

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**OTH 4412 Musculoskeletal Anatomy (5 credit hours)**  
**Spring 2016**

Delivery Format: On-Campus  
 Lecture in HPNP G-301; Lab in CG-07

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Emily Isom ([em1218@ufl.edu](mailto:em1218@ufl.edu)) Room number: HPNP 2169, Office hours: Wednesdays 4-5 PM.

Preferred Course Communications: email

**Prerequisites:** anatomy and physiology

## PURPOSE AND OUTCOME

### Course Overview:

The purpose of this course is to provide the student with lecture and laboratory study of human musculoskeletal anatomy. The course is designed for occupational therapy (OT) and other health science students and will focus on material most pertinent to the practice of OT and other health professions. The emphasis of this course is on a functional understanding of bones, muscles and their innervation and action, as well as on common conditions and injuries to bones, muscles, tendons, and nerves.

### Relation to Program Outcomes:

This course is required for pre-OT students and Post-Baccalaureate students as part of a series of pre-requisite basic science courses. These courses must be taken before entering the UF-MOT program. Additionally, this is an elective course for Senior students in the BHS program.

### Course Objectives and/or Goals

This course partially meets one of the Education Standards for the American Council for the Accreditation of OT Education (ACOTE). The student will:

- B.1.4 Demonstrate knowledge and understanding of the structure and function of the human body to include the biological and physical sciences. Course content must include, but is not limited to, biology, anatomy, physiology, neuroscience, and kinesiology or biomechanics.

More specifically, the student is expected to perform the following:

1. Define and apply anatomical **terminology**, position, and planes of movement.
2. Identify and name the **bones** of the human body, locate and identify their landmarks, and describe the types, structure and function of bones.
3. Identify the types of **joints** in the human body and their general functional characteristics.
4. Identify and describe the anatomy of **specific joints**, selected ligaments and bursa of the human body.
5. Identify and name the **muscles** of the upper extremity, lower extremity, neck, trunk and face.
6. Identify the bony **origins and insertions** of each of the muscles described in #5.
7. Explain and demonstrate the **action** of each muscle **based on knowledge of its origin and insertion, the joints it crosses, and the direction of its fibers**.
8. Identify the **antagonistic and synergistic muscle actions** in the upper and lower extremities.
9. Name, identify and locate the structures of the major **peripheral nerves** and **nerve plexuses**.
10. Explain and describe the functional changes that occur in movement following **lesions of major nerves** or plexuses.
11. Explain and describe the basic organization of **spinal nerves** for motor innervation of skeletal muscles.

12. Identify the **innervation and corresponding spinal segment of muscles**.
13. Identify and name the nerves and spinal segments which supply **cutaneous sensation** throughout the body.
14. Identify and name the general **arteries, veins** and lymphatics that supply the upper extremity, lower extremity, neck, trunk and head regions.

### Instructional Methods

The students will participate in lecture and laboratory study of specimen & models. Some material will be delivered using blended learning.

### Blended Learning

*What is blended learning and why is it important?*

A Blended Learning class uses a mixture of technology and face-to-face instruction to help you maximize your learning. Knowledge content that, as the instructor, I would have traditionally presented during a live class lecture is instead provided online before the live class takes place. This lets me focus my face-to-face teaching on course activities designed to help you strengthen higher order thinking skills such as critical thinking, problem solving, and collaboration. Competency in these skills is critical for today's health professional.

