COLLEGE OF CHARLESTON
ATEP 365 General Medical Conditions in Athletics (3 cr hours)

Fall 2011 Academic Semester

Meeting Time: Lecture: MWF 9:00-9:50
Meeting Location: Silcox Center, Rooms 146 and 148
Instructor: Susan L. Rozzi, PhD, ATC, SCAT, Associate Professor, Director-ATEP
Office Location: 317 Silcox Physical Education & Health Center
Office Hours: Posted on office door. If you are unable to meet during my regularly scheduled office hours please contact me to set up an appointment. Note: Office hours are tentative.
Office Phone: (843) 953-7163
Email: rozzis@cofc.edu

Class On-line Management System: Hosted by OAKS
Prerequisites: ATEP 345 and lab, BIOL 201, and acceptance into the Athletic Training Education Program, or permission of the course instructor


Course Description
This course focuses on general medical conditions by body system; their mechanism of acquisition, signs, symptoms, referral criteria and return-to-participation guidelines. Candidates explore treatment options and the body’s physiological and psychological response to pharmacological agents. Methods of identifying risk factors and preventing general medical conditions will also be discussed.

Learning Objectives: Upon the successful completion of this course, the student should be able to:

1. explain the etiology and prevention guidelines associated with the leading causes of sudden death during physical activity, including but not limited to: (a) cardiac arrest, (b) asthma, (c) traumatic brain injury, (d) hyponatremia, (e) exertional sickling, (f) anaphylactic shock.
2. identify the signs, symptoms, interventions, and when appropriate the return to play criteria for potential life-threatening conditions such as: (a) sudden cardiac arrest, (b) exertional sickling associated with sickle cell trait, (c) rhabdomyolysis, (d) diabetic emergencies including hypoglycemia and ketoacidosis, (e) asthma attacks, (f) systemic allergic reaction, including anaphylactic shock, (g) epileptic and non-epileptic seizures, (h) shock, (i) toxic drug overdose, (j) local allergic reaction.
3. develop specific plans of care for common potential emergent conditions.
4. determine the need for, demonstrate use of, and assist a patient in the use of (when warranted): (a) a nebulizer, (b) a meter-dose inhaler, (c) glucometer, (d) auto-injectable epinephrine.
5. identify common congenital, acquired, modifiable, non-modifiable risk factors along with typical injury/illness mechanisms, and signs and symptoms for common illnesses affecting people who engage in physical activity throughout their life span.
6. explain the precautions and risk factors associated with physical activity in persons with common congenital and acquired abnormalities, disabilities, and diseases.
7. assess, interpret findings, determine participation status, and make referral decisions from a clinical examination conducted using standard techniques and procedures for the clinical examination of common conditions, illnesses, and diseases including, but not limited to:
   a. history taking (pertinent past medical history, underlying systemic disease, use of medications, patient’s perceived pain, course of condition)
   b. inspection/observation
   c. palpation,
d. cardiovascular function (including differentiation between normal and abnormal heart sounds, blood pressure, and heart rate)
e. pulmonary function (including differentiating between normal breath sounds, percussion sounds, number and characteristics of respiration, peak expiratory flow),
f. abdominal assessment (percussion, palpation, auscultation)
g. gastrointestinal function (including differentiating between normal and abnormal bowel sounds)
h. genitourinary function (urinalysis),
i. ocular function (vision, ophthalmoscope)
j. function of the ear, nose, and throat (including otoscopic evaluation)
k. dermatological assessment
l. other assessments (glucometer, temperature)
m. functional assessment

8. conduct a clinical examination of common conditions, illnesses, and diseases by:
   a. describing the role of diagnostic imaging and testing in the diagnostic procedure,
   b. applying clinical prediction models
   c. modifying the diagnostic exam according to situation and patient demands
   d. using clinical reasoning
   e. incorporating concept of differential diagnosis
   f. determining when examination results warrant referral of patient
   g. explaining the role of evidence in the clinical decision making process
   h. determining the effectiveness and efficacy of an athletic training intervention using evidence-based practice concepts.

9. describe ways federal and state infection control regulations and guidelines for the prevention, exposure, and control of infectious diseases apply to the practice of athletic training and describe a plan to limit transmission of communicable diseases including:
   a. accessing appropriate medical assistance on disease control
   b. notifying medical authorities
   c. protecting health care providers to prevent disease transmission and epidemics.

10. describe current setting-specific and activity specific rules and guidelines for managing injuries and illnesses and develop healthcare educational programs specific to the target audience.

