



HPHY 274 – Spring 2023

Musculoskeletal Dynamics & Physiology

Department of Human Physiology

Lecture Section 02: TR 12:25 - 1:40 pm, 840HSB 211

Janet Zhang-Lea

Office: 830HSB 327

Zoom Office Link: <https://gonzaga.zoom.us/j/9706245962>

Office Hours: Tuesday 2:00 – 4:00 pm
Friday 10:00 am -12:00 pm
Or by appointment

Email: lea@gonzaga.edu

Phone: (509) 313-4798

Overview

This course is an introduction to the basic principles of kinesiology with emphasis on osteology, arthrology, and the mechanical interactions between the muscles and joints of the body.

Prerequisites: HPHY 205, PHYS 101, PHYS 101L, HPHY 241, HPHY 241L.

Goals

Students will develop a conceptual understanding of the structure and function of joints, muscle, and neuromuscular contributions to human movement. The course will develop further understanding and integration of anatomy, physiology and introductory mechanics.

Student Learning Outcomes

1. Students will have a greater knowledge of skeletal anatomy and physiology and how it dictates human movement.
2. Students will have a greater knowledge of the muscle anatomy and physiology, particularly a greater understanding of how muscles produce force.
3. Students will have a better understanding of the integration of human muscle and skeletal structure with respect to human movement capability.
4. Students will develop the skills to describe human movement and use critical reasoning to determine how specific muscle activity contributes to these movements.

Learning Activities to Support Student Learning Outcomes

- A. Lectures
- B. Class/group discussions
- C. Assigned readings
- D. Researching on specific topics
- E. Problem-based learning

Examinations

In-class presentations

The students will give 2 presentations in-class throughout the semester, with one presentation focused on the upper limb and the torso, and one presentation focused on the lower limb and human movement. The topic of the specific presentation will be randomly assigned to the students. The detailed grading rubrics of the in-class presentation will be available later during the semester.

Participation in Q&A

The students will be expected to ask questions during in-class presentation sessions. Participation of the Q&A session will be counted towards the final grade

Exams

The students will take one mid-term exam and one final exam, which in total account for 40% of their final grade. Exams will be taken at scheduled dates as listed below.

Grading:

In-class presentation (2 * 10% each)	20%
Participation in Q&A (2 * 5% each)	10%
Assignments (3 * 10% each)	30%
Mid-term Exam	20%
Final Exam	20%
<hr/>	
Total	100%

Late Assignments

Assignments are due at the prescribed time. **Late assignments will be subject to a 20 % penalty per day up to two days (40 % penalty). Assignments turned in later than two days (48 hours from due time) will not be accepted.** Just to be clear: a late assignment is one that is not turned in by the due date/time. Anything after that before the 24-hour mark will receive an automatic 20% penalty. Between 24 and 48 hours late will incur a 40% penalty. Please make sure you are planning ahead. Inevitably things happen during the semester which could inhibit your turning an assignment in on time.

Grading Policies: Students should be aware of the following policies as they apply to final grades.

Once submitted, final grades are **FINAL** and will not be changed. The only exception to this policy is if there is an error in the calculation of that final grade. **DO NOT** contact your instructor with requests to change your grade. Requests for grades to be “adjusted” or “bumped” without merit are, in essence, requests to falsify one’s academic transcript. Therefore, asking your

professor for a grade in which you did not earn will be viewed as a violation of Gonzaga's Academic Integrity policy and dealt with in an appropriate manner.

Assignment of Final Grades

>= 92.00	A	73.00 – 76.99	C
90.00 – 91.99	A-	70.00 – 72.99	C-
87.00 – 89.99	B+	67.00 – 69.99	D+
83.00 – 86.99	B	60.00 – 66.99	D
80.00 – 82.99	B-	< 60.00	F
77.00 – 79.99	C+		

Text

While no text will be directly assigned, the following can be helpful for those who have found that reading supports their studying and performance. I will help students find appropriate chapters to connect their reading to the course. Please just contact me for assistance.