*What is expected of you?*

You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

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## DESCRIPTION OF COURSE CONTENT

**Topical Outline/Course Schedule:** see the detailed schedule information at the end of this document!

Week	Date(s)	Topic(s)
1	1/5 – 1/7	Introduction and basic information
2	1/12 – 1/14	Osteology and Joints
3	1/19 – 1/21	Pectoral and superficial back muscles
4	1/26 - 1/28	Shoulder region and brachial plexus
5	2/2 - 2/4	Joints of the back and vertebral column; Upper arm muscles
6	2/9 – 2/11	Muscles of the forearm and <b>EXAM 1</b>
7	2/16 – 2/18	Intrinsic hand
8	2/23 – 2/25	Innervation and blood supply of the upper extremity
9	2/29 – 3/4	SPRING BREAK
10	3/8 – 3/10	Thoracic and abdominal muscles, LE osteology and gluteal muscles
11	3/15 – 3/17	Joints: pelvis, hip, knee
12	3/22 – 3/24	Muscles of the thigh and leg; <b>EXAM 2</b>
13	3/29 – 3/31	Intrinsic foot, joints of the leg and foot
14	4/5 – 4/7	Innervation and blood supply of the lower extremity; muscles of deep back
15	4/12 – 4/14	Muscles of the neck, cervical plexus, osteology of the skull
16	4/19 – 4/20	Muscles of the eye, facial expression, mastication, deglutition and TMJ
17	4/25 – 4/29	<b>EXAM 3</b>

## Course Materials and Technology

### A. Required:

1. Required reading materials will be posted on E-learning for every class (noted as S in the syllabus). E-Learning Website: <http://elearning.ufl.edu/>
2. Lab manual (noted as S in the syllabus) must be purchase at Target Copy, either at 1412 W. University Ave. or at Butler Plaza (3422 SW Archer Rd.).
3. Sieg KW & Adams SP: Illustrated Essentials of Musculoskeletal Anatomy (Latest Edition). Gainesville, FL: Megabooks (noted as S&A in the syllabus).
4. Anatomy Atlas (any atlas or see recommended list).
5. TopHat classroom response system will be used in class. You must have access to it. Direct URL: <http://app.tophat.com/e/527357>; The 6-digit course code is: 527357.

### B. Recommended (optional):

1. Moore, K.L, & Agur, A.M.R.: Essential Clinical Anatomy (Latest Edition). Philadelphia, PA: Lippincott Williams & Wilkins.
2. Mosses, KP, Banks JC, Nava PB, Petersen, D. Atlas of Clinical Gross Anatomy (Latest Edition). Spain: Elsevier Mosby.
3. Netter, F. Atlas of Human Anatomy, (Latest Edition). Icon Learning System.
4. Drake R. et al. Gray's Atlas of Anatomy (Latest Edition). Philadelphia, PA: Churchill Livingstone Elsevier.
5. Jones, SA. Pocket Anatomy and Physiology. Philadelphia, PA: F.A Davis, 2008.

For technical support for this class, please contact the UF Help Desk at:

- <http://helpdesk.ufl.edu/>
- (352) 392-HELP (4357) - select option 2
- <https://lss.at.ufl.edu/help.shtml>

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## ACADEMIC REQUIREMENTS AND GRADING

### Assignments

- Quizzes: there is a quiz before each lab and 2-4 online quizzes for a total of 150 points
- Exams: there are 3 exams, each is composed of a lecture exams (60 questions) and a lab exams (30 questions), given in the same week (Wednesday – lab and Thursday-lecture) on the same material. The final exam has more questions: 90 questions for lecture exam and 40 questions for lab exam.

### Grading

Exam	Format	# of questions	Points per question	Points per test	Percent of Grade
Exam 1	Lecture	60	3	180	18
	Lab	30	2	60	6
Exam 2	Lecture	60	3	180	18
	Lab	30	2	60	6
Exam 3 – Final	Lecture	90	3	270	27
	Lab	40	2	80	8
Quizzes	Lab & Lecture	Variable	Variable	150	15
Professional Behavior				20	2
<b>Total</b>				<b>1000</b>	<b>100%</b>

\*Professional points are based on class attendance. For detail see policy on class attendance below.

Point system used (i.e., how do course points translate into letter grades).

