Sport and Exercise Pharmacology

I. COURSE DESCRIPTION
Apply fundamental pharmacologic knowledge of commonly prescribed medications used to prevent or treat health issues that occur in athletic populations. Review indication, mechanism of action and adverse effects of substances used to enhance athletic performance.

II. RATIONALE
Completion of this course satisfies cognitive, psychomotor, and affective educational competencies required by the Commission on Accreditation of Athletic Training Education (CAATE) prior to applying to sit for the Board of Certification (BOC) exam to become a Certified Athletic Trainer (ATC).

III. ADOPTED PROFICIENCIES FOR TEACHERS AND/OR ADMINISTRATORS/COUNSELORS: N/A

IV. TExES COMPETENCIES
a. TExES COMPETENCIES: n/a
b. NATIONAL COMPETENCIES & PROFICIENCIES FOR ATHLETIC TRAINING (CAATE 4TH Ed.)
   Acute Care Competencies Taught & Evaluated:
   • AC-C27d: Identify the signs, symptoms, possible causes, and proper management of toxic drug overdose.

Pharmacology Competencies Taught & Evaluated:
• PH-C1: Explain the laws, regulations, and procedures that govern storing, transporting, dispensing, and recording prescription and nonprescription medications (Controlled Substance Act, scheduled drug classification, and state statutes).
• PH-C2: Identify appropriate pharmaceutical terminology and abbreviations used in the prescription, administration, and dispensing of medications.
• PH-C3: Identify information about the indications, contraindications, precautions, and adverse reactions for common prescription and nonprescription medications (including herbal medications) using current pharmacy resources.
• PH-C4: Explain the concepts of pharmacokinetics (absorption, distribution, metabolism, and elimination) and the suspected influence that exercise might have on these processes.
• PH-C5: Explain the concepts related to bioavailability, half-life, and bioequivalence.
• PH-C6: Explain the general pharmacodynamic principles as they relate to the mechanism of drug action and therapeutic effectiveness (e.g. receptor theory, dose-response relationship, potency, and drug interactions).
• PH-C7: Describe the common routes used to administer medications (e.g. oral, inhalation, and injection) and their advantages and disadvantages.
• PH-C8: Explain the relationship between generic or brand name pharmaceuticals.
• PH-C9: Identify medications that might cause possible poisoning, and describe how to activate and follow the locally established poison control protocols.
• PH-C10: Explain the known usage patterns, general effects, and short- and long-term adverse effects for the commonly used performance-enhancing substances.
• PH-C11: Identify which therapeutic drugs and non-therapeutic substances are banned by sport and/or workplace organizations in order to properly advise patients about possible disqualification and other consequences.

Pharmacology Proficiencies Taught:
• PH-P1: Obtain and communicate patient education materials regarding physician-prescribed medications, over-the-counter drugs, and performance-enhancing substances using appropriate references.
• **PH-P2**: Abide by federal, state, and local regulations for the proper storage, transportation, dispensing (administering where appropriate), and documentation of commonly used medications.
• **PH-P3**: Activate and effectively follow locally established poison control protocols.

**Psychosocial Competencies Taught & Evaluated:**
• **PS-C11**: Identify and describe the sociological, biological and psychological influences toward substance abuse, addictive personality traits, the commonly abused substances, the signs and symptoms associated with the abuse of these substances, and their impact on an individual’s health and physical performance.

**V. COURSE OBJECTIVE AND OUTCOMES**
This course is designed to enable the students to:
1. Explain the laws, regulations, and procedures that govern storing, transporting, dispensing, and recording prescription and nonprescription medications.
2. Identify appropriate pharmaceutical terminology and abbreviations used in the prescription, administration, and dispensing of medications.
3. Identify information about the indications, contraindications, precautions, and adverse reactions for common prescription and nonprescription medications using current pharmacy resources.
4. Explore the path physiology, signs/symptoms, and treatment options of human disorders often diagnosed in athletes.
5. Recognize credible hard copy and electronic drug references used to determine the correct maximum daily dose and administration of medications used in sports medicine.
6. Understand the athletic trainer's role in recognizing drug abuse and understanding of classes of substances banned by the National Collegiate Athletic Association (NCAA) and International Olympic Committee (IOC).
7. Identify medications that might cause possible poisoning, and describe how to activate and follow the locally established poison control protocols.

**VI. COURSE TOPICS**
The major topics to be considered are the classifications, therapeutic uses, actions, side effects/adverse reactions of major drug groups related to sports activities, pharmacokinetics, legal concerns, therapeutic outcome of drugs commonly used to treat athletes, protocols for over-the-counter medications, and substance abuse.

**VII. INSTRUCTIONAL METHODS AND ACTIVITIES**
A. **Traditional Experiences**
The course will include assigned chapter readings, online video postings, powerpoint presentations, and additional readings as appropriate. Blackboard will be used for delivery of course materials including quizzes, assignments, announcements, and other information related to the course.