Neumann, D.A. (2017) *Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation* (3rd Edition). St. Louis, MO: Mosby, Inc.

R.T. Floyd (2011) *Manual of Structural Kinesiology*, 18th -- edition – 20th edition.

Hamill, Knutzen, Derrick. (2014) *Biomechanical Basis of Human Movement*, 4th edition.

Lecture materials, assignments and the course syllabus are available on Blackboard. Blackboard will also be used for posting class announcements. You should check Blackboard almost daily for announcements or other study helps.

Tentative schedule

1. Jan 19 (R) Introduction
2. Jan 24 (T) Introduction (Assign Presentation #1 topics)
3. Jan 26 (R) Joints
4. Jan 31 (T) Joints
5. Feb 2 (R) Bone
6. Feb 7 (T) Bone (*Assignment #1 Available*)
7. Feb 9 (R) Muscle
8. Feb 14 (T) Muscle
9. Feb 16 (R) Lever and torque
10. Feb 21 (T) Lever and torque (*Assignment #1 Due*)
11. Feb 23 (R) Biomechanical principles
12. Feb 28 (T) Biomechanical principles
13. Mar 2 (R) **Mid-term Exam**
14. Mar 7 (T) Upper limb – Shoulder
15. Mar 9 (R) Upper limb – Shoulder (*Assignment #2 Available*)
16. Mar 14 (T) ----- *Spring break (no class)* -----
17. Mar 16 (R) ----- *Spring break (no class)* -----
18. Mar 21 (T) Upper limb – Elbow
19. Mar 23 (R) **Upper limb presentation – Session 1**
20. Mar 28 (T) Upper limb – Wrist & Hand
21. Mar 30 (R) Upper limb – Wrist & Hand (*Assignment #2 Due*)
22. Apr 4 (T) Torso – Structure and function
23. Apr 6 (R) **Upper limb presentation – Session 2** (Assign Presentation #2 topics)
24. Apr 11 (T) Lower limb – Hip
25. Apr 13 (R) Lower limb – Hip (*Assignment #3 Available*)
26. Apr 18 (T) Lower limb – Knee
27. Apr 20 (R) Lower limb – Knee
28. Apr 25 (T) **Lower limb presentation – Session 1**
29. Apr 27 (R) Lower limb – Ankle & Foot (*Assignment #3 Due*)
30. May 2 (T) Lower limb – Ankle & Foot
31. May 4 (R) **Lower limb presentation – Session 2**

Final exam: May 9th, 3:30 – 5:30 pm

Syllabus Statements

Class Attendance Policy

Gonzaga University presumes that students have sufficient maturity to recognize their responsibility for regular class engagement, and we maintain a general expectation that students will attend courses.

Gonzaga's standard policy on absences applies in this course, that the maximum allowable absence is two class hours (100 minutes) for each class credit. For three-credit classes, the maximum absence is, therefore, six class hours (300 minutes). The grade given for excessive absences is a "V," which has the same effect as "F" (Fail) and is counted in the GPA. This outcome can be appealed to the Dean of the College/School in which the course is offered. Academic support will be provided for students who are impacted by COVID-19 related sickness and periods of quarantine or isolation on a case-by-case basis. Please notify me in-person, via a phone call (5093134798) or email me (lea@gonzaga.edu) if you will miss a class and need academic assistance. **If you will miss an exam, please notify me at least 2 weeks before the date of the exam for me to arrange accommodations.**

Class Recordings

In class sessions will not be recorded. This may change depending on the number of Covid-19 related absences and classroom technology to allow recording. This course may make use of pre-recorded material that will be available to you for each topic in the course. **You may not duplicate or distribute these prerecorded materials.** Your compliance with the terms of this syllabus regarding use of class recordings is subject to the [Student Code of Conduct](#); violations will be reviewed according to the provisions in the [Administration of Student Code of Conduct](#).

