyperthermia and pyrexia
- Heterothermy and Hibernation
- Thermoregulation in Poikilotherms

Respiration (D. Syme, 6 lectures)
Feb 9 - 27
- Anatomy and lung/gill mechanics
- Diffusion and gas exchange
- O2 and CO2 transport

Feb 16-23 **READING DAYS, NO LECTURES or LABS**

- Acid/base balance
- Regulation of breathing
- Respiratory stress

March 2-5 (TBD) **Mid-Term Exam**

Circulation (D. Syme, 7 lectures)
Mar 2 - 16
- 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 (C. Flynn, 6 lectures)
Mar 18- 30
- Principles of osmotic and ionic regulation
- Evolution of the mechanisms of salt and water balance
- 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

Gastrointestinal Physiology (M. Vijayane**,** 6 Lectures)

April 1 – 13	Gastrointestinal control systems Gastric motility Gastric secretion Liver and Biliary system Intestinal digestion & absorption I Intestinal digestion & absorption II

LAB SCHEDULE - WINTER 2015

Date			Exercise
Jan.	20 – 27	1	Hematology
Feb.	3 – 10	2	Immunology
Feb.	16 – 20		NO LAB (Reading Week)
Feb.	24 – Mar 3	3	Mechanics and Control of Ventilation
Mar.	10 – 17	4	Blood Pressure, Electrocardiography and Circulation
Mar.	24 – 31	5	Renal function
Apr.	7 – 14	6	Acid-Base Balance