



12/2009

College of Life Sciences

## Department of Exercise Sciences



### ExSc 668 Orthopaedic Anatomy Winter 2010

**Course Instructor:** J. W. (Bill) Myrer Ph.D. **Office:** 120G RB **Phone:** 801-422-2690  
**Office Hours:** M & W 10:00 a.m. to noon and F 10:00–11:00 a.m. and by appointment

**Credit Hours** 4

**Class meets in 278 SFH 9:00 to 9:50 a.m. The lab portion of the class meets once a week on Wednesday from 2:00 to 3:50 pm in 278 SFH. Students will be expected to put in extra study and dissection time in the laboratory, at least 2 hrs. for every in class hr.**

#### Required Texts

*Clinically Oriented Anatomy*, Moore KL. 5<sup>th</sup> ed., Philadelphia: Lippincott Williams & Wilkins, 2006.  
*Grant's Dissector*, Tank PW, 13<sup>th</sup> ed., Philadelphia: Lippincott Williams & Wilkins, 2005.

**Plus - Assigned Readings from other sources found in the SFH Learning Resource Center.**

It is **highly recommended** that students buy or have available for their use at least one of the following Reference Texts:

1. *McMinn's Color Atlas of Human Anatomy*, Abrahams PH, Marks SC Jr., and Hutchings RT. 5<sup>th</sup> ed., London: Mosby, 2003
2. *Human Anatomy*, Gosling JA, Harris PF, Whitmore I, & Willan PLT. 4<sup>th</sup> ed. Edinburgh: Mosby; 2002.
3. *Atlas of Human Anatomy*, Netter FH, 4<sup>th</sup> ed., W. B. Saunders, 2006.
4. *Color Atlas of Anatomy*, Yokochi C, Lutjen-Drecoll E, Rohen JW. 6<sup>th</sup> ed., Philadelphia: Lippincott Williams & Wilkins, 2006.
5. *Gray's Anatomy*. Gray H, 29<sup>th</sup> American ed. Philadelphia: Lea and Febiger, 1973.
6. *Photographic Atlas of the Human Body*. Vidic B and Suarez FR. Toronto: The C.V. Mosby Company, 1984.
7. *Functional & Clinical Anatomy*, McMinn RMH, Gaddum-Rosse P, Hutchings RT and Logan BM, London: Mosby, 1995.
8. *The Extremities Muscles and Motor Points*, Warfel JH, Philadelphia: Lea & Febiger, 1993
9. *Human Anatomy*. Van De Graaff KA, 3<sup>rd</sup> ed. Dubuque, Iowa: Wm. C. Brown Publishers, 1992.

#### Purpose of the Course

This course is designed to provide students an opportunity to acquire a deeper knowledge and understanding of the structure and function of human anatomy related specifically to the etiology, recognition, evaluation and rehabilitation of athletic injuries and orthopaedic impairments. Emphasis will be placed on the skeletal, articular, muscular, vascular, and nervous systems' contribution to movement. A regional approach will be taken to obtain a more integrated understanding of each anatomical area studied, i.e. hip, shoulder, knee, etc.

#### Teaching Techniques

1. Cadaver Lab: The study of the human body is the foundation of our knowledge of human anatomy and is still the best way to acquire this knowledge. A primary focus of the course will be cadaver dissection. The laboratory experience will consist of both guided instruction and independent dissection time. Students will be responsible for the dissection and identification to the rest of the class of the "Structures To Identify" provided by the instructor for the region they chose. i.e. back and posterior neck, hip and thigh, shoulder and upper arm, etc.

- PowerPoint presentations, demonstrations, assigned readings from texts and peer reviewed journals and questioning by the instructor.
- Group discussion on material covered in readings and class instruction.
- Laboratory examinations, quizzes and written examinations.

