

**WAYNE STATE  
UNIVERSITY**  
COLLEGE OF EDUCATION

**Division:** Kinesiology, Health, and Sport Studies  
**Program Area:** Kinesiology  
**Course Ref. #:** 24203  
**Course Title:** KIN 7580 – Biomechanical Analysis of Motor Activity  
**Section #:** 001  
**Term/Year:** Winter 2017  
**Course Location:** 0410 STAT  
**Day:** Wednesday **Time:** 5:30 PM – 8:00 PM  
**Instructor:** Qin Lai  
**Office Address:** 10 Main Annex  
**Office Hours:** M/T: 2:30 PM – 5:00 PM  
**Office Phone #:** 313-577-4246  
**e-mail:** qin\_ali@wayne.edu **Website:** <http://coe.wayne.edu/kinesiology/index.php>

**Course Description:**

Principles and practice in the analysis of human movement. Selected methods of analysis are used in demonstrations and lab experiences. Students complete a biomechanical analysis project on an appropriate human motor skill.

**Course Outcomes:**

Upon completion of this course, students will be able to:

1. Demonstrate an understanding of Kinematic principles for the human movements.
2. Demonstrate an understanding of Kinetic principles for the human movements.
3. Demonstrate an understanding of the neuromechanics of some fundamental movements.
4. Demonstrate an understanding of human motor system structures and functions.

5. Demonstrate an understanding of current research literature in neuroscience and biomechanics.
6. Demonstrate appropriate skills to collect and analyze movement data using motion analysis and electromyographic methods.
7. Develop the skills to propose hypotheses and problem solution in the analysis of human movements.

**Required Text:**

Hamill, J., Knutzen, K.M., & Derrick, T.R. (2015). *Biomechanical basis of human movement (4th ed.)*. Baltimore, MD: Lippincott, Williams & Wilkins.

**Additional References:**

Chapman, A.E. (2008). *Biomechanical analysis of fundamental human movement*. Champaign, IL: Human Kinetics.

Enoka, R. M. (2002). *Neuromechanics of Human Movement (3rd ed.)*. Champaign, IL: Human Kinetics.

Kandel, E.R., Schwartz, J.H., Jessell, T.M., Siegelbaum, S.A., & Hudspeth, A.J. (2013). *Principles of Neural Science (5th ed.)*. New York: McGraw-Hill.

Stergiou, N. (2004). *Innovative analyses of human movement*. Champaign, IL: Human Kinetics

**Course Assignments:**

Four class assignments involve questions from lectures, textbook, and additional materials. A research assignment involves a written paper with extensive literature review and verbal presentation on current topics in biomechanical analysis of human movements. See class schedule.

**Course Examinations:**

Two exams are scheduled during the semester. The exams will cover the first half or second half of the materials for the semester, respectively. No make-up for the final exam. See class schedule.

**Class Policy:**

(1) All the students are asked to participate in classes. A student will receive a grade of “F” for the course if he/she misses more than 1/3 of the total classes.

(2) Every assignment should be submitted on time. Late submission for the class assignments is acceptable within one week after the deadline but with 75% maximum possible points. Research assignment is due on the last day of the class, so it cannot be accepted after the deadline.

(3) All the exams should be attended on time. A make-up can be provided only for emergent situations (e.g., medical, family, car accident). In case of emergency, it is the student’s responsibility to contact the instructor immediately to schedule a make-up. If a student involves university business on the day of exam or quiz, he/she is expected to reschedule exam in advance.

**Class Schedule:**

Date	Content	Assignment
1/11 (Week 1)	Class Orientation Chapter 1 Terminology <i>Reading: Chapter 1</i>	
1/18 (Week 2)	Chapter 2 Skeletal Considerations for Movement <i>Reading: Chapter 2</i>	
1/25 (Week 3)	Chapter 3 Muscular Considerations for Movement <i>Reading: Chapter 3</i>	Assignment 1
2/1 (Week 4)	Chapter 4 Neurological Considerations for Movement <i>Reading: Chapter 4</i>	Due: Assignment 1
2/8 (Week 5)	Chapter 5 Functional Anatomy of the Upper Extremity <i>Reading: Chapter 5</i>	Assignment 2
2/15 (Week 6)	Research Literature Discussion and Midterm Review	Due: Assignment 2
2/22 (Week 7)	<b>Midterm Exam (Chapters 1-5)</b>	
3/1 (Week 8)	Chapter 6 Functional Anatomy of the Lower Extremity <i>Reading: Chapter 6</i>	
3/8 (Week 9)	Chapter 7 Functional Anatomy of the Trunk <i>Reading: Chapter 7</i>	Assignment 3 Research Assignment
3/15 (Week 10)	<i>Spring Break</i>	
3/22 (Week 11)	Chapter 8 Describing Motion – Linear and Angular Kinematics <i>Reading: Chapters 8 &amp; 9</i>	Due: Assignment 3
3/29 (Week 12)	Chapter 9 Linear Kinetics <i>Reading: Chapter 10</i>	Assignment 4
4/5 (Week 13)	Chapter 10 – Angular Kinetics <i>Reading: Chapter 11</i>	Due: Assignment 4
4/12 (Week 14)	Research Presentation & Discussion	
4/19 (Week 15)	Research Presentation & Discussion Final Review	
4/26 (Week 16)	<b>Final Exam (Chapters 6-11)</b>	Due: Research Assignment