11. describe the role of the athletic trainer and the delivery of athletic training services in the healthcare system by:
   a. describing the role and function of various health care providers and protocols that govern the referral of patients to these professionals
   b. differentiating among the preparation, scope of practice, and roles and responsibilities of healthcare providers and other professionals
   c. specifying when referral of a client/patient to another healthcare provider is warranted
   d. formulating and implementing strategies to facilitate that referral.

12. identify and describe the basic signs and symptoms of mental health disorders, and personal/social conflict that may indicate the need for referral to a mental health care professional.

13. describe how common pharmacological agents influence pain and differentiate between palliative and primary pain-control interventions.

14. explain the concepts of pharmacokinetics and the influence exercise might have on these process

15. explain the concepts of bioavailability, half-life, and bioequivalence and their relevance to the patient, the choice of medications, and the dosing schedule.
16. explain the concepts of pharmacodynamics as they relate to the mechanism of drug action and therapeutic effectiveness.

17. explain the theories and principles relating to expected physiological responses during and following therapeutic (pharmacological) intervention and how these responses vary across the lifespan.

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

19. design, dispense, and administer (when appropriate) therapeutic interventions using prescription and nonprescription medications by:
   a. assessing the patient and employ an electronic drug resource to identify indications, contraindication, precautions, and potential adverse reactions.
   b. identifying therapeutic drugs, supplements, and performance-enhancing substances banned by sport or workplace organizations
   c. stating the advantages and disadvantages of common routes used to administer medications
   d. positioning and preparing the patient and properly assisting and/or instructing the patient in the proper use, cleaning, and storage of drugs commonly delivered by metered dose inhalers, nebulizers, insulin pumps, or other parenteral routes.
   e. communicating with patient regarding compliance issues, drug interactions, adverse drug reactions, and sub-optimal therapy.
   f. applying the intervention, using appropriate parameters
   g. reassessing the patient to determine the immediate impact of treatment and to determine when a treatment should be progressed, regressed, or discontinued.
   h. Using appropriate pharmaceutical terminology for management of medications, inventory control, and reporting of all pharmacological agents.

20. explain the general therapeutic strategy for the following common diseases and conditions: (a) asthma, (b) diabetes, (c) hypertension, (d) infections, (e) depression, (f) GERD, (g) allergies, (h) pain, (i) inflammation, and (j) the common cold.

5th Edition Educational Competencies The content of this course will in part or completely cover the following competencies from the 5th edition of the NATA Educational Competencies:

