

**MEDICAL TOXICOLOGY: TOX\*4000**  
**Fall Semester 2011 Course Outline**  
**Department of Biomedical Sciences**

**Dr. Herman Boermans**, Course Coordinator

<u>Lecturers:</u>	<u>Phone</u>	<u>Location</u>	<u>Email</u>
<b>Dr. Herman Boermans</b>	54984	2602 OVC Main Bldg	<a href="mailto:hboerman@uoguelph.ca">hboerman@uoguelph.ca</a>
<b>Dr. Niel Karrow</b>	53646	125 Animal Science	<a href="mailto:nkarrow@uoguelph.ca">nkarrow@uoguelph.ca</a>
<b>Andrea Edginton</b>		School of Pharmacy University of Waterloo	<a href="mailto:aedginto@uwaterloo.ca">aedginto@uwaterloo.ca</a>

Guest Lecturers

<b>Dr. Scott Jordan</b>	Chemical Health Hazard Assessment Division Health Canada, Ottawa	<a href="mailto:scott.jordan@hc-sc.gc.ca">scott.jordan@hc-sc.gc.ca</a>
<b>Dr. Marvin Faber</b>	Corporate Environmental, Health & Safety Patheon Inc.	<a href="mailto:Marvin.faber@patheon.com">Marvin.faber@patheon.com</a>

Teaching Assistant (TA):

<b>Brandon Walters</b>	56704 Animal and Poultry Science	<a href="mailto:bwalters@uoguelph.ca">bwalters@uoguelph.ca</a>
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Objectives:

This course is designed to provide students with an understanding of the adverse effects of chemicals on the body an area of study called medical toxicology. It is a 4th year level course requiring a sound understanding of normal mammalian anatomy and physiology. The toxic responses of the body systems, methods to measure toxic response and specific chemical effects will be presented in an integrated manner through lectures, and interactive problem-based learning. Emphasis will be placed on toxicokinetics, mechanism of action and patho-physiological mechanisms responsible for clinical sign, lesions caused by toxicants and bioindicators of effects. Knowledge of these factors will assist the student to better understand methods used to assess toxic response, diagnosis and treatment of chemically caused disease.

<u>Lectures:</u>	OVC Main Bldg	Room 1642 OVC
	Monday Wednesday Friday	9:30 - 10:20

<u>PBL Sessions:</u>	OVC Main Bldg	Room 1642 OVC
	Tuesday 1:30 – 2:30	

Required Text: 1. **Casarett and Doull's Toxicology** - 7<sup>th</sup> Edition. C.D.Klaassen, Ed. McGraw-Hill, 2008  
*Alternative* 2. **Casarett and Doull's Essentials of Toxicology**, McGraw-Hill, 2003  
C.D.Klaassen, and J.B. Watkins Eds. (Abbreviated version of above)

Evaluation: Students will be evaluated as follows:

PBL Group Presentation and report	20%
System/toxicant reports	80%
No Final Examination	(University Scheduled Tuesday Dec. 6, 2:30 - 4:30 p.m.)

This is a D2L based course permitting students rapid access to course materials, grades and course information and updates. Access is through the On-Campus Web Course Portal [Courselink@ < http://courselink.uoguelph.ca/](http://courselink.uoguelph.ca/) .You will use D2L to access course content, lecture slides, view scheduled events (calendar) and grades, and **submit/receive reports**.

