

TEXAS



Chiropractic College

**Division of Diagnosis
Department of Clinical Specialties**

TOXICOLOGY & PHARMACOLOGY SYLLABUS

CP-5220.TP Toxicology and Pharmacology

2 Credit Hours

2 Lecture Hours

0 Lab Hours

TR5 SPRING 2012

COURSE DESCRIPTION:

This course provides an introduction to the pharmacological principles of legend, over the counter and herbal medicine with emphasis on those entities that affect neuromusculoskeletal mechanisms. Toxicology of the central nervous systems is integrated into the course material.

PREREQUISITES: GI, GU, Endocrine and Neurophysiology

Meeting times and places

Monday 10 a.m. R-204

Friday 10 a.m. R-204

Contact Information:

Course Professor: Dr. Jesse T. Coats, RPh., D.C., D.A.A.P.M., C.C.S.P.,

Associate Clinical Professor & Department Head Clinical Specialties

Office: Room #317, Iwama Building

Office Hours:

Monday 8 a.m.

Tuesday 8 a.m.

Wednesday 8 a.m. & 11 a.m.

Thursday 8-11 a.m.

Friday 11 a.m.

Because office hours are occasionally utilized for meetings and other activities, it would be advisable to schedule appointments prior to the time of your desired appointment.

Phone: Campus (281) 998-6064

Clinical Office (281) 996-7600

Emergency # (281) 685-2827

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Faculty Support: Michelle (281) 998-6083, Eddie (281) 998-6082

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Edvance360.com/txchiro/

COURSE MATERIALS:

REQUIRED TEXTBOOK:

Brody's HUMAN PHARMACOLOGY: MOLECULAR TO CLINICAL,
Wecker, Crespo, Dunaway, Faingold, Watts. 5th Edition, Elsevier Mosby, 2009.

Edvance 360:

The course syllabus, course announcements, and the course grades will be posted on Edvance 360 (formally Scholar 360). The web address is: <http://edvance360.com/txchiro/>

CLINICAL COMPETENCIES:

Course content will include the following clinical competencies:

CCE Clinical Competencies

1. History Taking
2. Physical Examination
3. Neuromusculoskeletal Examination
4. Case Management
5. Case follow up and review
6. Nutritional Counseling
7. Record Keeping
8. The Doctor-Patient Relationship
9. Wellness

TCC Clinical Competencies

1. Communication
2. Complementary and Alternative Medicine
3. Evidence Based Practice/Research
4. Nutritional Counseling
5. Public Health
6. Referral/Collaborative Care
7. Special Populations

LEARNING OUTCOMES: These are global, programmatic outcomes the student should be "able to do" after successful completion of this course.

1. Describe the various classes of pharmaceuticals available to the medical physician and consequently potentially to the public.
2. Discuss basic mechanism of action and indication for usage of pharmaceuticals, nutraceuticals, and natural products.
3. Develop rapport with the prescribing physician while resolving drug-drug, drug-nutrient, and drug-co-morbid disease interactions.

4. Augment your chiropractic practice with prudent usage of OTC (over the counter) drugs, nutraceuticals, natural products and supplements.
5. Identify, list and discuss drug actions that might mimic neuromusculoskeletal conditions in private practice.

COURSE OBJECTIVES:

1. Define all bold face type within the chapters as presented in class.
2. Apply those terms as you solve clinical scenarios such as patients experiencing untoward side effects, food/drug interactions, drug/drug interactions and comorbid conditions/drug interactions.
3. Apply basic receptor theory, mechanisms of cellular communication and relate how changing the dose or concentration of drug at the site of action may affect dose response relationships.
4. Know stages of drug development as they relate to new drug application and development.
5. Develop your skill at communicating your written orders with other healthcare professionals through the use of medical terminology and prescription writing short hand using latin and greek abbreviations.
6. Apply your working knowledge of the various medicinal herbs and natural products as you help select safer, alternatives to legend or prescription medicinals.
7. Utilize information you have accrued about the human nervous system, peripheral nervous system (PNS) and the central nervous system (CNS).
8. Integrate that knowledge with information about the automatic nervous system as you make uses of the interaction among the 3 divisions to solve clinical conditions that involve any one or all of the divisions of the nervous system.
9. Commit to memory all receptor types, location and physiological implications as you can use this information to solve clinical conditions that arise out of pathophysiologic mechanisms.
10. Review the physiology of the parasympathetic nervous system and apply that knowledge to pathophysiologic conditions related to aberrant parasympathetic nervous system discharge.
11. Learn the basic pharmacological classes of drugs used to normalize the parasympathetic nervous system.
12. Review the physiology of the sympathetic nervous system and apply that knowledge to pathophysiologic conditions related to aberrant sympathetic nervous system discharge.
13. Learn the basic pharmacological classes of drugs used to normalize the sympathetic nervous system.
14. Review the physiology of skeletal muscle contraction and neurological control of that phenomena then apply those mechanisms to demonstrate the pharmacodynamics of skeletal muscle relaxants.
15. Review the physiology of nervous impulse transmission then apply those mechanisms to demonstrate the pharmacodynamics of local anesthetics.
16. Review the biosynthesis and physiology of histamine then apply those mechanisms to demonstrate the pharmacodynamics of H1 and H2 blockers.
17. Review the biosynthesis and physiology of membrane phospholipids and the eicosanoids generated through the enzymatic action of phospholipase A2, cyclooxygenase and lipooxygenase system then apply those mechanisms to demonstrate the pharmacodynamics of corticosteroids, COX1, COX 2 inhibitors and leukotriene blockers and lipooxygenase.