**Grading System:**

The following will be used to determine grades in this course:

Midterm	30%
Final	35%
Assignments (@ 4 x 5%)	20%
Research	15%
<b>TOTAL</b>	<b>100%</b>

EXTRA CREDIT: Students who have full class participation will be awarded 2% extra credits.

Grades will be determined on a straight scale:

A = 93 – 100% (4.00)	A- = 90 – 92.9% (3.67)
B+ = 87 – 89.9% (3.33)	B = 83 – 86.9% (3.00)
B- = 80 – 82.9% (2.67)	C+ = 77 – 79.9% (2.33)
C = 73 – 76.9% (2.00)	C- = 70 – 72.9% (1.67)
F < 70% (0.00)	

**ACADEMIC DISHONESTY – PLAGIARISM AND CHEATING:**

The College of Education has a “zero tolerance” approach to plagiarism and other forms of academic dishonesty. Plagiarism includes copying material (any more than 5 consecutive words) from outside texts or presenting outside information as if it were your own by not crediting authors through citations. It can be deliberate or unintended. Specific examples of academic dishonesty, including what constitutes plagiarism, can be found in the University’s Undergraduate Bulletin (<http://bulletins.wayne.edu/ubk-output/index.html>), the Undergraduate Student Handbook (<http://comm.wayne.edu/files/undergradhandbook.pdf>), and in print and online versions of the Graduate Catalog (<http://www.bulletins.wayne.edu/gbk-output/index.html>) under the heading “Student Ethics.” **It is every student’s responsibility to read these documents to be aware which actions are defined as plagiarism and academic dishonesty.** Sanctions could include failure in the course involved, probation and expulsion, so students are advised to think carefully and thoroughly, ask for help from instructors if it is needed, and make smart decisions about their academic work.

Academic misbehavior means any activity that tends to compromise the academic integrity of the institution or subvert the education process. All forms of academic misbehavior are prohibited at Wayne State University, as outlined in the Student Code of Conduct (<http://www.doso.wayne.edu/student-conduct-services.html>). Students who commit or assist in committing dishonest acts are subject to downgrading (to a failing grade for the test, paper, or other course-related activity in question, or for the entire course) and/or additional sanctions as described in the Student Code of Conduct.

- **Cheating:** Intentionally using or attempting to use, or intentionally providing or attempting to provide, unauthorized materials, information or assistance in any academic exercise. Examples include: (a) copying from another student’s test paper; (b) allowing

another student to copy from a test paper; (c) using unauthorized material such as a "cheat sheet" during an exam.

- **Fabrication:** Intentional and unauthorized falsification of any information or citation. Examples include: (a) citation of information not taken from the source indicated; (b) listing sources in a bibliography not used in a research paper.
- **Plagiarism:** To take and use another's words or ideas as one's own. Examples include: (a) failure to use appropriate referencing when using the words or ideas of other persons; (b) altering the language, paraphrasing, omitting, rearranging, or forming new combinations of words in an attempt to make the thoughts of another appear as your own.
- **Other forms of academic misbehavior include, but are not limited to:** (a) unauthorized use of resources, or any attempt to limit another student's access to educational resources, or any attempt to alter equipment so as to lead to an incorrect answer for subsequent users; (b) enlisting the assistance of a substitute in the taking of examinations; (c) violating course rules as defined in the course syllabus or other written information provided to the student; (d) selling, buying or stealing all or part of an un-administered test or answers to the test; (e) changing or altering a grade on a test or other academic grade records.

