GEORGE MASON UNIVERSITY
School of Recreation, Health, and Tourism

ATEP 270—General Medication Conditions and Pharmacology in Physically Active Populations (3)
Spring 2013

DAY/TIME:	MW 10:30 am – 11:45 am	LOCATION:	BRH #246
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OFFICE HOURS:	M W 12:00 pm-1:00 pm	FAX NUMBER:	703-993-2025

PREREQUISITES
ATEP 270
Formal acceptance to the professional phase of the ATEP; ATEP 150, 180, 250, 255, 256, 260, 265, 266; BIOL 124, 125; HEAL 110, 230; PHED 300

COURSE DESCRIPTION
An examination of assessment and management techniques of general medical conditions and pharmacological principles in physically active populations.

COURSE OBJECTIVES
At the completion of this course students should be able to complete the following:

1. Differentiate body systems as a series of interrelated functional systems;
2. Recognize acute and chronic physiological and pathological responses of the body to various stimuli e.g. environment, drugs, pathogens, and physical activity;
3. Describe mechanisms of general medical conditions in the physically active including the etiology, pathogenesis, pathomechanics, signs, symptoms, and epidemiology of these conditions;
4. Describe basic principles of management of general medical conditions in physically active populations;
5. Interpret and use appropriate medical terminology and employ medical documentation techniques;
6. Recognize legal regulation of pharmaceuticals, and the athletic trainer's responsibility in storing, transporting, dispensing, and recording of prescription and non-prescription medications;
7. Demonstrate the use of the Physician's Desk Reference and other pharmacy resources;
8. Explain general pharmacodynamic and pharmacokinetic principles and the influence of physical activity on these processes;
9. Compare and contrast common routes used to administer medications; and
10. Discuss performance-enhancing substances and identify which ones are banned in physically active settings

COURSE OVERVIEW
This didactic course will focus on developing the cognitive competencies necessary for students to understand common general medical conditions commonly seen in the physically active population. Students will also learn pharmacological principles and the role of athletic trainers in medication dispensation.

Attendance
Students are expected to be on time, attend all class meetings and be prepared for in class assignments and quizzes. Excused absences include the following: illness (must bring a receipt or note from a doctor), family death, athletic/academic event, and others at the discretion of the instructor. For known upcoming absences, students must contact the instructor at least one week in advance to the missed class to make up work. In the case of illness or some other unforeseen absence, the student must contact the instructor via e-mail. At the next

attended class meeting the student will discuss material that is to be completed. It is the student's obligation to pursue any make-up work.

Make Up Work
Students who are absent or who arrive late without an official university or a medical doctor's excuse may miss quizzes or other in-class activities. There will be no make-up quizzes or exams unless an excused absence has been warranted. Students who miss an examination quiz or other class activity because of an excused absence must complete the assignment on their first time back in class. All make-up work must be completed by the last day of class unless other approved arrangements are made. It is the student's obligation to pursue any make-up work.

NATURE OF COURSE DELIVERY
Face-to-Face

Further, upon completion of this course, students will meet the following Commission on Accreditation of Athletic Training Education (CAATE) competencies and proficiencies:

Code	Competency
MC-C1	Describe and know when to refer common congenital or acquired abnormalities, physical disabilities, and diseases affecting people who engage in physical activity throughout their life span (e.g., arthritis, diabetes).
MC-C2	Understand the effects of common illnesses and diseases in physical activity.
MC-C3	Describe common techniques and procedures for evaluating common medical conditions and disabilities including taking a history, inspection/observation, palpation, functional testing, special evaluation techniques (e.g., assessing heart, lung and bowel sounds), and neurological and circulatory tests.
MC-C4	Describe and know when to refer common eye pathologies from trauma and/or localized infection (e.g., conjunctivitis, hyphema, corneal injury, stye, scleral trauma).
MC-C5	Describe and know when refer common ear pathologies from trauma and/or localized infection (e.g., otitis, ruptured tympanic membrane, impacted cerumen).
MC-C6	Describe and know when to refer common pathologies of the mouth, sinus, oropharynx, and nasopharynx from trauma and/or localized infection (e.g., gingivitis, sinusitis, laryngitis, tonsillitis, pharyngitis).
MC-C7	Describe and know when to refer common and significant respiratory infections, thoracic trauma, and lung disorders. (e.g., influenza, pneumonia, bronchitis, rhinitis, sinusitis, upper-respiratory infection (URI), pneumothorax, hemothorax, pneumomediastinum, exercise-induced bronchospasm, exercise-induced anaphylaxis, asthma).
MC-C8	Explain the importance and proper use of a peak flowmeter or similar device in the evaluation and management of respiratory conditions.
MC-C9	Describe strategies for reducing the frequency and severity of asthma attacks.
MC-C10	Explain the possible causes of sudden death syndrome.
MC-C11	Describe and know when to refer common cardiovascular and hematological medical conditions from trauma, deformity, acquired disease, conduction disorder, and drug abuse (e.g., coronary artery disease, hypertrophic cardiomyopathy, heart murmur, mitral valve prolapse, commotion cordis, Marfan's syndrome, peripheral embolism, hypertension, arrythmogenic right ventricular dysplasia, Wolf-Parkinson-White syndrome, anemias, sickle cell anemia and sickle cell trait [including rhabdomyolysis], hemophilia, deep vein thrombosis, migraine headache, syncope).
MC-C12	Describe and know when to refer common medical conditions that affect the gastrointestinal and hepatic-biliary systems from trauma, chemical and drug irritation, local and systemic infections, psychological stress, and anatomic defects (e.g., hepatitis, pancreatitis,

