

*University of Oregon Department  
Human Physiology*

**Course Syllabus**

**HPHY 485/585  
GAIT ANALYSIS  
Fall 2005**

**Meets: Room 246 Gerlinger Hall; UH 8:30 - 9:50 AM**

**Instructor:** Dr. Li-Shan Chou

**Office:** 340 Gerlinger Hall

**Office Hours:** UH 10:00 - 12:00AM or by appointment

**Laboratory:** Motion Analysis Lab, Room B52 Gerlinger Annex

**Phone:** 6-3391

**E-Mail:** [chou@uoregon.edu](mailto:chou@uoregon.edu)

**Textbooks:** 1. Perry, J., Gait Analysis: Normal and Pathological Function. SLACK Incorporated, 1992. 2. Materials to be distributed in class

**Prerequisites:** HPHY 381 (undergraduate biomechanics) or equivalent, Fundamental Physics & Linear Algebra

**Blackboard Site:** The majority of information for this course will be conveyed to you via the course blackboard site. Consequently, you should be sure to consult it every day or so. In addition to this syllabus, such things as important announcements, quizzes, lecture handouts, and other materials will be available on the blackboard site.

**Course Description:** Gait analysis is the systematic study of human walking. It provides the potential to determine those impairments and functional limitations that probably contribute to the walking disability. This course attempts to provide students a systematic introduction on this subject, including fundamental terminology, technique, and data interpretation used in gait analysis.

**Course Objectives:** By the completion of this course, students should:

1. Possess a working knowledge of equipment and techniques used in gait analysis.
2. Understand fundamental aspects of three-dimensional joint kinematics & kinetics of the lower extremities during normal walking.
3. Be aware of literature sources related to the field of gait analysis.

**Course Readings:** In addition to the assigned textbook, you are responsible for the assigned readings from the course.

**Attendance at Lectures:** Consistent attendance reflects professional behavior and it is expected students attend class on a regular basis. In the event of an emergency or illness, students should notify the course instructor. Students will be responsible for all information, course content, and schedule changes presented during lectures.

**Laboratory Project:** Purposes of this laboratory project are to familiarize you with procedures needed for performing a gait analysis and data interpretation. A final project presentation to the whole class is required in the 10<sup>th</sup> week. **In addition to the group project presentation, each graduate student is required to submit a written report describing the rationale, method, and findings from the laboratory project.** More details on the projects will be provided in the class.

**Grading Criteria:** There will be two written exams, homework assignments, and project report/presentation. They all will contribute to your final score in the following manner. The following grading system will be used based on the combined scores in each of the assessments above.

<b>Homework Assignments</b>	<b>20%</b>	<b>A</b>	<b>&gt;90%</b>
<b>Exam 1</b>	<b>25%</b>	<b>B</b>	<b>80 - 89%</b>
<b>Exam 2</b>	<b>25%</b>	<b>C</b>	<b>70 - 79%</b>
<b>Project Report/Presentation</b>	<b>30%</b>	<b>D</b>	<b>60 - 69%</b>
		<b>F</b>	<b>&lt; 60%</b>

## Course Outline

### **Week 1: Sep. 26-30**

- Course Overview
- Fundamentals of Gait Analysis (Chapter 1)

### **Week 2: Oct. 3-7**

- Fundamentals of Gait Analysis (Chapters 2-3)
- Gait Analysis: Considerations and Terminology
- Motion Analysis Systems (Chapter 17)

### **Week 3: Oct. 10-14**

- Ground Reaction Forces (Chapter 19)
- Introduction to EMG (Chapter 18)

### **Week 4: Oct. 17-21**

- **Exam #1 (Oct. 17)**
- Motion Analysis Laboratory Demo

### **Week 5: Oct. 24-28**

- Normal Gait: Ankle & Foot Complex (Chapter 4)
- Normal Gait: Knee Joint (Chapter 5)

### **Week 6: Oct. 31-Nov. 4**

- Normal Gait: Hip Joint (Chapter 6)
- Normal Gait: Control of the whole body center of mass (Chapter 9)

### **Week 7: Nov. 7-11**

- **Exam #2 (Nov. 8)**
- Invited lecture 1

### **Week 8: Nov. 14-18**

- Invited lecture 2
- Lab 1

### **Week 9: Nov. 21-25**

- Lab 2
- Thanksgiving holiday: Nov. 24th

### **Week 10: Nov. 28 - Dec. 2**

- Laboratory project oral presentations

**Note: This schedule may be modified.**