

The University of Texas at Tyler
Course Syllabus – Fall 2009

Subject and Number: KINE 3135-02

Meeting Times: Thursday 13:00-14:50

Location: HPC 02165

Credit Hours: 1

Instructor: Matt Owings, M.S., C.S.C.S.

Office: HPC 02165

Texts: Hall, Susan J., Basic Biomechanics 2006 5th ed. McGraw Hill.

Sieg and Adams Illustrated Essentials of Musculoskeletal Anatomy 2009 5th ed. Megabooks.

Course Description: This laboratory is a companion course for KINE 3334. As such, the student experiences and observations in this lab are designed to enhance his or her understanding of the material covered in KINE 3334. There will be one lab unit on each of the following:

- Kinematics.
- Kinetics.
- Electromyography (EMG).

Exams: This laboratory will have one multiple choice exam focusing on functional anatomy.

Homework: Part of the laboratory periods may, at the instructor's discretion, may be devoted to problem solving....problems similar to the problems assigned in lecture.

Grades: Grades for the laboratory section will consist of:

Lab Unit 1 (kinematics) – 25%

Lab Unit 2 (kinetics) – 25%

Exam 3 (EMG) – 25%

Anatomy exam – 25%

89.5-100% = A

79.5-89.5 = B

69.5-79.5 = C

59.5-69.5 = D

<59.5 = F

Cell Phones: Average cell phone usage is 450-500 minutes per month. Average cell phone call length is 3 minutes 15 seconds. That means 146 calls per month. Let's assume 73 calls are incoming. If 73 calls per day are incoming, the probability of receiving a call in any hour are $73/30/24$...the chance of receiving a call during any given hour are 0.1014. That means there is a 0.8986 chance there will be no call to that phone. If 30 such phones are taken as a group, the chance of none of them receiving a call within a given hour is 0.8986^{30} . The chance of there being no incoming call in the group of 30 phones is 0.04, or a 4% chance of the class not being interrupted by a ringing phone. So, please silence your cell phone prior to the start of class!

Tentative Schedule (Fall 2009 by week):

8/24-8/28 – Observations, stride frequency, body height, segment lengths

8/31-9/4 – Kinematics, observations of position, distance and displacement (rectilinear), bone anatomy, introduction to instrumentation.

9/7-9/11 – Kinematics, observation of speed, velocity, acceleration (rectilinear), bone anatomy.

9/14-9/18 – Kinematics, observation of position, distance and displacement (angular), joint anatomy.

9/21-9/25 – Kinematics, observation of speed, velocity and acceleration (angular), joints anatomy.

9/28-10/2 – Finish kinematics unit.

10/5-10/9 – Kinetics, measurement of force and weight, introduction to EMG

10/12-10/16 – Kinetics, rectilinear dynamics and muscle anatomy, introduction to instrumentation used to measure forces.

10/19-10/23 – Kinetics, materials basics (Hooke's Law, failure curves)

10/26-10/30 – Kinetics (Torque, angular concepts, statics)

11/2-11/6 – Kinetics (balance, stability), , EMG, posture, adjustment and feedforward

11/9-11/13 – Kinetics (spinal kinetics, lifting), spinal anatomy

11/16-11/20 – Kinetics (Center of mass, angular movement)

11/23-11/27 – Thanksgiving week – out of class assignment

11/30-12/4 – Finish units on kinetics and EMG

12/7-12/11 – Finish units on kinetics and EMG, anatomy exam.