University of Manitoba
BIOL2380/ AGRI2180/ENVR2180
Introduction to Toxicology

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COURSE DETAILS

Course Title & Number:	BIOL2380 Introduction to Toxicology aka ENVR2180 Introduction to Toxicology aka AGRI2180 Introduction to Toxicology
Number of Credit Hours:	3 Credit Hours
Class Times & Days of Week:	TR 8:30 AM to 9:40 AM
Lecture location:	EITC E3
Pre-Requisites:	(Undergraduate level BIOL 1030 Minimum Grade of C or Undergraduate level BIOL 1031 Minimum Grade of C or BIOL 1030 - PQ Substitution 060 or Undergraduate level 071 125 Minimum Grade of C) and (Undergraduate level CHEM 1310 Minimum Grade of C or Undergraduate level CHEM 1311 Minimum Grade of C or Undergraduate level 002 131 Minimum Grade of C or CHEM 1310 - PQ Substitution 060 or Undergraduate level CHEM 1320 Minimum Grade of C or Undergraduate level 002 132 Minimum Grade of C or CHEM 1320 - PQ Substitution 060)

Instructor Contact Information

Instructor(s) Name:	Jake Stout, PhD
Preferred Form of Address:	Just call me Jake. Or whatever you're cool with.
Office Location:	Bioscience 404
Office Hours or Availability:	I have an open door policy: if my door is open and I'm not busy I'll answer your questions should you pop by for a visit. Alternatively, you can (and should!) make appointment by email. (The Responsibilities of Academic Staff in Regards to Students – ROASS- requires that instructors/professors must be available to students for consultation out of class or laboratory hours).
Office Phone No.	(204) 424-8493. Don't even bother calling, use email!
Email:	jake.stout@umanitoba.ca Informal email is cool with me.
Contact:	You can email me any time, and I'll try to get back to you within 24 hours. Don't bother calling me… I rarely check my voicemail. When emailing please indicate in your email name, student number and this course so that I know who I'm talking to!

Course Description

A survey of general principles underlying the effects of toxic substances on biological systems, including consideration of the history, scope and applications of toxicology, the mechanisms of toxic action, and some major types of toxicants.

Using Copyrighted Material

Please respect copyright. We will use copyrighted content in this course. I have ensured that the content I use is appropriately acknowledged and is copied in accordance with copyright laws and University guidelines. Copyrighted works, including those created by me, are made available for private study and research and must not be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn), or any website, unless an exception to the *Copyright Act* applies or written permission has been confirmed. For more information, see the University's Copyright Office website at http://umanitoba.ca/copyright/ or contact um_copyright@umanitoba.ca.

Recording Class Lectures

The student is expected to take notes during lectures, but no audio or video recording of the meetings is allowed in any format, openly or surreptitiously, in whole or in part without permission of Dr. Jake Stout. Course materials, provided online, are for the participant's private study and research.

Legalize stuff: Jake Stout and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission Jake Stout. Course materials (both paper and digital) are for the participant's private study and research.

Textbook, Readings, Materials

There are no required textbooks for this course.
Supplementary readings – none, unless I find something cool over the semester.

Course Technology

It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use all technology in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Disability Services. Student should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) online and offline "gaming" during scheduled class time. If student is on call (emergency) the student should switch his/her cell phone on vibrate mode and leave the classroom before using it. (©S Kondrashov. Used with permission)

Class Communication

The University requires all students to activate an official University email account. For full details of the Electronic Communication with Students please visit:
http://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2014_06_05.pdf

Please note that all communication between myself and you as a student must comply with the electronic communication with student policy (http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html). You are required to obtain and use your U of M email account for all communication between yourself and the university.

Expectations: I Expect You To

- Show up to class… the concepts of our lectures build on each other throughout the course, and it's imperative to attend all classes to build up your mental constructs of the material. However, you're an adult and attendance isn't mandatory (i.e. I won't be taking attendance in class). ALSO: We will cover material in class that is *not* going to be in the textbook (new and cool stuff!!), so you should be there to learn it!!

- ASK QUESTIONS. The whole goal of science is to ask really cool questions, and asking questions if you're not completely clear on the material is completely normal. You can ask questions in class, but if you're uncomfortable doing this send me an email! If it's a cool question, I may cover it before lecture in the next class. If enough people indicate that they didn't understand a concept, I obviously didn't teach that section well and will go over it again.

- Seek help if you're experiencing difficulty, the earlier the better!

- You may use cellphones and laptops in lecture *only if you're following along with the lecture slides*. Doing other things on your electronic devices is very distracting you your learning *and* to those around you. Studies have shown that a student using their laptop distracts those around them to the point that their final grade is reduced. Not cool.

- Be respectful to me and your peers.