Academic Integrity Policy

All members of the Gonzaga community are expected to adhere to principles of honesty and integrity in their academic endeavors, and this course will abide strictly by procedures and guidelines of the University's Academic Integrity Policy, which can be found in full [here](#) or at the [Academic Integrity Policy Resources webpage](#). Students and faculty are governed by this policy. Familiarize yourself with its scope and procedures. Ignorance of the policy shall not serve as a defense against any violations.

Students with Disabilities/Medical Conditions and Accessible Documents (EITA)

The Americans with Disabilities Act is a federal anti-discrimination statute that provides civil rights protection for persons with disabilities and requires that students with disabilities be guaranteed a learning environment that provides reasonable accommodations. As COVID-related challenges persist, students with qualifying disabilities and/or medical conditions, as per [CDC recommendations for higher education](#), are eligible for and may request reasonable accommodations through established procedures. Students should contact the [Disability Access Office](#) to begin the process. In addition, Gonzaga University seeks to provide equal access to electronic content consistent with applicable federal and state laws, such that when possible "Accessible Documents" will be created with the proper formatting tools to maximize

communication of content regardless of what device or adaptive equipment he or she is using; see [Electronic Information Technology Accessibility \(EITA\)](#).

Statement Regarding Course Expectations

As a Jesuit university that seeks to provide an equal opportunity to learn for all students, this course is offered with the expectation that students are here voluntarily, and understand that the university expects all interactions relating to its courses to occur in the context of a professional academic work environment that is welcoming and accessible to all students regardless of gender, race, ethnicity, religion, disability, sexual orientation or identity and any other non-merit factor in educational programs or activities. This environment includes virtual course environments, such as Blackboard, and any course-related communications via e-mail and social media. We strive to create a healthy environment conducive to intellectual honesty and free inquiry; as such, behaviors which constitute harassment, discrimination, or hostile and/or inappropriate conduct will not be tolerated, and faculty, staff and administrators will take action to ensure such matters are addressed promptly and appropriately.

Notice of Non-Discrimination

Gonzaga University does not discriminate against any person on the basis of race, color, religion, national origin, sex, marital status, sexual orientation, gender identity, age, disability, military status, or any characteristic protected by local, state, or federal law, or any other non-merit factor in employment, educational program, or activities that it operates.

Harassment & Discrimination Policy

Consistent with its mission, Gonzaga seeks to assure that all community members learn and work in a welcoming and inclusive environment (please review [Harassment & Discrimination Policy](#)). Title VII, Title IX and Gonzaga's policy prohibit gender-based harassment, discrimination and sexual misconduct, including sexual assault, dating and domestic violence, and stalking. Gonzaga encourages anyone experiencing gender-based harassment, discrimination or sexual misconduct to talk to someone from Gonzaga's reporting and support resources list found here: [Title IX | myGU \(my.gonzaga.edu\)](#).

Resources and Reporting Options for Incidents of Sexual Misconduct

It may be helpful for students to talk about what happened in order to get the support needed and for Gonzaga to respond appropriately. There are options for support and resolution, namely confidential support resources and campus reporting and support options are available [here](#). Gonzaga will respond to all reports of sexual misconduct in order to stop the harassment, discrimination, or misconduct; prevent its reoccurrence; and address its effects. Responses may vary from support service referrals to formal investigations.

Faculty members can connect students to resources on campus, including those who are specially trained in and experienced in assisting in such complaints, and therefore will report all incidents of gender-based harassment, discrimination and sexual misconduct to Title IX to provide the Title IX Director with all relevant details, including names and identifying

information, of the incident reported. A representative from that office will reach out to the student via phone and/or email to explore options for support, safety measures and reporting. For more information about policies and resources or reporting options, please visit the [Equity, Diversity & Inclusion at Gonzaga Webpage](#) and [Title IX](#). To make a report of harassment, discrimination or sexual misconduct directly:

- Contact the Title IX Coordinator by phone, email, or in person:

Stephanie Thomas, Title IX Coordinator, 509-313-6910, thomassn@gonzaga.edu, Business Services Building, Office 18

- Or complete an [online reporting form](#).

