

# CSULB - KPE 300: Biomechanics of Human Movement (TR Lecture / Lab 1 - 3:20) FALL 2002

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*Graduate Assistant:* Elizabeth Orr

*Texts:* (1) McGinnis, PM. Biomechanics of Sport and Exercise, Human Kinetics (1999).

(2) Behnke, RS. Kinetic Anatomy, Human Kinetics (2001). [*or equivalent Anatomy text*]

(3) Handout & Lab pack? - required / useful materials will be on Beachboard (CSULB email acct.)

**Note:** Students will need a calculator with scientific function keys – NO PDA's or computers.

*Prerequisite:* Human Anatomy (eg. BIOL 208 at CSULB) [NOTE: some work in basic physics & trigonometry (text Appendix A) is expected, basic math review sessions may be available.]

*Purpose:* to provide students with information and laboratory experiences that will permit them to develop an understanding of (1) the anatomical and mechanical fundamentals of human movement, (2) movement analysis techniques applying those fundamentals to evaluate and prescribe ways to improve the performance of movement activities.

## *Course Topic Sequence, Textbook Reading Assignments & Test Schedule*

Week # 1. Course overview, grading policies, Chapters 1 & 2: Intro & Terminology.

Week # 2. Chapters 3 & 4: Basic Concepts & Principles; Forces.

Week # 3. Chapters 4 & 5: Linear Kinematics.

Week # 4. Hip Joint Functional Anatomy

Week # 5. Knee Joint Functional Anatomy ----- TEST #1 - ( Thursday of week # 5)

Week # 6. Ankle – Foot, Shoulder Functional Anatomy

Week # 7. Shoulder, Elbow, Wrist - Hand Functional Anatomy

Week # 8. Chapter 16 & 17 Qualitative Analysis

Week # 9. Chapters 5 & 6: Linear Kinetics.

Week # 10. Chapters 6 & 7: Work, Power, Energy. -----TEST # 2 - ( Thursday of week # 10)

Week # 11. Chapters 7 & 8: Torque.

Week # 12. Chapters 8 & 9: Angular Kinematics.

Week # 13. Chapters 9 & 10: Angular Kinetics.

Week # 14. Chapters 10 & 11: Fluid Mechanics. -----TEST # 3 - ( Thursday of week # 14)

Week # 15. Remaining Topics, Summary, Review.

Week #16. ----- CUMULATIVE FINAL EXAM

DATE, TIME, PLACE For Exam => Tuesday December 17, 2002, 12:30 to 2:30 PM, classroom.

**NOTE:** A test will be given three (3) times during the semester. **NO Make - Ups** of tests, the lowest test score will be dropped. Extra work, such as a paper, will not be permitted to modify the grading plan given below. No drops beyond test #2. Incompletes require more than 50% of the total work (possible grade points) to be completed. You are responsible for all information given during Lecture and Lab meetings. Lab attendance will be taken!

*Grading:* Best two tests total (50%) + Cumulative Final Exam (30%) + Lab work, attendance, participation and Homework (20%). Total points earned by all students are averaged. If the average is ~75% or more then A = > 90% of max possible total points, B = 80 to 89% of max possible total points, etc. If the average is < 70% a grade curve based on the average and standard deviation will be used.

*Laboratory sessions* will be conducted during the scheduled lab time and will be used for a variety of activities, including: (1) Lab work - data collection & analysis; (2) extended lecture topics, (3) problem solving, (4) equipment & methods demonstrations.