Issues in Health and Fitness

AT 5200-OL Pharmacology-Sports Medicine
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Online Availability: By Appointment
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Course Delivery : Online in Moodle

Catalog Description
This course will examine knowledge, skills, and values required of the entry-level athletic trainer on pharmacological applications including awareness of the indications, contraindications, precautions and interactions of medications, and governing regulations relevant to the treatment of injuries to and illnesses of athletes and others involved in physical activity.

Course Content
1. Introduction and Basic Principles of Pharmacology
   a. Basic Principles of Drug Therapy
   b. Drug binding
   c. Drug Absorption
   d. Drug Distribution
   e. Drug Excretion
   f. Intramuscular injection
   g. Intravenous injection
   h. Pharmacokinetics
   i. Pharmacodynamics
   j. Federal laws regarding medication and prescription terminology
2. Anti-Infectives/Antibiotics
   a. Antimicrobial drugs
   b. Drugs for Treating Infections
3. Treating Inflammation
   a. What is inflammation
   b. Inflammation pathway
   c. Inflammation and injury treatment
4. Pain Therapy
   a. Using ice to decrease pain
   b. Heat therapy
   c. Pain perception
   d. Pain management
   e. Rewiring the brain to ease pain
5. Relaxing Skeletal Muscles
   a. Skeletal muscle relaxants
   b. Topical analgesics
6. Treating Asthma
   a. Asthma review
   b. Asthma treatment guidelines

7. Colds and Allergies
   a. New insights into the Common cold
   b. Colds in children

8. GI Disorders
   a. The digestive system
   b. Treating constipation
   c. Treating diarrhea
   d. Treating heartburn

9. Hypertension
   a. Hypertension and Heart disease
   b. Resistance training for the patient with hypertension
   c. Beta blockers and exercise

10. Psychiatric Disorders
    a. Depression in Medicine
    b. Psychiatric Disorders
    c. Messengers of the mind

11. Diabetes
    a. Diabetes review
    b. Diabetes and exercise precautions

12. Performance Enhancing Drugs
    a. Common nutritional supplements
    b. Performance Enhancing drug review
    c. Pumped-the truth about PEDS
    d. Drug testing in Sports
    e. Sport Nutrition

Textbook/Resources.


Resources:
www.epocrates.com
www.skyscape.com
www.sportsinjuryhandbook/injuries
www.sportsinjuryclinic.net
www.humankinetics.com
http://www.nhlbi.nih.gov/guidelines
www.nejm.org
http://journals.lww.com/acsm-healthfitness
www.nationaljewish.org/healthinfo/medications/lung-diseases
www.steriodlaw.com
**Performance Based Competencies/Objectives (NATA 2012 Therapeutic Medications)**

1. Explain the federal, state, and local laws, regulations and procedures for the proper storage, disposal, transportation, dispensing (administering where appropriate), and documentation associated with commonly used prescription and nonprescription medications.

2. Identify and use appropriate pharmaceutical terminology for management of medications, inventory control, and reporting of pharmacological agents commonly used in an athletic training facility.

3. Use an electronic drug resource to locate and identify indications, contraindications, precautions, and adverse reactions for common prescription and nonprescription medications.

4. Explain the major concepts of pharmacokinetics and the influence that exercise might have on these processes.

5. Explain the concepts related to bioavailability, half-life, and bioequivalence (including the relationship between generic and brand name drugs) and their relevance to the patient, the choice of medication, and the dosing schedule.

6. Explain the pharmacodynamic principles of receptor theory, dose-response relationship, placebo effect, potency, and drug interactions as they relate to the mechanism of drug action and therapeutic effectiveness.

7. Describe the common routes used to administer medications and their advantages and disadvantages.

8. Properly assist and/or instruct the patient in the proper use, cleaning, and storage of drugs commonly delivered by metered dose inhalers, nebulizers, insulin pumps, or other parenteral routes as prescribed by the physician.