	dyspepsia, gastroesophageal reflux, peptic ulcer, gastritis and gastroenteritis, inflammatory bowel disease, irritable bowel syndrome, appendicitis, sports hernia, hemorrhoids, splenomegaly, liver trauma).
MC-C13	Describe and know when to refer common medical conditions of the endocrine and metabolic systems from acquired disease and acute and chronic nutritional disorders (e.g., diabetes mellitus and insipidus, hypothyroidism, Cushing's syndrome, thermoregulatory disorders, gout, osteoporosis).
MC-C14	Describe and know when to refer common medical conditions of the renal and urogenital systems from trauma, local infection, congenital and acquired disease, nutritional imbalance, and hormone disorder (e.g., kidney stones, genital trauma, gynecomastia, monorchidism, scrotum and testicular trauma, ovarian and testicular cancer, breast cancer, testicular torsion, varicoceles, endometriosis, pregnancy and ectopic pregnancy, female athlete triad, primary amenorrhea, oligomenorrhea, dysmenorrhea, kidney laceration or contusion, cryptorchidism).
MC-C15	Describe and know when to refer common and/or contagious skin lesions from trauma, infection, stress, drug reaction, and immune responses (e.g., wounds, bacteria lesions, fungal lesions, viral lesions, bites, acne, eczema dermatitis, ringworm).
MC-C16	Describe and know when to refer common medical conditions of the immune system from infection, congenital and acquired disease, and unhealthy lifestyle. (e.g., arthritis, gout, upper respiratory tract infection [URTI], influenza, pneumonia, myocarditis, gastrointestinal infection, urinary tract infection [UTI], sexually transmitted diseases [STDs], pelvic inflammatory disease, meningitis, osteomyelitis, septic arthrosis, chronic fatigue and overtraining, infectious mononucleosis, human immunodeficiency virus (HIV) infection and AIDS, hepatitis B virus infection, allergic reaction and anaphylaxis, childhood infectious diseases [measles, mumps, chickenpox]).
MC-C17	Describe and know when to refer common neurological medical disorders from trauma, anoxia, drug toxicity, infection, and congenital malformation (e.g., concussion, postconcussion syndrome, second-impact syndrome, subdural and epidural hematoma, epilepsy, seizure, convulsion disorder, meningitis, spina bifida, cerebral palsy, chronic regional pain syndrome [CRPS], cerebral aneurysm).
MC-C18	Describe and know when to refer common psychological medical disorders from drug toxicity, physical and emotional stress, and acquired disorders (e.g., substance abuse, eating disorders/disordered eating, depression, bipolar disorder, seasonal affective disorder, anxiety disorders, somatoform disorders, personality disorders, abusive disorders, and addiction).
MC-C19	Describe a plan to access appropriate medical assistance on disease control, notify medical authorities, and prevent disease epidemics.
MC-C20	Describe and know when to refer common cancers (e.g., testicular, breast).
MC-C21	Describe and know when to refer common injuries or conditions of the teeth (e.g., fractures, dislocations, caries).
MC-C22	Explain the importance and proper procedures for measuring body temperature (e.g., oral, axillary, rectal).
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.