#### TENTATIVE BREAKDOWN OF GRADES

**Total points possible = 900**

A	833 >	B	747 - 773	C	666 - 692	D	576 - 602
A-	797 - 832	B-	720 - 746	C-	630 - 665	D-	540 - 575
B+	774 - 796	C+	693 - 719	D+	603 - 629	E	<540

#### Grading Procedure

- Cadaver Lab* - 250 points
  - 2 Tag Tests -
 

Lower Extremity	<b>March 10, 2:00 - 3:00 pm</b>	100 points
Trunk and Upper Extremity	<b>April 7, 2:50 - 3:50 pm</b>	100 points
  - Dissection Log - see below 50 points
- Lecture Exams* - 400 points
 

Introduction	<b>Feb. 3 and 4</b>	100 points
Lower Limb	<b>Feb. 24 and 25</b>	100 points
Upper Limb	<b>Mar. 24 and 25</b>	100 points
Thorax and Neck	<b>April 20, 2:30 pm in class</b>	100 points
- Quizzes* on material covered in class and reading assignments - 150 points

Quizzes are to be taken on the assigned day at the Learning Resource Center of the Smith Field House. Quizzes taken late are subject to a **5 point per day penalty**. *Quizzes will receive a 0 if taken more than 3 days late.*

- Written Assignment** - 100 points

#### Context

*The Importance and Function Writing Plays in this Discipline*

Good writing is essential to every discipline. Good writing produces effective communication between the writer and the reader. The hallmarks of effective scholarly communication include content, structure, and clarity of presentation. While these traits are present across all disciplines each discipline has its own "language" and style. Each discipline's peculiar language and style has been accepted as the proper and effective mode of communication for that discipline. It has evolved over time and continues to change. Learning the mode of communication peculiar to his or her discipline is perhaps as important to the future success of the student as is his/her mastery of the content of the discipline.

The major function of writing in our discipline is the dissemination of information. The primary vehicles for this dissemination remains peer reviewed journal manuscripts, chapters in books, textbooks, and presentations at scholarly meetings. The most common types of articles appearing in the journals of our discipline are: literature reviews, case reports, clinical techniques, and most commonly original research.

The exact organization of the manuscript and referencing style varies from journal to journal but the general format and method of presentation is fairly standard. Perhaps the most important element is that the writing is presented clearly, succinctly, and in a logical order. The writing style is concise and direct. Extra words are eliminated and redundancy is avoided. When mentioning other research, facts are emphasized rather than who did the research.

*How Writing Can Help You do Better in this Class and in Your Future Profession*

Informal writing can be a powerful tool in the learning process. Writing assignments, such as journals or log entries, summarizing chapters, explaining concepts, answering questions, making outlines, etc. engage you as a student and make you active participants in the learning process. Your ability to

synthesize the ideas of others, master the content and vocabulary of the discipline, be better creative and analytical thinkers, and raise grades have all been attributed to the infusion of formal and informal writing both in and out of the classroom.

Not only do the abilities spoken of above reap almost immediate benefits for you in the acquisition of better grades, but the ability to communicate effectively in both the spoken and the written word have much to do with your future success. Indeed, it has been indicated that these abilities are often more critical in determining the success of individuals in their chosen profession than is the level of competency they have in the subject matter of their profession.

In conclusion, writing does matter. For these reasons the writing assignment in this class will be treated very seriously.

#### **Purposes -**

1. To provide students with an opportunity to become more familiar with the refereed journals of the discipline.
2. To provide students an opportunity to further refine their skills of finding the main ideas of an article and effectively summarizing them.
3. To provide students with an opportunity to be able to synthesize the work of several authors and be able to authoritatively analyze the relative (worth) reliability and validity of another author's work.
4. To provide students an opportunity to do personal research in an area of interest relative to their future profession (i.e. the prevention, assessment, immediate management, and/or rehabilitation of an athletic injury or orthopaedic condition which **explores the relationship and importance of anatomy to the area of interest.**

#### **Audience -**

The assignment should be written as if it were to be read by those familiar with refereed journals of the discipline.

#### **Organization -**

After being assigned an area of the body to dissect and lead class discussion on, as indicated in the class schedule above, each student is required to write a 15 page double spaced typed review of literature paper on a topic pertinent to the area of the body their group dissected in an area of interest relative to their future profession.

This assignment should include in this order:

1. An introduction establishes the purpose or thesis statement of the paper. The introduction should also present a justification or rationale for doing the paper on the topic chosen.
2. The body of the paper establishes the importance of anatomy or a knowledge of anatomy in the prevention, assessment, immediate management, and/or rehabilitation of an athletic injury or orthopaedic condition which you are discussing.
3. The conclusion summarizes the major points of your paper and makes appropriate concluding remarks. i.e. directions of future research, treatment, etc.

