

Introduction to Toxicology
BIOL 2380 / ENVR2180 / AGRI 2190
Winter 2015

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, toxicant exposure, the mechanisms of toxic action, and some major types of toxicants.

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Email: jake.stout@umanitoba.ca
Office hours: Tuesday and Thursday, 11 AM to noon (or by appointment via email)

Lectures Tuesday and Thursday, 8:30 to 9:45 AM. Fletcher Argue 200.

Website All course material (lecture slides, etc.) will be available on D2L.

| Marks | <u>Option 1</u> | | <u>Option 2</u> | | <u>Option 3</u> | |
|--------------|------------------------|-----|------------------------|-----|------------------------|-----|
| | | | | | | |
| | Midterm 1 | 25% | Midterm | 35% | Final | 90% |
| | Midterm 2 | 25% | Quizzes | 10% | Quizzes | 10% |
| | Quizzes | 10% | Final exam | 55% | | |
| | Final exam | 40% | | | | |

Exams

- a.** The midterm exams will be non-cumulative. All midterms questions will be multiple choice. These exams will be 50 minutes long and will be held in class (see schedule for times).
- b.** There will be NO deferred (aka 'makeup') midterm exams. . If you miss either midterm 1 or 2, you automatically qualify for grading options 2 or 3. If you miss both midterms 1 and 2, then you qualify only for grading option 3. 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.
- c.** The final exam will consist of short-answer and multiple choice questions. A heavier weighting will be placed upon the final 1/3rd of the course.
- d.** You must write the final exam to pass the course.
- 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 at a later date.
- e.** Your final grade will be the BEST combination of the above 'options'.

Textbook

A Small Dose of Toxicology. Free!! Available at:

<http://www.toxipedia.org/display/dose/A+Small+Dose+of+Toxicology>

An English copy of the text is uploaded onto UManLearn.

Readings will be assigned, and the online-quizzes will be based upon the readings. More details to follow in lecture.

| | | | | | | |
|---------------|----------|----|---------|----|---------|---|
| Grades | 90 - 100 | A+ | 70 - 75 | B | 50 - 59 | D |
| | 80 - 89 | A | 66 - 69 | C+ | < 50 | F |
| | 76 - 79 | B+ | 60 - 65 | C | | |

Course timetable

This is version 2.0 of the course, and lecture topics *may* shift around a bit!

| Lecture | Date | Topic |
|---------|--------|---|
| 0 | Jan 7 | Intro |
| 1 | Jan 12 | Detection of toxins |
| 2 | Jan 14 | Dose response curves & bioassays |
| 3 | Jan 19 | Factors affecting toxicity |
| 4 | Jan 21 | Absorption & toxicokinetics |
| 5 | Jan 26 | Metabolic conversion and elimination of toxicants |
| 6 | Jan 28 | Cellular and tissue targets of toxicity |
| | Feb 2 | Midterm 1 |
| 7 | Feb 4 | Metals |
| 8 | Feb 9 | Food toxicology |
| 9 | Feb 11 | No class |
| | Feb 16 | Winter break |
| | Feb 18 | Winter break |
| 10 | Feb 23 | Particulates and air pollution |
| 11 | Feb 25 | Solvents and hydrocarbons |
| 12 | Mar 1 | Persistent environmental contaminants |
| 13 | Mar 3 | Pesticides |
| 14 | Mar 8 | Radiation |
| 15 | Mar 10 | Plant and animal toxins |
| | Mar 15 | Midterm 2 |
| 16 | Mar 17 | Environmental risk assessment (Mark Hanson) |
| 17 | Mar 22 | (Annemieke Farenhorst) |
| 18 | Mar 24 | Environmental chemistry |
| 19 | Mar 29 | Bioaccumulation and biomagnification |
| 20 | Mar 31 | Guest lecture (Vince Palace) |
| 21 | Apr 5 | Guest lecture (Vince Palace) |
| 22 | Apr 7 | Review |

Faculty of Science Statement on Academic Dishonesty

The Faculty of Science and The University of Manitoba regard acts of academic dishonesty in quizzes, tests, examinations, laboratory reports or assignments as serious offences and may assess a variety of penalties depending on the nature of the offence.

Acts of academic dishonesty include, but are not limited to bringing unauthorized materials into a test or exam, copying from another student, plagiarism, and examination impersonation.

Note: cell phones, pagers or electronic translators are explicitly listed as unauthorized materials, and must not be present during tests or examinations.

Penalties that may apply, as provided for under the University of Manitoba's Student Discipline By-Law, range from a grade of zero for the assignment or examination, failure in the course, to expulsion from the University. The Student Discipline By-Law may be accessed at:

http://umanitoba.ca/admin/governance/policies/section_1200/1202.shtml

Suggested penalties assessed by the Faculty of Science for acts of academic dishonesty are available on the Faculty of Science web-page: <http://umanitoba.ca/faculties/science/>

All Faculty members (and their teaching assistants) have been instructed to be vigilant and report all incidents of academic dishonesty to the Head of the Department.

Jake's statement on academic dishonesty

Although you're sitting in a giant lecture hall feeling like a single student amongst thousands, when you get further along in *any* career you'll generally get hired based upon your **REPUTATION**. Cheating and other forms of dishonesty shows that your character may not be the best. Also, you may need at some point a professor to write you a letter of reference... academic dishonesty doth not lead to glowing reviews. So don't do it, m'kay?

REGISTRATION RESTRICTIONS

PLEASE ENSURE THAT YOU THE STUDENT ARE ENTITLED TO BE REGISTERED IN THIS COURSE:

THIS MEANS THAT YOU THE STUDENT HAVE:

-the appropriate prerequisites, as noted by the calendar description, or have permission from the instructor to waive these prerequisites

-not previously taken, or are concurrently registered in this course and another that has been identified as "not to be held with"

The registration system may have allowed the student to register but it is up to the student to ensure that they have met all the requirements.

Consequences may be the student being withdrawn from the course part way through the term, or the course not used in the degree program. There will be no fee adjustment. This is not appealable.