18. Review pathophysiology of lung disease and design therapeutic options both nutritional as well as pharmacotherapeutic.
19. Review the physiology of the GI system, the pathophysiology of ulcers, gastritis, IBS, GERD and ulcerative colitis then design treatment protocols both pharmacologic and natural.
20. Review cardiovascular physiology including rennin/angiotension/aldosterone system then apply those mechanisms as you identify pharmacotherapeutic methods as well as nutritional interventions you might use treat hypertension and fluid retention.
21. Review biochemistry of all classes of lipids and proposed mechanisms of atherosclerosis then identify natural products, pharmacotherapeutic agents as well as nutritional interventions that might treat hyperlipidemias.
22. Analyze various strategies presented in class when counseling patients or collaborating with other health care professionals about drugs, nutritional supplements and co-management or referral of specific cases.

TEACHING PHILOSOPHY

In a modern chiropractic practice it is imperative to have a basic knowledge of the pharmacology associated with the use of pharmaceuticals. This course is designed to acquaint the student physician with these various classes of pharmacotherapeutic agents and their prudent, knowledgeable utilization and evaluation of such entities. Additionally the pharmacotherapeutics of natural products will be taught.

The approach used in this class is to begin with a review of the basic sciences covered in the course, then build into the clinical application of the new clinical material covered.

The student doctor should benefit from this approach 3 fold:

1. Identify and solidifying attained background knowledge in basic science,
2. Correlating this basic science knowledge through application of such to solve novel clinical problems presented in upper level clinical courses,
3. And finally fortifying board preparation through this comprehensive review of basic science and clinical corollaries.

Teaching Methods:

Teaching methods used in this course will vary according to tempo and personality of the class. PowerPoint presentations will be used.

STUDENT RESPONSIBILITIES

The responsible student will:

- come to class,
- take notes,
- learn the material presented,
- participate in classroom discussion,
- prepare well ahead of time for exams.

Last day to drop and/or add.....Friday January 20th 2012
Last day to withdraw.....Friday March 02nd 2012

Quizzes/Exams:

Hourly exams will be given at regular intervals and paced somewhat to the tempo of the class.

Holidays/Other Non-meeting Dates:

Classes will not meet:

Monday January 16th – Martin Luther King Jr. Day

Monday February 20th – President's Day

March 16th – 18th – NBCE Exams

Friday April 06th – Good Friday

Monday April 16th – Student Study Day

Final Exam Week..... April 17th – 24th

COURSE CONTENT:

Week 1

Introduction and definitions

Week 2

General Principles

Chapter 1: Receptors and concentration-response relationships

Week 3

Chapter 2: Pharmacokinetics: Absorption, distribution, metabolism, and elimination

Week 4

Chapter 3: Clinical pharmacokinetics and issues in therapeutics

Chapter 4: Regulated drug development and usage

Week 5

Chapter 7: Herbals and natural products

Chapter 8: Principles of Toxicology

Week 6 Exam I, consisting of 50-60 multiple choice questions and "fill in the blank" covering the topics to date worth one third of your final grade in the course.

Chapter 9: Introduction to the autonomic nervous system

Week 7

Chapter 10: Drugs affection the parasympathetic nervous system and autonomic

Chapter 11: Drugs affecting the sympathetic nervous system

Week 8

Chapter 12: Skeletal Muscle Relaxants
Chapter 13: Local Anesthetics

Week 9

Chapter 15: Prostaglandins and other Eicosanoids
Chapter 16: Drugs to Treat Asthma and COPD

Week 10

Chapter 18: Drugs Affecting the GI System
Chapter 19 Introduction to the Regulation of Cardiovascular Function

Week 11

Chapter 20: Antihypertensive Drugs

Week 12

Chapter 25 Lipid Lowering Drugs and Atherosclerosis

Week 12 Exam II consisting of 50-60 multiple choice questions and “fill in the blank” covering material weeks 1-12 worth one third of your grade in the course.

Week 13-14

Special topics: practice management, collaboration and referral, and patient co-management.

FINAL EXAM (WEEK 15) – Take Home final will count for one third of your final grade in the course. The Learning Objectives of this Take Home Exam are: Demonstrate the ability to do an adequate search of the literature to answer clinical questions that arise in daily interactions with patients and other professionals. Devise strategies or techniques for consultation of these selected topics with the patient or collaboration with the other health care professional.