**VIII. EVALUATION AND GRADE ASSIGNMENT**

<table>
<thead>
<tr>
<th>Course Activities</th>
<th>Grading Policy / Percentage</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>In class Introduction</td>
<td>Attendance to Course Introduction: <em>(1 point bonus)</em></td>
<td>A = 90 – 100 points</td>
</tr>
<tr>
<td>Online Tests</td>
<td>Tests: 4 <em>(40 points)</em></td>
<td>B = 89 – 80 points</td>
</tr>
<tr>
<td>Online Quizzes</td>
<td>Quizzes: 10 <em>(50 points)</em></td>
<td>C = 79 – 70 points</td>
</tr>
<tr>
<td>Final Assignment</td>
<td>Final Assignment: 1 <em>(10 points)</em></td>
<td>D = 69 – 60 points</td>
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<td></td>
<td></td>
<td>F= 59 – below points</td>
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</tbody>
</table>
IX. CLASS SCHEDULE AND POLICIES

Attendance

The entire course including assignments, quizzes and exams are available on-line and are available according the course schedule. Students are required to complete the course work when assigned and complete the work by the due date. Excused absences are limited to participation in a TAMUCC sanctioned event or participation in a religious holy day as outlined in the University catalog; however, because there is typically is sufficient time to complete all assignments missed assignments, quizzes and exams will only be made up in extreme circumstances. Any assignment, quiz, or test missed due to a TAMUCC sanctioned event must be completed prior to the absence. Coursework, assignments, and quizzes may not be made-up due to tardiness. **Consistent and punctual attendance and participation is critical to the successful completion of this course.** If the student misses an assignment, quiz or exam due to emergencies which involve illness, family emergencies etc., it is the responsibility of the student to notify the instructor as soon as possible via e-mail or phone.

Technology

This course is delivered via Blackboard.
Important Note: All students must enter a User Name and Password to access their Blackboard account. Student User Names will be your student ‘A’ number (i.e. A00123456). Student passwords will default to date of birth; however, passwords should be changed after the initial log in.

If a student experiences technical difficulties, please call the Island Online (IOL) support line at 361-825-2825. Additionally, please notify the instructor ASAP via phone or e-mail.

Academic Integrity/Plagiarism

University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a zero on the assignment, exam or quiz and a referral to the judicial board of academic affairs.

Dropping a Class

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Friday April 1, 2011 is the last day to drop a class with an automatic grade of “W” this term.

TENTATIVE COURSE SCHEDULE

*Indications, contraindications, precautions, and adverse reactions will be discussed for each drug category. Additionally, generic and brand names will be discussed within each category.

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS, QUIZ EXAM SCHEDULE</th>
<th>REQUIRED READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/25/2013</td>
<td>Unit 1-History of Pharm, Legal Issues, Documentation and Terminology.</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>2/1/2013</td>
<td>Class meeting/live lecture over Unit 1 cont.-Pharmokinetics/Pharmacodynamics and Routes of Administration, syllabus acknowledgement due, Quiz #1 over Chapter 1 due.</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>2/8/2013</td>
<td>Quiz #2 over Chapter 2 due. Test Q&amp;A over Unit 1-Chapter 1, 2.</td>
<td></td>
</tr>
<tr>
<td>2/15/2013</td>
<td>Test #1 over Chapter 1, 2 due. Unit 2-OTC and prescription Anti-inflammatories</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>2/22/2013</td>
<td>Quiz #3 over Chapter 3 due. Unit 2 cont.- OTC and prescription Muscle-relaxants</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Chapter(s)</td>
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<tr>
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<tr>
<td>3/1/2013</td>
<td>Quiz#4 over Chapter 4 due. Unit 2 cont.-OTC and prescription Analgesics and Anesthetics.</td>
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</tr>
<tr>
<td>3/8/2013</td>
<td>Quiz #5 over Chapter 10 due. Review Unit 2 info for Test #2</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>3/11-3/15/2013</td>
<td>SPRING BREAK-NO QUIZZES OR TESTS</td>
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<tr>
<td>3/22/2013</td>
<td>Test #2 over Chapter 3, 4, 10 due. Unit 3-Diabetes Mellitus drugs. Gastrointestinal drugs.</td>
<td>Chapter 5, 8</td>
</tr>
<tr>
<td>3/29/2013</td>
<td>Quiz #6 over Chapter 5, 8 due. Unit 3 cont.-Respiratory and Cardiovascular drugs.</td>
<td>Chapter 6, 7</td>
</tr>
<tr>
<td>4/5/2013</td>
<td>Quiz #7 over Chapter 6, 7 due. Unit 3 cont.-Antiviral, antifungal and antibiotic drugs.</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>4/12/2013</td>
<td>Quiz #8 over Chapter 9 due. Review Unit 3 info for Test #3</td>
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</tr>
<tr>
<td>4/19/2013</td>
<td>Test #3 due over Chapters 5, 6, 7, 8, 9. Unit 4-Commonly abused drugs: Steroids</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>4/26/2013</td>
<td>Quiz #9 over Chapter 11 due. Unit 4 cont.-Stimulants and Ergogenic supplements.</td>
<td>Chapter 12, 13</td>
</tr>
<tr>
<td>5/3/2013</td>
<td>Quiz #10 over Chapter 12, 13 due. Unit 4 cont.-Substance abuse, overdose and poisoning (poison control protocols)</td>
<td>Chapter 14, 15</td>
</tr>
<tr>
<td>5/14/2013</td>
<td>Test #4 over Chapters 11, 12, 13, 14, 15 due. Final assignment due.</td>
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The instructor reserves the right to change the schedule to cover all subjects thoroughly. Information presented in class may come from a source other than the textbook. **No make-up tests will be given except under extreme circumstances.** A physician’s note is necessary if you are ill.

**X. TEXTBOOKS**

**Required:**

**Recommended:**

**XI. BIBLIOGRAPHY**

Journal articles pertinent to class materials will be made available to all students.

**XII. GRADE APPEALS**

As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

**XIII. DISABILITY ACCOMMODATIONS**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in
If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

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**KINE 4328-Sport and Exercise Pharmacology**

**Syllabus Acknowledgment Form**

I, (print name)____________________________________________, certify by my signature that I have read and understand the class policies that have been presented in the class syllabus for KINE 4328 Sport and Exercise Pharmacology at Texas A&M University-Corpus Christi.

Signature ______________________________________ Date ____________________

Student ID # _____________________

Submit this form to instructor via Blackboard e-mail, fax (361-825-3708), or in person to the Kinesiology Department (3rd floor of Island Hall).