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ATEP 544.01: Assessment of the Upper Extremity

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Moore, Jessica L., "ATEP 544.01: Assessment of the Upper Extremity" (2014). *Syllabi*. 2494.
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ATEP 544 ASSESSMENT OF THE UPPER EXTREMITY

Instructors: Jessica Moore MEd, ATC, LAT, PES

Semester: Spring 2014

Campus: U of MT - Missoula

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E-mail: Jessica.moore@mso.umt.edu

Credit Hours: 3

Course Meeting: *MCG235* Tuesday and Thursday 11:10am-1:00pm

Course Prerequisites: Professional ATEP Student

Textbooks and Readings:

Required:

Starkey, C., Brown, S.D., Ryan, J. (2010). *Examination of Orthopedic and Athletic Injuries* (3rd Ed.). Philadelphia, PA: F.A.-Davis Company.

Starkey, C., Brown, S.D., Ryan, J. (2010). *Orthopedic and Athletic Injury Examination Handbook* (2nd Ed.). Philadelphia, PA: F.A.-Davis Company.

Kendall, F.P., McCreary, E.K., Provance, P.G., Rodgers, M.I., Romani, W.A. (2005). *Muscles: Testing and Function* (5th Ed.). Baltimore, MD: Lippincott Williams & Wilkins.

Recommended:

Biel, A. (2010). *Trail Guide to the Body: A hands on guide to locating muscles, bones, and more* (4th Ed.). Boulder, CO: Books of Discovery.

Biel, A. (2010). *Trail Guide to the Body: Student workbook* (4th Ed.). Boulder, CO: Books of Discovery.

Biel, A. (2010). *Trail Guide to the Body: Flashcards Vol. 1 & 2* (4th Ed.). Boulder, CO: Books of Discovery.

Teaching Methodology: The primary method of instruction will be through lecture and discussion. The lectures and discussions will be supplemented by the laboratory portion as they pertain to the development of skills necessary to perform evaluations of athletic injuries of the upper extremity.

Lecture Objectives: at the completion of the course, the student should be able to:

1. Define terminology pertinent to anatomical positions, motions, and sites related to the upper extremity, cervical spine, head, and face.
2. Explain physiological properties of specific tissues (i.e., muscles, tendons, cartilage, bone & nerves), and what impact these properties have on trauma and healing

3. Define the components and demonstrate a primary & secondary survey used for injury assessment.
4. Design a consistent assessment protocol for evaluating the upper extremity, cervical spine, head, and face.
5. Acquire the ability to consistently explain assessment findings at both the professional and patient level.
6. Identify and describe the common mechanisms, pathologies, signs and symptoms of sport-related injuries of the upper extremity, cervical spine, head, and face.
7. Describe normal motions and positions of the upper extremity during overhand throwing or pitching motions
8. Correctly identify and use common medical terminology and abbreviations.

9. Identify and palpate bony landmarks & soft tissue structures of the upper extremity, cervical spine, head, and face.
10. Describe and demonstrate skill in performing appropriate range of motion tests, manual muscle testing, neurological assessments and special tests for upper extremity, cervical spine, head, and face injuries.
11. SEE SPECIFIC CAATE EDUCATIONAL COMPETENCIES & CLINICAL PROFICIENCIES.

Lab Objectives: at the completion of the course, the student should be able to:

1. Students will be able to perform manipulative and motor skills necessary to perform a comprehensive injury evaluation of the musculoskeletal system.
2. Students will be able to interpret the results of the injury evaluation and make appropriate decisions, actions and medical referrals.
3. Students will be able to objectively measure, muscular strength, girth and other measurements as determined for each anatomical structure.
4. Identify voluntary muscular movement including proximal to distal attachments of muscles, major motions and functions, and peripheral and segmental nerve innervations in the upper extremity, cervical spine, head, and face.
5. Demonstrate neurological assessment procedures.
6. Students will be able to identify indications and contraindications as they relate athletic participation regarding general medical conditions/illnesses and systemic diseases.
7. Demonstrate techniques and procedures for evaluating common injuries.
8. Demonstrate neurological assessment procedures.
9. Demonstrate special tests used to evaluate injuries to the upper extremity, cervical spine, head, and face.

Evaluation of Student Outcomes:

Upper Extremity Research Paper and Presentation: The subject of each research project will be of each student's choosing, but should focus on upper extremity pathology or illness. The research paper should address mechanism of injury, evaluation and diagnostic techniques, current treatment algorithms, and surgical and nonsurgical interventions. The organization, format, and content of each project should be similar to an article in a medical or health care journal adhering to current AMA style. The paper should be 8-10 double-spaced (12-point) word-processed pages, excluding references. The oral presentation will be 20-30 minutes in length and should address the topics outlined in your paper. You will submit your research paper on the day of your presentation along with an electronic copy. Choose a topic that will actively engage you in the research and writing process.