<b>Points earned</b>	930-1000	900-929	870-899	830-869	800-869	770-799	700-769	670-699	630-669	600-629	0-599
<b>Letter Grade</b>	A	A-	B+	B	B-	C+	C	D+	D	D-	E

According to college policy, a grade of "C" (700 points or more) is necessary to pass the course for students who take this as a required course!

Letter grade to grade point conversions are fixed by UF and cannot be changed.

<b>Letter Grade</b>	A	A-	B+	B	B-	C+	C	D+	D	D-	E	WF	I	NG	S-U
<b>Grade Points</b>	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at: <http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### Exam Policy

Lecture exams will be administered in the Computer Testing Center in the Communicore Building room CG-27/28. Lab exams will be administered in the lab (Communicore Building room CG-07). You must arrive on time for all exams.

### Policy Related to Make up Exams or Other Work

Makeup exams will not be given without prior arrangements with the Course Instructor. "Prior" means at least one day in advance. Failure to do this will result in a zero grade for that test or assignment. Emergencies have to be documented (such as a medical exemption). Undocumented absence from an exam or an assignment will result in a score of "0" on that assignment. Makeup exams that are given due to authorized absence may be oral exams.

### Policy Related to Required Class Attendance

- Students are expected to attend lecture. A sign-up sheet will be passed around on randomly selected dates. Missing lecture will result in subtracting 2 points per lecture.
- Students must attend lab! Attendance will be taken in each and every lab. Missing a lab will result in subtracting 5 points per missed lab. In addition, the student will lose lab quiz points.
- Missing class or lab without prior arrangements (for definition of "prior" see above) will result in point subtraction as mentioned above. Personal issues regarding attendance or fulfillment of course requirements will be handled on an individual basis.
- All faculty members are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

### Expectations Regarding Course Behavior

1. **Preparation for class:** To maximize the use of class time, you are expected to:
  - Look at E-learning for announcements and get the notes prior to each class.
  - Read and study assigned readings prior to class.
2. **Class behavior:** You are also expected to:
  - Be on time for class
  - Stay until class is dismissed
  - Silence your cellular phone
  - Be courteous by refraining from chatter and other distracting behaviors
  - Do not look at external material during class (newspaper, Facebook, twitter, etc.)

- Arrange with the instructor in advance if you cannot attend class so you can get pertinent handouts and announcements

### Communication Guidelines

Please email the instructors and TAs directly (email addresses are above) rather than using the E-learning. For digital communication expectations see: *Netiquette Guidelines*: <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

### Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

## SUPPORT SERVICES

### Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodations. Students with disabilities should follow this procedure as early as possible in the semester.

### Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.

- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:  
Alachua County Crisis Center  
(352) 264-6789  
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

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[The detailed class schedule is on the next page](#)

**CLASS SCHEDULE**

	<u>Day</u>	<u>Time</u>	<u>Location</u>
<u>Lecture:</u>	Tuesdays	10:40-12:35	G-301
	Thursdays	10:40-11:30	G-301
<u>Lab:</u>	Wednesdays	9:35-11:30, 11:45-1:40, 1:55-3:50	CG-07 (HSC)

