

Occupational Biomechanics

Kinesiology 380

Section: D100

Term: 2005 Fall

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Discussion Topics: Course Structure

One two-hour lecture/seminar and one one-hour lecture/seminar per week. The course material will be presented via lecture; discussion and problem based learning groups. Students will be required to commit time for group meetings regarding assignments and semester project.

Course Description

This course is intended to provide students with the basic skills necessary to apply the principles of biomechanical analysis to common work tasks. Students will learn techniques to measure movement and acceleration, and to analyze forces, work and power in a working environment. The importance of material properties and the value and limitations of biomechanical analysis, and of published guidelines for manual materials handling will be investigated from the point of view of work design, safety and injury prevention.

Course Topics

Introduction to problem solving, workplace regulations, anthropometry in occupational biomechanics, mechanical properties of tissues, bio-instrumentation, static and dynamic analysis, linked segment models, muscle and joint forces, lifting models (a computer based model will be used in the computer assignment lab), manual materials handling, work analysis methods, strength and work capacity, repetitive loading, biomechanical factors in workplace design, job task design, and whole body and segmental vibration and impacts.

Grading: Assignments - 10%

Semester project - 30%

Midterms (two) - 20%

Final exam - 40%

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Required Texts: A Kin. 380 occupational biomechanics courseware manual will be available through the bookstore. Reference material will be placed on reserve in the library or on the SFU website. A detailed course outline and sample course notes can be viewed at: www.s

Recommended Texts:

Materials/Supplies:

Prerequisite/Corequisite: Prerequisites

KIN 201, 205 and 326, which may be taken concurrently. Students will be required to call on the material covered in KIN 201. Kin 380 requires a good recall of previously learned math, physics, anatomy and biomechanics.

Notes: Failure to attend an examination

Students who miss examinations due to exceptional circumstances (such as serious illness or compassionate reasons) are required to obtain a physician's certificate, whereby the physician states that you were unable to write your midterm or final on the set date due to a medical condition beyond your control, or other supporting documents in order to obtain consideration in the course. Such documents must be filed with the School Director (via the Kinesiology office) or Registrar within four calendar days of the date on which the examination was to have been written. Exceptional circumstances must be approved by the Undergraduate Program Committee in order for a student to receive consideration.

Students must check the exam schedule when making course selections. Students are reminded that final examinations may be scheduled at any time during the examination period and that students should avoid making travel or employment arrangements for this period.

Academic honesty and student conduct

Academic honesty is a condition of continued membership in the University community.

Academic dishonesty, including plagiarism or any other form of cheating is subject to serious academic penalty, i.e. failure on an assignment, failure in a course, suspension or expulsion from the University.

The University codes of student conduct and academic honesty are contained in policies T10.01 and T10.02 which are available in the Course Timetable and on the Web via <http://www.reg.sfu.ca>.

July 2000

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.