1. Assist the patient in the use of a nebulizer treatment for an asthmatic attack.
2. Determine when the use of a meter-dose inhaler is warranted based on a patient’s condition.
3. Instruct a patient in the use of a meter-dose inhaler in the presence of asthma-related bronchospasm.
4. Demonstrate the use of an auto-injectable epinephrine in the management of allergic anaphylaxis. Decide when an auto-injectable epinephrine use is warranted based on a patient’s condition.
5. Identify the signs, symptoms, interventions, and when appropriate the return to play criteria for: (a) sudden cardiac arrest, (b) exertional sickling associated with sickle cell trait, (c) rhabdomyolysis, (d) diabetic emergencies including hypoglycemia and ketoacidosis, (e) asthma attacks, (f) systemic allergic reaction, including anaphylactic shock, (g) epileptic and non-epileptic seizures, (h) shock, (i) toxic drug overdose, (j) local allergic reaction.
6. Identify the common congenital and acquired risk factors and causes of musculoskeletal injuries and common illnesses that may influence physical activity in pediatric, adolescent, adult, and aging populations.
7. Describe the basic principles of diagnostic imaging and testing and their role in the diagnostic process.
8. Apply clinical prediction models (e.g., Ottawa Ankle Rules) during clinical examination procedures.
9. Obtain a thorough medical history that includes the pertinent past medical history, underlying systemic disease, use of medications, the patient's perceived pain, and the history and course of the present condition.
10. Demonstrate the ability to modify the diagnostic examination process according to the demands of the situation and patient responses.
11. Use clinical reasoning skills to formulate an appropriate clinical diagnosis for common illness/disease and orthopedic injuries/conditions.
12. Incorporate the concept of differential diagnosis into the examination process.
13. Use standard techniques and procedures for the clinical examination of common injuries, conditions, illnesses, and diseases including, but not limited to: (a) history taking, (b) inspection/observation, (c) palpation, (d) functional assessment, (e) respiratory assessment (auscultation, percussion, respirations, peak-flow), (f) abdominal assessment (percussion, palpation, auscultation), (g) other clinical assessments (otoscope, urinalysis, glucometer, temperature, ophthalmoscope).
14. Assess and interpret findings from a physical examination that is based on the patient's clinical presentation. This exam can include: (a) palpation, (b) cardiovascular function (including differentiation between normal and abnormal heart sounds, blood pressure, and heart rate), (c) pulmonary function (including differentiating between normal breath sounds, percussion sounds, number and characteristics of respiration, peak expiratory flow), (d) gastrointestinal function (including differentiating between normal and abnormal bowel sounds), (e) genitourinary function (urinalysis), (f) ocular function (vision, ophthalmoscope), (g) function of the ear, nose, and throat (including otoscopic evaluation), (h) dermatological assessment, (i) other assessments (glucometer, temperature).
15. Determine when the findings of an examination warrant referral of the patient.
16. Describe current setting-specific (e.g., high school, college) and activity-specific rules and guidelines for managing injuries and illnesses.
17. Explain the role of evidence in the clinical decision making process.
18. Determine the effectiveness and efficacy of an athletic training intervention utilizing evidence-based practice concepts.
19. Describe the role of the athletic trainer and the delivery of athletic training services within the contact of the broader healthcare system.
20. Describe federal and state infection control regulations and guidelines including universal precautions as mandated by the Occupational Safety and Health Administration (OSHA), for the prevention, exposure, and control of infectious diseases and discuss how they apply to the practicing of athletic training.
21. Develop specific plans of care for common potential emergent conditions (e.g., asthma attack, diabetic emergency).
22. Describe a plan to access appropriate medical assistance on disease control, notify medical authorities, and prevent disease epidemics.
23. Describe the role and function of various healthcare providers and protocols that govern the referral of patients to these professionals.
24. Differentiate among the preparation, scope of practice, and roles and responsibilities of healthcare providers and other professionals with whom athletic trainers interact.
25. Specify when referral of a client/patient to another healthcare provider is warranted and formulate and implement strategies to facilitate that referral.
26. Develop healthcare educational programming specific to the target audience (e.g., clients/patients, healthcare personnel, administrators, parents, general public).
27. Identify modifiable/non-modifiable risk factors and mechanisms for injury and illness.
28. Explain the precautions and risk factors associated with physical activity in persons with common congenital and acquired abnormalities, disabilities, and disease.

29. Use a glucometer to monitor blood glucose levels, determine participation status, and make referral decisions.

30. Explain the etiology and prevention guidelines associated with the leading causes of sudden death during physical activity, including but not limited to: (a) cardiac arrest, (b) asthma, (c) traumatic brain injury, (d) hyponatremia, (e) exertional sickling, (f) anaphylactic shock.

31. Identify which therapeutic drugs, supplements, and performance-enhancing substances are banned by sport and/or workplace organizations in order to properly advise clients/patients about possible disqualification and other consequences.

32. Identify and describe the basic signs and symptoms of mental health disorders (eg psychosis, neurosis, sub-clinical mood disturbances such as depression and anxiety), and personal/social conflict (eg adjustment to injury, family problems, academic or emotional stress, personal assault or abuse, sexual assault or harassment) that may indicate the need for referral to a mental healthcare professional.

33. Differentiate between palliative and primary pain-control interventions.

34. Compare and contrast the variations in the physiological response to injury and healing across the lifespan.

35. Explain the theory and principles relating to expected physiological response(s) during and following therapeutic interventions.

36. Design therapeutic interventions to meet specific treatment goals.
   a. Assess the patient to identify indications, contraindications, and precautions applicable to the intended intervention.
   b. Position and prepare the patient for various therapeutic interventions.
   c. Describe the expected effects and potential adverse reactions to the patient.
   d. Apply the intervention, using parameters appropriate to the intended outcome.
   e. Reassess the patient to determine the immediate impact of the intervention.

37. Use the results of on-going clinical examinations to determine when a therapeutic intervention should be progressed, regressed, or discontinued.

38. 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.

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

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

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

42. 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.

43. 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.

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

45. 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.
46. Describe how common pharmacological agents influence pain and healing and their influence on various therapeutic interventions.

47. 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 condition: asthma, diabetes, hypertension, infections, depression, GERD, allergies, pain, inflammation, and the common cold.