Injury/Illness Review of Literature: You will be required to select an upper extremity pathology and conduct a current review of the literature to focus on: a brief overview of etiology/mechanism of injury, and specifically on current evaluative techniques and the sensitivity/specificity of those techniques in diagnosing the pathology. This should focus on range of motion assessment, joint stability tests, special tests, and diagnostic techniques. You will present your findings in a 7-10 minute oral presentation during the appropriate assessment unit.

Suggested Topics include:

Brachial Plexus Injury	Thoracic Outlet Syndrome
Cervical Spine Fracture	Suprascapular Nerve Pathology
Long Thoracic Nerve Pathology	Scapholunate Subluxation
Bankhart Lesion	Bicipital Tendinosis
Ulnar Nerve Entrapment	Ulnar Collateral Ligament - Elbow
Scaphoid Fracture	TFCC Tear

Oral Practical Examinations: Practical exams are intended to assess each student's ability to perform the skills associated with the assessment of injuries to the upper extremity, as well as the cervical spine, head, and face. Practical exams will test the performance of skills in the context of completing all or part of an injury evaluation while progressing through the athletic training education program.

Assignments: Assignments will be given throughout the semester. It is the student's responsibility to complete and submit by the deadline to receive full credit for completion of the assignment. Assignments received late will not be given full credit.

Participation: All students are expected to read and be prepared for class daily. Active participation in class discussions and activities is highly encouraged.

Attendance: Attendance is required. You will be allowed 2 unexcused absences, after which unexcused absences will result in a loss of 3% off the final grade for each incident. Three tardy arrivals to class will amount to 1 unexcused absence. As this class is directly involved in the daily workings of the University of Montana Athletic Training facility, it is understood that students may be required to miss class for team travel. This is excused, provided prior notification is given.

Content and Organization:

Injury evaluation process, pathology and nomenclature of injuries to the Upper Extremities, Cervical Spine, Head, and Face

Specific Body Part Evaluations:

- Anatomy
- Mechanism of Injury
- Observation Techniques
- Palpation of Surface Anatomy
- Ranges of Motion (AROM, MMT, PROM)
- Manual Muscle Testing
- Special Tests
- Kinetic Chain
- Advanced Diagnostic Tools
- Pathology
- Immediate Care of Injuries
- Referral
- Implications for return to sport

Grading Scale:

A = 93.50 – 100.00	A- = 90.00 – 93.49	
B+ = 87.50 – 89.99	B = 83.50 – 87.49	B- = 80.00 – 83.49
C+ = 77.50 – 79.99	C = 73.50 – 77.49	C- = 70.00 – 73.49
D = 65.00 – 69.99	F = < 65 %	

**All course requirements must be completed with a grade of C or better to successfully complete this course.

Course Evaluation:

Assignments	10%
Pathology Review of Literature	5%
Upper Extremity Research Paper and Presentation	10%
Exam 1 and Practical 1	20%
Exam 2 and Practical 2	20%
Exam 3	15%
Exam 4 and Practical 3	<u>20%</u>
	100%

Americans with Disabilities Act (ADA) The University of Montana upholds the ADA by providing reasonable accommodations to individuals with disabilities. If any student requires reasonable accommodations to adequately perform the duties of the class, please see the instructor as soon as possible so a plan can be made for specific modifications.






Student Conduct Code: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at:











































<http://www.umt.edu/SA/VPSA/index.cfm/page/1321>

















EMERGENCY PREPAREDNESS AND RESPONSE

As members of a learning community we all have responsibilities for each other that extend beyond the teaching/learning experience and transcend our roles in that dimension. We are, as human beings, responsible for the protection and well-being of other members of our group, and one dimension of our individual and group responsibility in that area relates to how we prepare for, and respond to, emergencies. Toward that end, the following are important:

- In the event we need to evacuate the building, our primary route will be through the main doors to McGill Hall located on the west side of the building. If that route is blocked, our secondary route will be through the east door located toward the north end of this wing of the building.
- If you hear an alarm or are told to evacuate, always assume the emergency is real. Be sure to take coats, backpacks and valuables since the building may be closed for some time.
- Everyone should report to either the designated outdoor rally point or the indoor rally point (should conditions make it necessary to seek shelter in another building). Our outdoor rally point is in the area to the west of McGill Hall – at least 300 feet from the building exit. Our indoor rally point is in the Adams Center Lobby. We should reconvene as a group at the rally point so we can determine if anyone is missing.
- Do not use elevators as a means of evacuating, and do not use cell phones until safely away from the building.
- As the instructor of this course, I would ask students who feel they may require assistance in evacuating to privately inform me of that need. Together we will preplan appropriate assistance.
- I would also request that students with a medical condition that could present an emergency privately inform me of that situation. Again, this notification is so we can preplan an appropriate response should an emergency occur.
- As soon as the class roster stabilizes, I will route a sign-up sheet for students to identify whether or not they possess current first aid and/or CPR certification. This information will be passed on to the Facility Emergency Coordinator for use should a need for first aid expertise arise.