**\*\*\* It is highly recommended that you take advantage of the services of the Reading and Writing Center early on and throughout the completion of this assignment. They are located at room B106 JFSB. Hours: M,W,F 10 am - 4 pm; T 12 pm - 6 pm; Th 10 am - 6 pm**

#### **Hints to Preparing Your Written Assignment \*\* All topics must be pre-approved by Dr. Myrer**

1. Pick a topic in which you are interested.
2. Delimit your topic as much as possible. I don't want broad generalities or a regurgitation of a text.
- 3.\* The majority of your information should come from current periodicals. (1999–Present)
4. **Start EARLY!** If you wait until a week before the due date, the journals you want won't be in the library. YOU PROBABLY WILL HAVE TO USE INTER-LIBRARY LOAN.
5. Papers must be typed, double-spaced; untyped papers will not be accepted.
6. Papers are **due Friday, April 2, in class.** *\*\*Late papers will lose 10 points per day late.*
7. Papers will not be returned; if you want to keep a copy, you must make your own.
8. Papers must be properly referenced according to the format used by the *Journal of Athletic Training*.

9. Plagiarism is against the University Honor Code and will not be tolerated. If intentional plagiarism is detected the student will receive an automatic F for the course.

Examples of how the *Journal of Athletic Training* references:

\*\*\* References are listed at the end of the article according to the author in the order they appear in your paper, **NOT ALPHABETICAL**.

1. Mitchell RI, Carmen GM. Results of a multi-center trial using an intensive active exercise program for the treatment of acute soft tissue and back injuries. *Spine*. 2001;19:514-521.
2. Lindstrom I, Ohlund C, Eek C, et al. The effect of graded activity on patients with sub-acute low back pain: a randomized prospective clinical study with an operant-condition behavioral approach. *Phys Ther*. 1999;77: 279-290.
3. etc.

Authors are given credit by referring to their work by number (This is the article number in your reference list; i.e.,

- a. In addition, back school has been evaluated for patients with acute back pain (i.e., usually pain of less than 4 weeks' duration)<sup>16,22,31</sup> subacute symptoms (i.e., usually pain of 4 to 8 weeks' duration)<sup>5,6,29</sup> and chronic low back (i.e., usually pain of more than 8 weeks' duration).  
17,18,20,23-27,30,32

or by also using their names in the text

- b. For example -- Stankovic and Johnell,<sup>16</sup> in contrast, implemented a back school with 1 session and compared outcomes with those of a group that received exercise.

### Grading of Paper - 100 points total

Format: 10 points

- a. Used format and referencing style of the *Journal of Athletic Training* 5 points
- b. A minimum of 6 articles were used 5 points

Style: 25 points

1. Spelling 5 points
2. Punctuation 5 points
3. Grammar and usage 10 points
4. Typing errors 5 points

Content and Presentation: 65 points

1. Introduction clearly establishes the purpose or thesis of the paper. 5 points
2. Proper use of referencing was used throughout the assignment 10 points
3. Topic was appropriate to the course in subject, size, and level of presentation 5 points
4. Vocabulary and level of explanation was appropriate for the intended audience 5 points
5. Paper shows evidence that the writer has searched thoroughly for available sources 10 points
6. Body of the paper contains a well thought out, clear, logical presentation of the major points of the thesis. 20 points
7. Summary and conclusion adequately summarizes and presents the major findings of the review of literature paper. 10 points