**MEDICAL TOXICOLOGY (TOX\*4000) LECTURE OUTLINE Fall 2011**

**LOCATION:** OVC Room 1642  
 Monday 9:30-10:20, Wednesday 9:30-10:20, Friday 9:30-10:20

<b>Lecture Date</b>	<b>Section</b>	<b>Instructor</b>
1. Friday Sep.9 2. Monday Sep.12 3. Wednesday Sep.14 4. Friday Sep. 16	1st Meeting Biotransformation	H Boermans
5. Monday Sep. 19 6. Wednesday Sep. 21 7. Friday Sep. 23	Hepatic Toxicology	
8. Monday Sep. 26 9. Wednesday Sep.28 10. Friday Oct. 1	Renal Toxicology	
11. Monday Oct. 3 12. Wednesday Oct.5 13. Friday Oct.7	Respiratory Toxicology	
14. Wednesday Oct.12 15. Friday Oct.14	PBL Pharmaceutical / Occupational Health & Safety	H Boermans/ Marvin Faber
16. Monday Oct.17 17. Wednesday Oct.19 18. Friday Oct.21	Cardiovascular Toxicology	Brandon Walters
19. Monday Oct.24 20. Wednesday Oct.26 21. Friday Oct. 28	Dermal Toxicology / Toxicogenomics	Dr. Karrow
22. Monday Oct. 31 23. Wednesday Nov. 2 24. Friday Nov. 5	Immunotoxicology	H Boermans
25. Monday Nov. 7 26. Wednesday Nov.9 27. Friday Nov.12	Neurotoxicology / Special Senses	
28. Monday Nov.14 29. Wednesday Nov.16 30. Friday Nov. 19	Reproductive / Developmental Toxicology	
31. Monday Nov.21 32. Wednesday Nov.23 33. Friday Nov. 26	Gastrointestinal Toxicology	
34. Monday Nov. 28 35. Wednesday Nov. 30 36. Thursday Dec. 1	Toxicokinetics (make up class for Monday Oct 10)	Boermans/ Edginton Boermans/Jordan

**MEDICAL TOXICOLOGY PBL SCHEDULE FALL 2011**

Topic	Date: 1:30 - 2:20 PM	Activity
1. Treatment	Sept. 13	Overview of toxicosis management
2. Biotransformation:	Sept. 20	Group 1
3. Hepatic Toxicology	Sept. 27	Group 2
4. Renal Toxicology	Oct. 4	Group 3
5. Respiratory Toxicology No PBL Tuesday Oct.11	<b>Oct. 12</b>	Group 4
6. Get over Midterms	Oct. 18	
7. Cardiovascular Toxicology	Oct. 25	Group 5
8. Dermal Toxicology	Nov. 1	Group 6
9. Immunotoxicology.	Nov. 8	Group 7
10. Neurotoxicology	Nov. 15	Group 8
11. Reproductive / Developmental Toxicology	Nov. 22	Group 9
12. Gastrointestinal Toxicology	Nov. 29	Group 10 presentation

All students must submit their System/toxicant reports using D2L on Tuesday by 24:00 hours (12:00 PM at night) the day the Topic is discussed in class. Students will lose marks if reports are submitted late. Students presenting the PBL topic will have until Friday of the same week to polish their report which will be made available to the entire class for future reference.

## MEDICAL TOXICOLOGY TOX\*4000 FALL 2011

### HOW TO SUBMIT ASSIGNMENTS ON D2L

1. Log in to D2L
2. Click on Assignments in the left side column, under Course Tools
3. Click on the lab assignment you wish to complete
4. Under Assignment files, click on the file name
5. Under submissions, click Add Attachments
6. Your assignment should be written in WORD. Please name your file with the assignment and your name i.e. biotransformationsmith.doc. Blackboard will not accept file names with spaces.
7. If you wish you may add a comment in the box, and then click Submit.
8. An acknowledgement that you successfully submitted your assignment should appear. Also a time mark of submittal is provided to the grader.

### PBL Session REQUIREMENTS

**PBL Session attendance is mandatory.** You are expected to have completed a draft of your PBL report for the week and be ready to ask questions before coming to each PBL session. The PBL session will give you an opportunity to clarify issues you may have in your report and then fine tune the report ready for submission that evening.

#### Student PBL Reports

There are two types of reports you will be writing this semester: a) **Presenting Group Report (one for 20%) and b) System/toxicant reports (nine for 80%).** There are 10 topics (systems) covered in lecture and all students will provide a System/toxicant report other than the one in which they are presenting. You will be assigned to a group early in the semester. Students will receive the Toxicant or case study on Monday of the week the system is discussed in lecture, the week prior to the Tuesday PBL session.

