CHM 4790 Medicinal Chemistry Fall 2009

- **Course Goals:** This course should serve as an introduction to medicinal chemistry, as well as illustrate several key classes of therapeutic agents. By completion of the course, students should have a general idea of how drug discovery and development occurs, how structural features in drugs affect activity, and how drugs interact and react in the body.
- **Prerequisites:** CHM 2840 Organic Chemistry II. It is expected that you have at your fingertips a basic knowledge of key principles such as sterics, induction, resonance, conformational analysis, and reactions.
- Lectures: Time: 1:00 1:50 P. M. Days: Monday, Wednesday, Friday Place: Physical Sciences Building Room 4125
- Instructor:
 Dr. Ed Treadwell

 Office:
 Physical Sciences Building Room 4450

 Phone:
 581-6229

 E-mail:
 emtreadwell@eiu.edu

 Office Hours:
 Mon. 2:00-3:00, Tues. 12:00-1:00 pm, Fri. 9:00-10:00 am

 Other hours as available or by appointment.

There will be a WebCT page for this course (CRN 94329) that you should use regularly.

Course Policies:

- (1) Reading assignments are given on the class schedule, and you are expected to read and retain the information contained therein. The lectures are not designed to go over everything in the text, and questions on assignments and exams will appear from material in the book but not discussed in class. Additional reading (mostly from journal articles) will be required throughout the semester.
- (2) Attendance is not recorded or evaluated for grading purposes, but you are strongly encouraged to attend all classes. It is also expected that you will arrive on time, as well as being attentive and nondisruptive during class. This includes turning your cell phone off.
- (3) You are responsible for all announcements made during class, whether you are present or not.
- (4) Absences and Makeup Exams
 - A. Absences for Medical Reasons

If you are absent for a quiz or exam because you were sick, you may take a makeup quiz or exam if you provide an excuse that is *written* and *signed* by a medical official.

B. Absences for Athletic Reasons

If you must be absent for a quiz or exam because of required travel with an university athletic team, contact me in advance and plan to take the quiz or exam at a suitable time.

- Other Absences Absences due to emergency reasons will be judged on a case-by-case basis, though only rarely will an absence be excused if it does not fall under one of the two above criteria. Lack of a valid reason for an absence will result in a zero score on the exam that was missed.
- (5) On every exam, you are responsible for all material covered previously in the course.
- (6) There is final exam is comprehensive that counts for 25% of your course grade.
- (7) If you have a documented disability and wish to discuss academic accommodations, please contact Dr. Treadwell as soon as possible.
- (8) All aspects of the student conduct code are expected to be followed, and issues of plagiarism or cheating will be directly taken to the Student Conduct Board.

Materials:Foye's Principles of Medicinal Chemistry, 5th ed. by Williams, Foye, Lemke, and Foye
Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry,
11th ed. by John H. Block and John M. Beale, Jr.

Grading:

Item	Points
3 Exams,	300
100 pts each	
Assignments (~4-8)	70
Literature discussion	30
Quizzes (~ 3-5)	70
Presentation	60
Final exam	80
Total	610

Course format:

Lectures will augment the reading assignments in the text, and provide additional illustrative examples. Literature articles relevant to the topics being discussed will be given on Mondays approximately every other week, and ~10-15 minutes on Friday will be spent discussing these articles in class. A partial list of guiding questions will be provided with the literature article(s). You will be graded on your participation in these discussions. Assignments will be distributed throughout the semester, to help solidify your understanding of the material and to put the material covered in context. Quizzes will be given sporadically throughout the semester, at the end of the class, with 10-15 minutes to complete them.

At the end of the course, a short oral (10 minute) PowerPoint presentation will be given by each student on a clinically approved drug not specifically covered in the course. The presentation should be professionally done, and it is expected that there will be a successful question-and-answer section following each presentation. A copy of the slides will be collected. More details on the presentation will be given as the class progresses.

Week		Topic	Readings from Textbook
1	(Aug. 24 - 28)	Intro, Drug Discovery	Foye Ch. 1 & pgs. 1-23
2	(Aug. 31 - Sept. 4)	Structure and Activity	Foye Ch. 2, W&G Ch. 2
3	(Sept. 9 - 11)	Structure and Activity (cont'd)	
4	(Sept. 14 - 18)	Pharmacokinetics	Foye Ch. 7
5	(Sept. 21 - 23)	Pharmacokinetics, Metabolism	Foye Ch. 8, W&G Ch. 4
	Sept. 25	EXAM I	
6	(Sept. 28 - Oct. 2)	Metabolism (cont'd)	
7	(Oct. 5 - 7)	Drug Preparation and Approval	W&G Ch. 5, W&G Ch. 3, Foye Ch. 9
8	(Oct. 12 - 16)	Receptors and Enzymes	Foye Ch. 4, 5
9	(Oct. 19 - 23)	Receptors and Enzymes (cont'd)	
10	(Oct. 26 - 28)	NSAIDs / Anthihistamines	Foye Ch. 32, 33, W&G Ch. 21, 22
	Oct. 30	EXAM II	
11	(Nov. 2 - Nov. 6)	Antihistamines / Hypnotics	Foye Ch. 15
12	(Nov. 9 - 13)	Hallucinogens and Stimulants	Foye Ch. 18
13	(Nov. 16 - 20)	Anticancer Drugs	Foye Ch. 38
14	(Nov. 30 - Dec. 2)	Antiviral Drugs	Foye Ch. 39

EXAM III

Course outline:	The following	topics	will	be	covered	in	the	order	given	below,	with	an	<u>approximated</u>
schedule:													

15 (Dec. 5 - 7) Student Presentations

Dec. 4