## TENTATIVE Class Schedule - 42 Days

January 4	M	Introduction - Discussion - Assignment of Dissection Project
January 6	W	Anatomical Position, Planes, Terminology
January 8	F	Class Discussion on Skeletal System
January 11	M	Class Discussion on Skeletal System
January 13	W	Class Discussion on Articular System
January 16	F	Class Discussion on Articular System
January 20	W	Class Discussion on Muscular System
January 22	F	Class Discussion on Muscular System
January 25	M	Class Discussion on Peripheral Nervous System
January 27	W	Class Discussion on Peripheral Nervous System
January 29	F	Class Discussion on the Hip and Thigh
February 1	M	Class Discussion on the Hip and Thigh
February 3	W	Class Discussion on the Hip and Thigh
February 5	F	Class Discussion on the Knee and Lower Leg
February 8	M	Class Discussion on the Knee and Lower Leg
February 10	W	Class Discussion on the Knee and Lower Leg
February 12	F	Class Discussion on the Foot and Ankle
February 16	T	Class Discussion on the Foot and Ankle
February 17	W	Class Discussion on the Foot and Ankle
February 19	F	Class Discussion as Needed
February 22	M	Class Discussion on the Shoulder and Upper Arm
February 24	W	Class Discussion on the Shoulder and Upper Arm
February 26	F	Class Discussion on the Shoulder and Upper Arm
March 1	M	Class Discussion on the Shoulder and Upper Arm
March 3	W	Class Discussion on the Elbow and Lower Arm
March 5	F	Class Discussion on the Elbow and Lower Arm
March 8	M	Class Discussion on the Elbow and Lower Arm
March 10	W	Class Discussion on the Wrist and Hand
March 12	F	Class Discussion on the Wrist and Hand
March 15	M	Class Discussion on the Wrist and Hand
March 17	W	Class Discussion as Needed
March 19	F	Class Discussion on the Back and Posterior Neck
March 22	M	Class Discussion on the Back and Posterior Neck
March 24	W	Class Discussion on the Back and Posterior Neck
March 26	F	Class Discussion on the Back and Posterior Neck
March 29	M	Class Discussion on the Back and Posterior Neck
March 31	W	Class Discussion on Chest, Abdomen, and Anterior Neck
April 2	F	Class Discussion on Chest, Abdomen, and Anterior Neck
April 5	M	Class Discussion on Chest, Abdomen, and Anterior Neck
April 7	W	Class Discussion on Chest, Abdomen, and Anterior Neck
April 9	F	Class Discussion on Chest, Abdomen, and Anterior Neck
April 12	M	Class Discussion as Needed

### Dissection Log - 50 points

1. Each student is responsible to keep a dissection log. This log will be a record of your work in the anatomy lab.
2. Entries should record:
  - a) the date and time you spent in the lab dissecting or studying.
  - b) the intended purpose of your time in the lab
  - c) the structures you dissected out and identified
  - d) any irregular or unexpected structures or anomalies which you may have encountered
3. At the end of your log you need to provide a **weekly summary, monthly summary and term summary** of your hours in the Lab *both* class time and out of class time.
4. You also need to provide a **Summary List** of all the structures which you were able to identify from those required to be identified according to your assignment. This will be handed out to the students.
5. Dissection Logs are to be **handed in** to the instructor on **April 13<sup>th</sup>**.

**\*Daily, Weekly and Monthly Dissection Log forms may be picked up at my office. 120G RB. \***

**Example:** Daily entry

January 7, 2009

Time In: 3:35 p.m.

Time Out: 4:15 p.m.

Time in Lab: 40 minutes

Purpose: To work on the brachial plexus. Find the ventral rami, trunks, divisions and cords.

Accomplished: Cleaned the area around the ventral rami and surrounding area. Was able to identify the ventral rami from C5 - T1 and the superior, middle, and inferior trunks and the anterior and posterior divisions of each trunk as well as the lateral, posterior, and medial cords.

**Example:** Weekly entry

Week of January 5 2009

3 class periods - 1 hr. 30 minutes

2 non-class times - 2 hr 15 minutes

Weekly total = 3 hr. 45 min.

**Example:** Monthly entry

Month of January, 2009

6 class periods - 5 hr.

8 non-class times - 10 hr 15 minutes

Monthly total = 15 hr. 15 min.

### **Honor Code Standards**

The first injunction of the BYU Honor Code is the call to "be honest." Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. President David O. McKay taught that "character is the highest aim of education" (*The Aims of a BYU Education*, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university.

Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 801-422-2847 if you have questions about those standards.

### **Preventing Sexual Discrimination or Harassment**

Sexual discrimination or harassment (including student-to-student harassment) is prohibited both by the law and by Brigham Young University policy. If you feel you are being subjected to sexual discrimination or harassment, please bring your concerns to the professor. Alternatively you may contact the Equal Employment Office at 801-422-5895 or 801-367-5689 (24-hours); or contact the Honor Code Office at 801-422-2847.

### **Students with Disabilities**

Brigham Young University is committed to providing a working and learning atmosphere, which reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC) Office (801-422-2767). Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. Services are coordinated with the student and instructor by the UAC Office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures. You should contact the Equal Employment Office at 801-422-5895, D-285 ASB.