**System/toxicant reports** are to be written in your own words (not sections from the literature or referenced) describing important issues about the case or toxicant using the information learned in class. This will help you apply the material you learned in class to real world problems. A list of issues that may be addressed will be discussed in class. Your report should be approximately 3 pages but not longer than 5 pages, 1.5 spaced, and font size 11. Marks will be deducted from late reports (10% off per day). Each of the 9 System/toxicant reports will be weighted equally. MARKS ARE NOT A MEASURE OF EFFORT (VOLUME) but reflects ability to demonstrate an understanding of the concept(s) raised. Each assignment will be posted in D2L. A student must provide all reports to complete the course.

#### Presenting Group Report

**PBL Presentation** – A 30 min seminar format is followed, using power point presentation. A major emphasis in PBL sessions is for all students to ask questions to clarify issues they may have or discuss issues of interest. Therefore discussion is expected for the remaining time for the PBL session. It is inappropriate to leave the PBL class after the presentation. Please email Brandon Walters the power point slide on the night before your presentation, so that your TA can convert it to pdf and post it available on D2L for others to read prior to the presentation.

Standard seminar grading is followed. Each group member is expected to share, participate, and present equally. Comprehensive coverage of content, thoroughness, and conveying of key concepts are of interest over presentation skills

**Reports** – The report should be an in depth coverage of the assigned topic and should focus on Content - demonstrate understanding of the concept(s) raised, and Continuity - a logical progression of thought. A group's grade is on seminar preparation, presentation/delivery, content, and ability to answer questions and final report quality. All students in the group must also provide Dr. Boermans by the Friday of their Presentation with a grade (%) for each of their group members with a comment on contribution by each member.

### **Student Course Evaluation**

Students will be asked to complete a questionnaire on instructors' teaching competence during the last week of class. This is part of information required by the University of evaluate faculty performance for purposes of Tenure, Promotion and Selective Increases. Administered by a third party rather than the instructors, these evaluations will be delivered to the respective instructors ONLY after the final grades have been submitted to the Registrar's Office. Note: only the numerical ratings from the form will be made available to the Chair for administrative purposes. The Chair will NOT see any comments that are written on the evaluation forms.

### **Academic Misconduct**

The University of Guelph takes a very serious view of Academic Misconduct. Included in this category are such activities as cheating on examinations, plagiarism, misrepresentation, and submitting the same material in two different courses without written permission. Students are expected to be familiar with the section on Academic Misconduct in the Undergraduate Calendar and should be aware that expulsion from the University is a possible penalty.

## **ACADEMIC STANDING**

Senate - University of Guelph (Undergraduate Calendar)

### 80-100 (A) Excellent

An outstanding performance in which the student demonstrates a superior grasp of the subject matter, and an ability to go beyond the given material in a critical and constructive manner. The student demonstrates a high degree of creative and/or logical thinking, a superior ability to organize, to analyze, and to integrate ideas, and a thorough familiarity with the relevant literature and techniques.

### 70-79 (B) Good

A more than adequate performance in which the student demonstrates a thorough grasp of the subject matter, and an ability to organize and examine the material in a critical and constructive manner. The student demonstrates a good understanding of the relevant issues and a familiarity with the relevant literature and techniques.

### 60-69 (C) Acceptable

An adequate performance in which the student demonstrates a generally adequate grasp of the subject matter and a moderate ability to examine the material in a critical and constructive manner. The student displays an adequate understanding of the relevant issues, and a general familiarity with the relevant literature and techniques.

### 50-59 (D) Minimally Acceptable

A barely adequate performance in which the student demonstrates a familiarity with the subject matter, but whose attempts to examine the material in a critical and constructive manner are only partially successful. The student displays some understanding of the relevant issues, and some familiarity with the relevant literature and techniques.

### 0-49 (F) Fail

An inadequate performance.