Anyone with specific questions regarding academic misbehavior should consult the Student Conduct Services website at <http://www.doso.wayne.edu/codeofconduct.pdf> or [http://www.doso.wayne.edu/student-conduct/Academic\\_Integrity.html](http://www.doso.wayne.edu/student-conduct/Academic_Integrity.html)

#### **GENERAL NOTE ON GRADING:**

The College of Education faculty members strive to implement assessment measures that reflect a variety of strategies in order to evaluate a student's performance in a course. For undergraduates and post-degree students C grades will be awarded for satisfactory work that satisfies all course requirements; B grades will be awarded for very good work, and A grades will be reserved for outstanding performance. [For graduate students B grades will be awarded for satisfactory work that satisfies all course requirements; B+ grades will be awarded for very good work, and A grades will be reserved for outstanding performance.] Please note that there is a distribution of grades from A-F within the College of Education and '+' and '-' are recorded and used to distinguish grade point averages.

#### **MEDICAL WITHDRAWAL:**

A student who sustains, during the course of the semester, an injury or illness that prevents him/her from further participation in this class may apply for a "(partial) medical withdrawal" and *may* receive complete or partial reimbursement of tuition paid for this class. A physician's statement is required. Forms to use to apply for "medical withdrawal" may be obtained from the Registrar, or from [www.wayne.edu](http://www.wayne.edu) (type in "forms and instructions" in the search box).

#### **ENROLLMENT/WITHDRAWAL POLICY:**

In the first two weeks of the (full) term, students can drop this class and receive 100% tuition and course fee cancellation. After the end of the second week there is no tuition or fee cancellation. Students who wish to withdraw from the class can initiate a withdrawal request on Pipeline. You will receive a transcript notation of WP (passing), WF (failing), or WN (no graded work) at the time of withdrawal. No withdrawals can be initiated after the end of the tenth week. Students enrolled in the 10th week and beyond will receive a grade. **Because withdrawing from**

**courses may have negative academic and financial consequences, students considering course withdrawal should make sure they fully understand all the consequences before taking this step. More information on this can be found at: [http://reg.wayne.edu/Withdrawing\\_From\\_a\\_Course.php](http://reg.wayne.edu/Withdrawing_From_a_Course.php)**

FINAL DATE FOR STUDENTS TO INITIATE WITHDRAWAL IS **SUNDAY, MARCH 26, 2017.**

### **“I” - INCOMPLETE**

The mark of "I" (Incomplete) is given to a student when s/he has not completed all of the course work as planned for the term and when there is, in the judgment of the instructor, a reasonable probability that the student will complete the course successfully without again attending regular class sessions.

University grading policy states that a written contract should be signed by the student and instructor, specifying all work to be completed. In order to alleviate questions about incomplete courses and to assist students and instructors, the Office of the Registrar has prepared a template Contract for Completion of Incomplete Coursework. You can find the template contract at <http://reg.wayne.edu/pdf-forms/incomplete.pdf>. **Incompletes are not granted for students that have not attended, missing several assignments, missed exams, or failing the course.**

### **STUDENT DISABILITIES SERVICES:**

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located in the Adamany Undergraduate Library. The SDS telephone number is 313-577-1851 or 313-202-4216 (Videophone use only). Once your accommodation is in place, someone can meet with you privately to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Students who are registered with Student Disability Services and who are eligible for alternate testing accommodations such as extended test time and/or a distraction-reduced environment should present the required test permit to the professor at least one week in advance of the exam. Federal law requires that a student registered with SDS is entitled to the reasonable accommodations specified in the student's accommodation letter, which might include allowing the student to take the final exam on a day different than the rest of the class.

### **RELIGIOUS OBSERVANCE POLICY:**

Because of the extraordinary variety of religious affiliations of the University student body and staff, the Academic Calendar makes no provisions for religious holidays. However, it is University policy to respect the faith and religious obligations of the individual. Students with classes or examinations that conflict with their religious observances are expected to notify their instructors well in advance so that mutually agreeable alternatives may be worked out.

### **STUDENT SERVICES:**

The Academic Success Center (1600 Undergraduate Library) assists students with content in select courses and in strengthening study skills. Visit [www.success.wayne.edu](http://www.success.wayne.edu) for schedules and information on study skills workshops, tutoring and supplemental instruction (primarily in 1000 and 2000 level courses).

The Writing Center is located on the 2nd floor of the Undergraduate Library and provides individual tutoring consultations free of charge. Visit <http://clasweb.clas.wayne.edu/writing> to obtain information on tutors, appointments, and the type of help they can provide.