Expectations: You Can Expect Me To

- Be available after class for discussion
- Have an 'open door' policy where you can come see me to ask questions, or you can make an appointment by booking a time via email
- Have lecture slides posted to UMLearn the night before lecture
- Answer your emails within 48 hours (although I usually do so a lot sooner than that). If you haven't heard back from me in 48 hours, send me another email to remind me!!
- Provide you with test grades within one week
- Try to be somewhat entertaining ☺

Students Accessibility Services

Student Accessibility Services
If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.
Student Accessibility Services http://umanitoba.ca/student/saa/accessibility/
520 University Centre
204 474 7423
Student_accessibility@umanitoba.ca

Class Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the learning needs of the students but such changes are subject to Section 2.8 of the – ROASS-Procedure).

The course is roughly divided into thirds. The first third leading up to midterm one covers the 'basics' of toxicology: how we detect toxicants and determine how toxicants effect biological systems. In the second third of the course we go over specific examples of toxicants. The final third covers environtmental toxicology, and will involve getting a lot of guest lecturers in because I don't know much about this topic!

Lecture	Date	Topic
1	Jan 7	Introduction to toxicology
2	Jan 9	Detection of toxicants
3	Jan 14	Dose response curves & bioassays
4	Jan 16	Dose response curves & bioassays II
5	Jan 21	Factors affecting toxicity
6	Jan 23	Absorption, distribution, and toxicokenetics
7	Jan 28	Biotransformation and elimination of toxicants
8	Jan 30	Cellular and tissue targets of toxicity
	Feb 4	**Midterm 1 – Covers lectures 1 to 8**

9	Feb 6	Metals
10	Feb 11	Food-borne toxicants
11	Feb 13	Particulates and air pollution
	Feb 18	Winter break woooo!!!
	Feb 20	Winter break woooo!!!
12	Feb 25	Solvents/hydrocarbons and (perhaps) drugs of abuse
13	Feb 27	Persistent environmental contaminants
14	Mar 3	Pesticides
15	Mar 5	Radiation
16	Mar 10	Plant and animal toxins
17	Mar 12	Bioaccumulation and biomagnification
	Mar 17	**Midterm 2 – covers lectures 10 to 16**
18	Mar 19	Guest lecture
19	Mar 24	Guest lecture
20	Mar 26	Guest lecture
21	Mar 31	Guest lecture
22	Apr 2	Guest lecture
23	Apr 7	Toxicogenomics

Course Evaluation Methods

TESTS/EXAMS:
a. There will be two non-cumulative midterm tests, which will be entirely multiple choice questions. The first two tests will be 50 minutes long and will be held in the classroom during the normal class schedule. The final exam, which will be held in a large exam hall, will be comprised of two parts – one part will cover material specific to the last third of the lectures, and the other part will be comprised of questions that cover content from the entire course.
b. You must write the final exam to pass the course. The final is a mixture of multiple choice questions and short-answer questions.
c. There will be no make-up exams for tests 1 and 2. If you miss either test 1 or 2, you automatically qualify for grading options 2 or 3. If you miss tests 1 and 2, then you qualify only for grading option 3.
d. No doctor's note/explanation is required if you miss tests 1 or 2. You are adults and can choose your best option, and I don't want to congest our doctors' offices with people seeking sick notes.
e. If you miss the final exam, you will require a doctor's note or you must provide other documentation to the Faculty of Science office (i.e. don't give it to me) in order to qualify to write the final exam.

Due Date:	Assessment Tool	Value of Final Grade*
Feb 4th 2020	Midterm I	30%
March 17th 2020	Midterm II	30%
TBD	Final exam	40%

* if you're following option 1 (see below)

There are three 'options' for grading– whichever grade is highest will be used to determine your final grade.

Option 1: Both midterms are used to calculate your grade. Obviously to have this option open, you have to actually write both midterms.

Midterm 1 (approximately first 10 to 12 lectures)	30%
Midterm 2 (next 10 to 12 lectures)	30%
Final exam (cumulative, weighted)	40%

Option 2: If midterm 1 or midterm 2 is missed (or you seriously tanked one of them), then your grade is calculated as follows:

Midterm 1 or 2	30%
Final exam	70%

Option 3: If both midterm 1 and 2 are missed, then your grade is calculated as follows:
Final exam 100%
Please note that option 3 is a really, really, really bad idea! ☺

Note that it's easier and less stressful to write all the midterms and leave all possible options open to you!! Previous students who didn't write either midterm and defaulted to a 100% final usually failed. So just… don't do this.

Grading

Letter grade calculations for this course follow the standard Department of Biological Sciences scale:

Letter Grade	Percentage out of 100	Grade Point Range	Final Grade Point
A+	90-100	4.25-4.5	4.5
A	80-90	3.75-4.24	4.0
B+	74-79	3.25-3.74	3.5
B	68-73	2.75-3.24	3.0
C+	62-67	2.25-2.74	2.5
C	56-61	2.0-2.24	2.0
D	50-55	Less than 2.0	1.0
F	Less than 50		0