\*\*\* NOTE: this is a tentative schedule

Date	Topic	Page #
<b><u>WEEK 1</u></b>		
<b>Tues 1/5 Lect.</b>	1. Introduction to the course, course requirements, lab procedures, supplies	Syllabus
	2. Introduction to the musculoskeletal system and anatomical terminology	S: Ch 1
<b>Wed 1/6 Lect. Online Lecture</b>	3. Basic tissues and structures of the body	S: Ch 2
<b>Thu 1/7 Lect.</b>	1. Basic tissues and structures of the body (cont.)	S: Ch 2
<b><u>WEEK 2</u></b>		
<b>Tue 1/12 Lect.</b>	1. Introduction to Osteology	S: Ch 3
	2. Osteology: Scapula, Clavicle, Vertebrae, Sternum, Ribs, Humerus, radius, ulna, hand	S: Ch 5
<b>Wed 1/13 Lab 1 Room G-301A</b>	Introduction to the lab. Osteology: Vertebrae, scapula, clavicle, sternum, ribs, humerus, radius, ulna, carpal bones, metacarpals, phalanges	S: Ch 5, S&A: 3-8
<b>Thu 1/14 Lect.</b>	1. Joint classification	S: Ch 4, S&A: pp. 3-8
<b><u>WEEK 3</u></b>		
<b>Tue 1/19 Lect.</b>	1. Muscles of the shoulder region: superficial back	S: Ch 8, S&A 11-21
	2. Muscles of the shoulder region: pectoral muscles	S: Ch 8, S&A: 22-24
<b>Wed 1/20 Lab 2</b>	1. Muscles of the superficial back and pectoral region	S&A: 11-24
<b>Thu 1/21 Lect.</b>	1. Axilla and Brachial plexus anatomy	S: Ch 9a, S&A: 73
<b><u>WEEK 4</u></b>		
<b>Tue 1/26 Lect.</b>	1. Muscles of the arm	S: Ch 10, S&A: 25-28
	2. Joints of the shoulder girdle	Ch 7
<b>Wed 1/27 Lab 3</b>	1. Brachial plexus and muscles of the arm	S&A: 25-28, 73
<b>Thu 1/28 Lect.</b>	1. Joints of the shoulder girdle	S: Ch 7

Date	Topic	Page #
<b>WEEK 5</b>		
Tue 2/2 Lect.	1. Brachial Plexus Injuries 2. Joints of the back and the vertebral column	S: Ch 9b S: Ch 6
Wed 2/3 Lab 4	1. Shoulder joint, 2. Catch up and review for lab exam #1	S: Ch 7
Thu 2/4 Lect.	1. Joints of the back and the vertebral column 2. Catch-up and Review for written exam #1	S: Ch 6
<b>WEEK 6</b>		
Tue 2/9 Lect.	1. Muscles of the forearm 2. Joints of the forearm and hand	S: Ch 12, S&A: 28-45 S: Ch 11, 13
Wed 2/10 Lab 5	<b>Lab Exam #1</b>	
Thu 2/11 Lect.	<b>Lecture Exam #1 in CG-28 (Computer testing Center) from 10:30 to 11:45</b>	S: Ch 1-11
<b>WEEK 7</b>		
Tue 2/16 Lect.	1. Intrinsic hand	S: Ch 14, S&A: 46-57
Wed 2/17 Lab 6	1. Muscles of the forearm, joints of the arm	S: Ch 12, S&A: 28-45
Thu 2/18 Lect.	1. Intrinsic hand (cont.)	S: Ch 14, S&A: 46-57
<b>WEEK 8</b>		
Tue 2/23 Lect.	1. Innervation and dermatomes of the UE 2. Nerve injuries	S: Ch 15, S&A: 73-79 S: Ch 9, 15
Wed 2/24 Lab 7	1. Intrinsic hand, joints of the hand	S: Ch 13,14; S&A: 46-57
Thu 2/25 Lect.	1. Blood supply of the upper extremity	S: Ch 15
<b>WEEK 9</b> <b>2/29-3/4</b>		
<b>SPRING BREAK NO CLASS</b>		
<b>WEEK 10</b>		
Tue 3/8 Lect.	1. Muscles of the thoracic and anterior abdominal wall 2. Osteology: Pelvis, femur, patella, tibia, Fibula, Foot	S: Ch 16, S&A: 141-145 S: Ch 17, S&A: 80-83
Wed 3/9 Lab 8	1. Innervation and blood supply of the UE	S: Ch 15; S&A: 73-79
Thu 3/10 Lect.	1. Muscles of the gluteal region	S: Ch 18, S&A: 86-89