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

Required Texts and Website
- Evolve Student Learning Resources for Cuppett/Walsh Text. Go to: http://evolve.elsevier.com/Cuppett/athlete
- Magnus and Miller. Pharmacology Application in Athletic Training. FA Davis, 2005

Suggested Additional Texts
- Mensch JM, Miller GM. The Athletic Trainers’ Guide to Psychosocial Intervention and Referral. SLACK, Inc. 2008

Evaluation Criteria

<table>
<thead>
<tr>
<th>Examination #1</th>
<th>Examination #2</th>
<th>Examination #3</th>
<th>Quizzes (10 @ 10 points each)</th>
<th>Review of Literature Paper</th>
<th>Total Available Points</th>
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<tbody>
<tr>
<td>100 points</td>
<td>100 points</td>
<td>100 points</td>
<td>100 points</td>
<td>145 points</td>
<td>695 points</td>
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* Quizzes will be unscheduled and most, if not all, quizzes will be administered using OAKS.

Final Grade Calculation
The final grade will be assigned based solely upon the total number of points earned. No other factors will be considered. The grade will be assigned according to the following table:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade Earned</th>
<th>Percentage</th>
<th>Grade Earned</th>
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<tr>
<td>90-100 %</td>
<td>A</td>
<td>70-74 %</td>
<td>C</td>
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<td>D</td>
</tr>
<tr>
<td>78-79 %</td>
<td>B-</td>
<td>62-63%</td>
<td>D-</td>
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Details of Evaluation Criteria:

Examinations:
Three written tests covering material presented in this course will be given on the dates provided on the tentative lecture schedule. In addition, one comprehensive final examination will be given on the date assigned by the College of Charleston’s final examination schedule.

Quizzes:
Ten quizzes covering material presented in this course will be given over the course of the semester. All quizzes will be unscheduled and unannounced. Quizzes will be administered at the start of the class period. Students arriving after the quiz has been handed out will not receive additional time to complete the quiz. Students arriving to class after the quiz has been collected will not be provided with the quiz or a make-up quiz, unless written documentation is obtained from the Office of Undergraduate Studies. Throughout the semester, quizzes may be administered on OAKS.

Article Critiques
Each student will select five articles from the current body of articles published in referred journals (in last 10 years) and write a critique of each of the article by following a standard form. The student will receive credit for the quality of the written critique.

Review of the Literature Paper:
A well written, well researched, paper is a requirement of this course. This paper, written on a topic previously approved, must following the format of the Journal of Athletic Training. The format is detailed in the "Guide to Authors" section of the Journal of Athletic Training. Initially, students will submit a detailed outline and reference list for the paper. A draft of the paper must be submitted by the due date and will be graded based on quality and quantity of content. The final version of the paper will be evaluated based on improvements from the draft version and the overall quality of the paper.

Course Policies

Examination Policy
You will be notified at least one week in advance if there is a change in a test date. Please note that if you miss a scheduled examination you will earn zero (0) points for that particular examination. No make-up examinations will be given for a missed examination. If extreme, unpreventable and unpredictable circumstances prevent you from attending an examination you should contact the course instructor as soon as possible. Consideration will be given on an individual case basis.

If you know you will be unable to attend an examination due to an excused absence (ie: athletic participation, professional conference, etc.) you must notify the instructor at least ten days prior to the absence.

Late Work Policy
All assigned work should be turned in at the beginning of class on the respective due date. Work submitted past this time (even on the due date) will have 20 percent of the total available points deducted for each calendar day, including weekend and holiday days.
**Required Technology**
1. Internet
2. OAKS
3. Microsoft Powerpoint
4. Microsoft Word

All the technology listed above can be accessed in the College of Charleston computer labs throughout campus. If you do not know how to use any of these computer applications you should arrange an appointment with the course instructor for tutoring.

**Attendance**
You are expected to attend all lectures and laboratory meetings. If extreme circumstances necessitate an absence you will be held responsible for the class material covered during your absence. Quizzes missed due to unexcused absences will not be re-administered. YOU ARE RESPONSIBLE FOR ALL INFORMATION COVERED AND REFERRED TO IN CLASS. If you know you will be missing a class it is your responsibility to make arrangements with the instructor in advance of the missed class.

**Personal Electronic Devices**
Personal electronic devices such as cell phones and other electronic devices are not permitted in class. Students needing to bring such devices to class must be sure the device is TURNED OFF (not set to vibrate) and secured inside a book-bag, purse, or pocket for the entire class time. Students using personal electronic devices during class time will be asked to leave the classroom for the remainder of the class meeting time.

**Disability Statement**
If there is a student in this class who has a documented disability and has been approved to receive accommodations through SNAP Services, the student should please feel free to come and discuss this with me during my office hours.

**Honor Code and Academic Integrity**
It is expected that each student in this class will conduct him or herself within the guidelines of the honor system. All academic work should be done with the highest level of honor and integrity that this institution demands. Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students can find the complete Honor Code and all related processes in the Student Handbook at [http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php](http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php)