1 INSTRUCTOR

Instructor: Karen Gordon, Ph.D., P.Eng.
Office: RICH 2517, ext. 52435
Email: kgordon@uoguelph.ca
Office hours: By appointment

2 LEARNING RESOURCES

2.1 Course Website
Course material, news, announcements, and grades will be regularly posted to the ENGG*6190 Courselink site. You are responsible for checking the site regularly.

2.2 Required Resources
N/A
2.3 **Recommended Resources**


2.4 **Additional Resources**

**Lecture Information:** All the lecture notes will be posted on the web page. These notes are meant to supplement lectures, and are not complete on their own.

**Assignments:** Download and complete the assignments as they are presented on the course website.

**Miscellaneous Information:** Other information related to Tissue Mechanics may also be posted on the web page.

2.5 **Communication & Email Policy**

Please use lectures as your main opportunity to ask questions about the course. Major announcements will be posted to the course website. **It is your responsibility to check the course website regularly.** As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

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3 **ASSESSMENT**

3.1 **Dates and Distribution**

**Assignments:** 40% (4 total)
- Posted January 24 – due January 31
- Posted February 14 – due February 28
- Posted March 7 – due March 14
- Posted March 21 – due March 28

**Project:** 30%
- Submission 1 – Proposal: Friday, January 31\(^{th}\), in class – 5%
- Submission 2 – Assignment question: Friday, March 14\(^{th}\), in class – 10%
- Oral Presentation: Friday, March 28 – 30%
- Final Report: due Friday April 4, in class – 55%

**Final Exam:** 30%
- Wednesday, April 9th, 09:30-11:30, Room TBA on Courselink
3.2 Course Grading Policies

Missed Assessments: If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please email the course instructor. Please see below for specific details and consult the undergraduate calendar for information on regulations and procedures for Academic Consideration:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-acomrelig.shtml

Passing grade: Students must obtain a grade of 65% or higher in order to pass the course.

Late Submissions will lose 10% of the total grade per day.

4 AIMS, OBJECTIVES & GRADUATE ATTRIBUTES

4.1 Course Description

This course is an introductory course in continuum mechanics with applications to biological tissues. The main goals of the course are (1) to teach students the fundamental methods of formulating continuum models (2) to illustrate applicability of models to various biological tissues.

4.2 Learning Objectives

At the successful completion of this course, the student will have demonstrated the ability to:

1. Describe the structure of various tissue types
2. Describe and apply basic modeling techniques for biological tissues
3. Utilize basic continuum mechanics to solve problems of anisotropic stress and strain distribution
4. Formulate and apply constitutive equations
5. Describe the four linear continuum theories
6. Demonstrate an understanding of methods of modeling a specific tissue type

4.3 Instructor’s Role and Responsibility to Students

The instructor’s role is to develop and deliver course material in ways that facilitate learning for a variety of students. Selected lecture notes will be made available to students on Courcelink/D2L but these are not intended to be stand-alone course notes. During lectures, the instructor will expand and explain the content of notes and provide example problems that supplement posted notes. Scheduled classes will be the principal venue to provide information and feedback for tests and project.
### 4.4 Students’ Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures and tutorials. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who do (or may) fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

### 4.5 Relationship to Other Courses

This course is a graduate level course which will guide and instruct students on mathematical modeling of biological tissues. Students should have previous background knowledge of Calculus, Differential equations, Mechanics, and Kinematics and Dynamics. This course will use these fundamentals in the research area of tissue mechanics.

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### 5 Teaching and Learning Activities

#### 5.1 Timetable

**Lectures:**  
Fridays  1:00-4:00  Thornbrough 1126

#### 5.2 Lecture Schedule

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5.3 Other Important Dates

Monday, January 6 2014:  First day of class
Monday, February 17 – Friday, February 21 2014: Winter Break
Friday, March 7:  drop date – 40th class
Friday, April 4 2014: last day of class
6  LAB SAFETY

Safety is critically important to the School and is the responsibility of all members of the School: faculty, staff and students. As a student in a lab course you are responsible for taking all reasonable safety precautions and following the lab safety rules specific to the lab you are working in. In addition, you are responsible for reporting all safety issues to the laboratory supervisor, GTA or faculty responsible.

If the laboratory rules are not followed, consequences will include removing student’s access to the lab. If this results in lab work not being completed, the student will receive a grade of 0.

7  ACADEMIC MISCONDUCT

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University’s policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member.

7.1  Resources

The Academic Misconduct Policy is detailed in the Graduate Calendar:
http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1687.shtml

A tutorial on Academic Misconduct produced by the Learning Commons can be found at:
http://www.academicintegrity.uoguelph.ca/

Please also review the section on Academic Misconduct in your Engineering Program Guide.

The School of Engineering has adopted a Code of Ethics that can be found at:
http://www.uoguelph.ca/engineering/undergrad-counselling-ethics
8 ACCESSIBILITY

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability for a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: http://www.uoguelph.ca/csd/

9 RECORDING OF MATERIALS

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

10 RESOURCES

The Academic Calendars are the source of information about the University of Guelph’s procedures, policies and regulations which apply to undergraduate, graduate and diploma programs: http://www.uoguelph.ca/registrar/calendars/index.cfm?index