10. Explain the general therapeutic strategy, including drug categories used for treatment, desired treatment outcomes, and typical duration of treatment, for the following common diseases and conditions: asthma, diabetes, hypertension, infections, depression, GERD, allergies, pain, inflammation, and the common cold.

11. Optimize therapeutic outcomes by communicating with patients and/or appropriate healthcare professionals regarding compliance issues, drug interactions, adverse drug reactions, and sub-optimal therapy.
Assessments:

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Content of Course Which Addresses Technological Standards/Competence
Use of the internet for medical information and specific sites for valid information

Evaluation Plan/Grading Scale
3 assignments, each worth 100 points, 10 Discussion questions, each worth 10 points for Participation grade, Quiz #1 and Final Exam each worth 100 points. (600 points total)

Course Calendar/Agenda
Dates are posted within the online course front page regarding assignments and discussion forum participation timelines.

Conceptual Framework
All course objectives address the hallmarks listed below.

College of Graduate Studies Hallmarks

- Leadership and advocacy
- Scholarship and action/application
- Reflection and innovation
- Professionalism and service
• Global awareness and social responsibility

University Policies and Procedures

• **ADA Policy:** Plymouth State University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you think you have a disability requiring accommodations, you should contact the PASS office in Lamson library (535-2270) to determine whether you are eligible for such accommodations. Academic accommodations will only be considered for students who have registered with the PASS Office. If you have a Letter of Academic Accommodation for this course from the PASS office, please provide the instructor with that information privately so that adaptations can be made to meet your needs. Course materials online comply with the Web-based Intranet and Internet Information and Applications Standards in accordance with ADA Section 508.

• **Academic Integrity:** Academic integrity is the foundation of the pursuit of knowledge. All members of the academic community are expected to be dedicated to the pursuit of knowledge in an honest, responsible, respectful, and ethical manner. Every violation of academic integrity is an affront to the academic community. Violations of academic integrity make fair evaluation impossible and cast doubt upon the seriousness with which students accept the responsibility of acquiring an education. Members of the academic community are expected to report all instances of those violations of academic integrity that come to their attention. Both faculty and administration consider it their duty, as guardians of academic standards and intellectual honesty, to enforce the academic integrity policy by prosecuting all cases of violation of academic integrity to the fullest extent. Students are urged to consider that it is the toleration of violations of academic integrity, and not the reporting of it, that is dishonorable. Please refer to the Graduate Catalog for more information and the entire policy.

• **Sensitive Materials:** Material in this course, in some instances, may be sensitive or emotionally provocative. As you review the syllabus, or at any time during the course, please let your instructor know if you anticipate, or are having, a problem with any assignment or classroom activity. We can then discuss how this assignment or activity is necessary for meeting course competencies and whether an alternative assignment or activity can be considered. We can also discuss campus resources that you may find helpful in dealing with your concerns.

• **Plymouth State University Curtailed Operations Information:** Plymouth State University normally remains open through inclement weather. Because most students live within minutes of the campus, every effort is made to avoid an official closing. There may be times, however, when an emergency or extreme weather conditions necessitate a general closing of the University.

Please sign up for PSU Alert Emergency Text Messaging at: plymouth.edu/alerts

Following are the PSU curtailed operations and/or class cancellation notification
procedures:
In the event of severe weather or an emergency, the University Administration will do all it can to decide on and post notifications of class/event cancellations and/or facility closures by 6:00 a.m. for classes running during the day. For canceling evening classes, the decision is usually made and communicated no later than 3:00 p.m. Every effort will be made to make the decision as early as possible. If you are wondering, call the storm line (603-535-3535) or check the PSU website.

Use your own judgment about travel during inclement weather; the best choice is the one that keeps you safe. Notify your instructor(s) if you have to miss a class.

- **Lamson Library and Learning Commons**
  Access to the IT Help Desk is available at 603-535-2929. Log in to MyPlymouth to access all of the Lamson Library and Learning Common resources and services. The Writing Center and the PASS office are located in the lower level of Lamson; the Help Desk in on the Main Floor.