Date	Topic	Page #
<b>WEEK 11</b>		
<b>Tue 3/15 Lect.</b>	1. Joints of the pelvis and the hip	S: Ch 18
	2. Knee joint	S: Ch 20
<b>Wed 3/16 Lab 9</b>	1. Muscles of the thoracic and anterior abdominal wall	S: Ch 16, S&A: 141-146
	2. Osteology of the lower extremity	S: Ch 17, S&A: 80-83
	3. Muscles of the gluteal region	S&A: 86-89
<b>Thu 3/17 Lect.</b>	1. Catch up and review for Exam 2	
<b>WEEK 12</b>		
<b>Tue 3/22 Lect.</b>	1. Muscles of the posterior, anterior and adductor thigh	S: Ch 19, S&A: 90-101
	2. Muscles of the anterior, lateral, and posterior leg	S: Ch 22, S&A: 102-114
<b>Wed 3/23 Lab 10</b>	<b><u>Lab Exam #2</u></b>	
<b>Thu 3/24 Lect.</b>	<b><u>Lecture Exam #2 in CG-28 from 10:30 to 11:45</u></b>	S: Ch 12-18, 21
<b>WEEK 13</b>		
<b>Tue 3/29 Lect.</b>	1. Intrinsic foot	S: Ch 23, S&A: 115-119
<b>Wed 3/30 Lab 11</b>	1. Structures of the thigh	S: Ch 19, S&A: 90-101
	2. Muscles of the posterior, anterior and adductor thigh	
	3. Muscles of the anterior, lateral & posterior leg	S: Ch 22, S&A: 102-114
<b>Thu 3/31 Lect.</b>	1. Joints of the leg and foot	S: Ch 21
<b>WEEK 14</b>		
<b>Tue 4/5 Lect.</b>	1. Cutaneous innervation, dermatomes, nerve injuries	S: Ch 24, S&A: 126-132
	2. Blood and nerve supply to the LE	S: Ch 25, S&A: 126-132
<b>Wed 4/6 Lab 12</b>	1. Muscles of the foot	S: Ch 23, S&A: 115-119
	2. Joints of the lower extremities	S: Ch 21
<b>Thu 4/7 Lect.</b>	1. Muscles of the deep back & the posterior thoracic wall	S: Ch26; S&A:147-151
<b>WEEK 15</b>		
<b>Tue 4/12 Lect.</b>	1. Muscles of the deep back (cont.)	S: Ch 27, S&A: 138-140
	2. Osteology of the skull	S&A: 2
	3. Cervical plexus	S: Ch 27
<b>Wed 4/13 Lab 13</b>	1. Blood and nerve supply to the LE	S:Ch24-25, S&A:126-132
	2. Muscles of the deep back	S: Ch26; S&A:147-151
	3. Muscles of the posterior thoracic wall	S: Ch26; S&A:147-151
<b>Thu 4/14 Lect.</b>	1. Muscles of the anterior and lateral neck	S: Ch 26, S&A: 148-151

Date	Topic	Page #
<b>WEEK 16</b>		
<b>Tue 4/19 Lect.</b>	1. Muscles of facial expression and extra-ocular muscles	S: C 28, S&A: 133-5
	2. Muscles of mastication and muscles of deglutition	S: Ch 28, S&A: 136-137
	3. Temporomandibular joint	S: Ch 28
<b>Wed 4/20 Lab 14</b>	1. Structures and muscles of the neck	S: Ch 27, S&A: 138-140
	2. Muscles of mastication and facial expression	S: C 28, S&A: 133-140
	3. Eye muscles	S: C 28, S&A: 136-137
	4. Osteology of the skull, TMJ	S&A: 2
<b>WEEK 17</b>		
<b>Tuesday 4/26 12:15 to 2:15</b>	<b><u>Exam #3 – Lecture Final Exam</u> in CG-28</b>	Chapters 19-28
<b>Wed. 4/27</b>	<b><u>Exam #3 – Lab Final Exam</u></b>	

\*\*\* NOTE: this is a tentative schedule