REQUIRED READINGS

1) Cuppett M, Walsh KM. *General Medical Conditions in the Athlete*. St. Louis, MO: Elsevier Mosby; 2005.
2) Mangus, B, Miller, M. *Pharmacology Application in Athletic Training*. Philadelphia, PA: F. A. Davis Company; 2005.
3) Any additional handouts (as stated in the schedule) posted on Blackboard.

EVALUATION

This course will be graded on a point system, with a total of 380 possible points.

Requirements	**Points**
Quiz	
#1	20
#2	20
#3	20
Exam	
#1	100
#2	100
#3 Final - **CUMULATIVE**	100
PDR Assignment	20
TOTAL	380

Grading Scale

A = 348 – 380	B+ = 329 – 340	C+ = 291 – 301	D = 227 – 264
A- = 341 – 347	B = 314 – 328	C = 276 – 290	F = 0 – 226
	B- = 302 – 313	C- = 265 – 275	

TENTATIVE COURSE SCHEDULE

DATE			TOPIC	READINGS
M	January	23	Syllabus Review Introduction to General Medicine & CBC Elements of a Prescription	C&W Ch. 1-2 C&W Appendix A &B
W	January	28	Introduction to Pharmacology Drug References – Physician's Desk Reference	M&M Ch. 1 Handout
M	January	30	Pharmacodynamics Pharmacokinetics	M&M Ch. 2
W	February	4	**PDR Project Due** Begin Infectious Diseases	C&W Ch. 12
M	February	6	Review PDR Project Infectious Diseases	C&W Ch. 12
W	February	11	**QUIZ #1** Drugs for Infectious Diseases (Anti-Infectives)	M&M Ch. 9
M	February	13	Cardiac Disorders	C&W Ch. 5
W	February	20	Clotting & Hematological Conditions	C&W Ch. 5 Handout
M	February	25	*Dermatological Conditions**	C&W Ch. 13
W	February	27	Vascular Disorders and Treatment	C&W Ch. 5 M&M Ch. 6
M	March	4	**EXAM I – Covers all material through & including 2/27**	
W	March	6	Respiratory Disorders	C&W Ch. 4
M W	March	11 /3	**SPRING BREAK**	
M	March	18	Respiratory Drugs + Proper Inhaler Technique	M&M Ch. 7
W	March	20	Colds & Allergies	Handout
M	March	25	*Eye, Ear, Nose, Throat & Mouth Disorders**	C&W Ch. 9 and 10
W	March	27	*Neurological Disorders** *Psychological Disorders**	C&W Ch. 8 and 15
M	April	1	**QUIZ #2** Gastrointestinal Disorders and Drugs	C&W Ch. 6 and M&M Ch. 8
W	April	3	Diabetes Mellitus & Treatment	C&W Ch. 7 M&M Ch. 5
M	April	8	**EXAM II - Covers all material from dates 3/6 through & including 4/3**	
W	April	10	*Genitourinary and Gynecological Conditions**	C&W Ch. 11
M	April	15	Inflammatory Disorders and Anti-Inflammatory Drugs	Handouts M&M Ch. 3
W	April	17	Analgesics & Local Anesthetics	M&M Ch. 10
M	April	22	Systemic Disorders (Cancers, Hyper/Hypothyroidism, Marfan's Syndrome) Thermoregulatory Disorders, Cushing's Syndrome	C&W Ch. 11 C&W pg. 396

DATE			TOPIC	READINGS
W	April	24	**QUIZ #3** Allergic Reactions & Anaphylaxis	
M	April	29	*Antispasticity Agents** *Skeletal Muscle Relaxants**	M&M Ch. 4
W	May	1	Natural & Ergogenic Supplements Stimulants Diuretics	M&M Ch.12 and 13 Handout
M	May	6	Muscle Building Agents (Anabolics) Blood Doping Recognition & Rules	M&M Ch.11 and 15 Handout
W	May	8	**FINAL EXAM CUMULATIVE 10:30 AM –1:15 PM**	

Note: Faculty reserves the right to alter the schedule as necessary
*Italic topics** **= Web lecture, no in-class lecture will be held**

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See http://academicintegrity.gmu.edu/honorcode/].
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See http://ods.gmu.edu/].
- Students must follow the university policy for Responsible Use of Computing [See http://universitypolicy.gmu.edu/1301gen.html].
- Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
- Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.
- Students are expected to exhibit professional behaviors and dispositions at all times.

Campus Resources

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See http://caps.gmu.edu/].
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See http://writingcenter.gmu.edu/].
- For additional information on the College of Education and Human Development, School of Recreation, Health, and Tourism, please visit our website [See http://rht.gmu.edu].

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