Students with Disabilities/Medical Conditions and Accessible Documents (EITA)

The Americans with Disabilities Act is a federal anti-discrimination statute that provides civil rights protection for persons with disabilities and requires that students with disabilities be guaranteed a learning environment that provides reasonable accommodations. As COVID-related challenges persist, students with qualifying disabilities and/or medical conditions, as per [CDC recommendations for higher education](#), are eligible for and may request reasonable accommodations through established procedures. Students should contact the [Disability Access Office](#) to begin the process. In addition, Gonzaga University seeks to provide equal access to electronic content consistent with applicable federal and state laws, such that when possible “Accessible Documents” will be created with the proper formatting tools to maximize communication of content regardless of what device or adaptive equipment he or she is using; see [Electronic Information Technology Accessibility \(EITA\)](#).

FERPA and Privacy

Under [FERPA](#) (Family Educational Rights and Privacy Act), your educational records are confidential and protected. Under most circumstances your records will not be released without your written and signed consent, which must be documented through the Registrar’s Office. Instructors are not allowed to publicly post grades by student name, social security number, GU student identification number, or any other identifiable means, without written consent from the student. The FERPA policy does not apply to third party online applications that may be used in courses such that it is the student’s responsibility to read the privacy documentation at each site.

Course Evaluations

At Gonzaga, we take teaching seriously. We ask our students to evaluate their courses and instructors so that we can improve our classes and programs and provide the best possible learning experience. Near the end of the semester, students will be asked to complete the course/instructor evaluation on-line to provide feedback on their classroom experience (see the [Course Evaluations website](#) for more information). This feedback is important and appreciated.

Diversity, Equity and Inclusion

Our human differences contribute to the richness of our academic community life. In partnership with the [Office of Diversity, Equity & Inclusion](#), we expect everyone to cultivate an academic environment that is welcoming and accessible to students, staff, and instructors

regardless of gender, race, ethnicity, religion, disability, and sexual orientation or identity. The [Bias Incident Assessment and Support \(BIAS\) Team](#) exists to foster a campus environment where everyone feels safe and respected. Those who experience or witness a bias incident should visit the [BIAS Report site](#).

Religious Accommodations for Students

In compliance with Washington State law, Gonzaga University will reasonably accommodate students who, due to the observance of religious holidays, expect to be absent or endure a significant hardship during certain days of their academic course or program. Gonzaga University prohibits discrimination, harassment, and retaliation on the basis of religion. The Religious Accommodations for Students policy as well as the process by which students can request accommodations can be found on the [Academic Policies and Procedures Webpage](#).

Table of associated links for university and academic policy statements that are relevant to classroom learning and syllabi.

University and Academic Policy Statements	Associated Links
Diversity, Equity and Inclusion	Visit Equity, Diversity & Inclusion at Gonzaga Page Bias Incident Assessment and Support (BIAS) Team
Harassment and Discrimination Policy	Harassment & Discrimination Policy Title IX I myGU (my.gonzaga.edu)
Academic Integrity Policy	Visit Academic Integrity Policy Resources Page
Students With Disabilities/Medical Conditions and Accessible Documents (EITA)	Disability Access Office EITA Office
Religious Accommodations for Students	Visit Academic Policies and Procedures Page
FERPA and Privacy	FERPA
Class Attendance Policy	Visit Academic Policies and Procedures Page
* Class Recording Policy (audio, video, and photos)	Visit Academic Policies and Procedures Page GU Student Code of Conduct
Course Evaluations	Accessing and Timing of Course Evaluations