GRADE METHOD AND SCALE

Explanation of Evaluation:

Evaluation of progress will be solely by way of regularly spaced hourly examinations. Grading scale is per student handbook with the following values:

90-100 = A

80-89 = B

70-79 = C

Below 70 = F

Assessment Process and Measurements:

There will be 2 hourly exams equally weighted and together comprise 67% of your total grade for the course. The final exam will comprise 33% of your total grade for the course.

Assessment Format:

Each of the hourly exams will be of multiple-choice format and some fill in the blank when appropriate and extended matching. Your final will follow the same format.

Essential Policy Information:

“For specific procedures on how each policy is enforced see the Student Handbook.”

Attendance: Regular and punctual attendance at all scheduled classes is expected. A student is subject to academic penalty, loss of 10% of your grade in the course, if absences exceed **ten percent**. Absences exceeding **twenty percent** subject a student to dismissal from the course. Three incidences of tardiness will constitute an absence.

This lecture and lab course meets for 15 weeks (3 hours per week). The total amount of seat time is 45 hours. **Over ten percent** of this time would be **5 missed classes**. Miss 5 classes and you will lose 10% of your grade. Over twenty percent of this time would be 10 missed classes. **I will give you a “WF” if you miss 10 classes.**

Missed Examinations:

Students must notify faculty before missing any examination. If an examination is missed for good and sufficient reason and the student has notified the faculty member in advance, a make-up examination may be given subject to a fee of \$40.00. The fee for the make-up examination is a minimum of \$75.00 if a standardized patient is required for the exam. Additional required standardized patient hours may increase this \$75.00 minimum fee. All intra-term examination must be made up prior to final examinations. Missed final examinations must be made up within the first week of the next semester. A student may be allowed a maximum of two missed examination dates for good and sufficient reason per trimester. These two missed examination dates are for all enrolled courses in a trimester, not for each individual course. Any request for additional make-up examinations will require documentation substantiating the absence and must be approved by the Dean of Academic Affairs.

You have 2 weeks from the date you return to make up exams missed during the trimester.

Students arriving late for written examinations will not be allowed extra time. Students arriving late after an examinee has turned in their test will not be allowed to take the written examination and must schedule an appointment for a make-up provided they have appropriate acceptable documentation as to why they were late.

Incompletes: Course assignments and examinations must be completed prior to the final examination in that course. Those not completed will receive a grade of zero.

Classroom Management Policy: TCC is committed to the fundamental principles of freedom of speech, including controversial positions taken in the classroom by faculty and/or students. However, all types of speech and behavior must be balanced with principles of appropriate classroom behavior in a professional school. Faculty have a right to establish clear expectations in this regard and students should share the responsibility for maintaining an appropriate, orderly learning environment. Students who fail to adhere to the behavioral expectations outlined by the instructor (either in the syllabus or at the time the behavior occurs) may be subject to discipline in accordance with the procedures described below and the College’s Student Discipline Policy (see Student Handbook).

Identification of disruptive behavior by students may include but is not limited to:

Mild to moderately disruptive behavior;
Persistent speaking without permission
Engaging in activities not related to the class
Inappropriate use of computers, cell phones or other electronic devices
Sleeping in class
Chronically entering class late or leaving early
Eating or drinking in the classroom if the faculty members syllabus specifically disallows it
Disputing authority in an argumentative or disrespectful manner with faculty and/or other students

Moderate to severely disruptive behavior;
Verbal or physical threats
Physical altercations
Destruction of property

Cellular phones/Electronic Devices: Electronic communication devices are to be turned off or placed in silent mode when in the classroom. These devices are **NOT** allowed to be on your person during testing situations. Cellular phones may **NOT** be answered during class time without prior permission from the faculty member. Texting or e-mailing is **NOT** allowed during class time. All devices will be confiscated if used during class and the student will lose 10% of their final total grade per offense. There is **NO** warning on this issue. Refusal to turn over your electronic device constitutes “insubordination” and an incident report will be filed.

You may only use your lap top for taking notes and following along with Dr. Coats’ power point. Should you have any other screen up you will lose the privilege of using a lap top in ALL class you have now or will have in the future with Dr. Coats. This will be considered unprofessional conduct and you will lose 10% of your final grade.

Guidance and Counseling: The Guidance and Counseling Department is prepared to confidentially assist you with personal, relationship or academic issues. With appropriate documentation, the Director of Guidance and Counseling coordinates academic related special needs with instructors.

Plagiarism: “Plagiarism is defined as copying or paraphrasing information from any published or non-published source, except for properly referenced citation, and presenting this material as one’s own, original work for credit in a course. Plagiarism is considered the equivalent of cheating.” **I will give you a “WF” if you are given an individual assignment and you do it with someone else. I will give you a “WF” if you cut and paste material from anywhere (internet, other professor’s slides) and turn it in as your own work. All turned in work is to be a summary of material in your own words whether it is referenced or not.**

Note: Other important policies can be obtained from the current edition of the Student Handbook.

THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THIS SYLLABUS AT ANY TIME. ANY CHANGES WILL BE NOTED VERBALLY (in class) AND IN WRITING

(Edvance 360).