ATEP 544 - Assessment of UE			
Code	Description	Instructed	Evaluated
AC-34	Explain the importance of monitoring a patient following a head injury, ... including the role of obtaining clearance from a physician before further patient participation.		
AC-36b	brain injury including concussion, subdural and epidural hematomas, ... second impact syndrome and skull fracture		
AC-36c	cervical, thoracic, and lumbar spine trauma		
AC-43	Instruct the patient in home care and self-treatment plans for acute ... conditions.		
CE-3	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.		
CE-4	Describe the principles and concepts of body movement, including normal ... osteokinematics and arthrokinematics.		
CE-5	Describe the influence of pathomechanics on function.		
CE-6	Describe the basic principles of diagnostic imaging and testing and their ... role in the diagnostic process.		
CE-7	Identify the patient's participation restrictions (disabilities) and ... activity limitations (functional limitations) to determine the impact of the condition on the patient's life.		
CE-8	Explain the role and importance of functional outcome measures in ... clinical practice and patient health-related quality of life.		
CE-9	Identify functional and patient-centered quality of life outcome measures ... appropriate for use in athletic training practice.		
CE-10	Explain diagnostic accuracy concepts including reliability, sensitivity, ... specificity, likelihood ratios, prediction values, and pre-test and post-test probabilities in the selection and interpretation of physical examination and diagnostic procedures.		
CE-11	Explain the creation of clinical prediction rules in the diagnosis and ... prognosis of various clinical conditions.		
CE-12	Apply clinical prediction rules (eg, Ottawa Ankle Rules) during clinical ... examination procedures.		
CE-13	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.		
CE-15	Demonstrate the ability to modify the diagnostic examination process ... according to the demands of the situation and patient responses.		
CE-16	Recognize the signs and symptoms of catastrophic and emergent conditions ... and demonstrate appropriate referral decisions.		

CE-17	Use clinical reasoning skills to formulate an appropriate clinical ... diagnosis for common illness/disease and orthopedic injuries/conditions.		
CE-18	Incorporate the concept of differential diagnosis into the examination ... process.		
CE-19	Determine criteria and make decisions regarding return to activity and/or ... sports participation based on the patient's current status.		
CE-20	Use standard techniques and procedures for the clinical examination of ... common injuries, conditions, illnesses, and diseases including, but not limited to:		
CE-20a	history taking		
CE-20b	inspection/observation		
CE-20c	palpation		
CE-20d	functional assessment		
CE-20e	selective tissue testing techniques / special tests		
CE-20f	neurological assessments (sensory, motor, reflexes, balance, cognitive ... function)		
CE-21	Assess and interpret findings from a physical examination that is based ... on the patient's clinical presentation. This exam can include:		
CE-21a	Assessment of posture, gait, and movement patterns		
CE-21b	Palpation		
CE-21c	Muscle function assessment		
CE-21d	Assessment of quantity and quality of osteokinematic joint motion		
CE-21e	Capsular and ligamentous stress testing		
CE-21f	Joint play (arthrokinematics)		
CE-21g	Selective tissue examination techniques / special tests		
CE-21h	Neurologic function (sensory, motor, reflexes, balance, cognition)		
CE-22	Determine when the findings of an examination warrant referral of the ... patient.		
EBP-11	Explain the theoretical foundation of clinical outcomes assessment (eg, ... disablement, health-related quality of life) and describe common methods of outcomes assessment in athletic training clinical practice (generic, disease-specific, region-specific, and dimension-specific outcomes instruments).		
EBP-12	Describe the types of outcomes measures for clinical practice ... (patient-based and clinician-based) as well as types of evidence that are gathered through outcomes assessment (patient-oriented evidence versus disease-oriented evidence).		

EBP-13	Understand the methods of assessing patient status and progress (eg, ... global rating of change, minimal clinically important difference, minimal detectable difference) with clinical outcomes assessments.		
EBP-14	Apply and interpret clinical outcomes to assess patient status, progress, ... and change using psychometrically sound outcome instruments.		
PHP-2	Identify and describe the measures used to monitor injury prevention ... strategies (eg, injury rates and risk, relative risks, odds ratios, risk differences, numbers needed to treat/harm).		
PHP-3	Identify modifiable/non-modifiable risk factors and mechanisms for injury ... and illness.		
PHP-4	Explain how the effectiveness of a prevention strategy can be assessed ... using clinical outcomes, surveillance, or evaluation data.		
PHP-6	Summarize the epidemiology data related to the risk of injury and illness ... associated with participation in physical activity.		
PHP-17c	Traumatic brain injury		
PHP-17h	Cervical spine injury		
TI-7	Identify patient- and clinician-oriented outcomes measures commonly used ... to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan.	