

# HK\*4610 Health and Injury Biomechanics

Fall 2022 Section(s): CO1

Department of Human Health and Nutritional Sciences Credit Weight: 0.50 Version 1.00 - September 02, 2022

# **1 Course Details**

# 1.1 Calendar Description

This course presents an overview of bone and joint function from a biomechanics perspective, within the framework of health and injury. Particular emphasis is placed on the influence of biomechanical signals on the regulation of bone and joint structure and function. Individual diseases, such as osteoarthritis, will be considered as they impact the various tissues of the joint (cartilage, ligament and bone) and the neuromuscular system. The laboratory will provide supplementary material illustrating particular aspects of musculoskeletal function including in vivo and in vitro biomechanical testing.

Pre-Requisites:

ENGG\*3150 or HK\*2270

# **1.2 Course Description**

This course presents an overview of neuromuscular tissue function in health, injury and disease from a biomechanics perspective. Particular emphasis is placed on understanding and applying biomechanical principles to the characterization of soft tissue, bone and joint structure and function, in health and injury. The impact of individual diseases, such as osteoarthritis and osteoporosis, will be studied in the context of their effect on the various tissues (cartilage, ligament, muscle and bone) comprising the neuromuscular system. Clinical applications of these biomechanical principles will be emphasized in the second half of the course to address the diagnosis, assessment, treatment and clinical management of conditions affecting the neuromuscular system, in health and disease. The laboratory component will expose the student to practical and clinical skills relevant to the assessment of the neuromuscular system, interpretation of clinical tests and formulation of clinical impression/diagnosis in the physical assessment of the patient in health and disease.

# 1.3 Timetable

Lectures: Monday, Wednesday, Friday from 10:30am-11:20am. Lectures are conducted in person.

# 1.4 Final Exam

TBA

# **2 Instructional Support**

# 2.1 Instructional Support Team

Instructor: Email: Telephone: Office: Office Hours: John Srbely DC PhD jsrbely@uoguelph.ca +1-519-824-4120 x52058 HHNS Annex 281 By appointment

# **3 Learning Resources**

There is no required textbook for this course.

You will be required to purchase (\$24 CAD) a one-semester license for Kritik Software (www.kritik.io).

# **3.1 Required Resources**

#### Courselink (website) (Website)

All course material, news, announcements, online quizzes and grades will be administered and/or regularly updated on the HK\*4610 Courselink site.

Study materials including lecture and lab notes, and supplementary readings will be added to the site on an ongoing basis.

**There is no formal textbook requirement for this course;** you will be provided the relevant readings to supplement lecture material.

We will be implementing **Kritik Software** (www.kritik.io) for reflective writing and case study activities for this course. There is a **\$24 CAD cost for the semester**. Please sign up for the software on the Kritik website prior to the first day of classes.

# You are responsible for checking the Courselink site regularly to keep up to date on all course activities.

# **4 Learning Outcomes**

# 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

- 1. Characterize mechanisms of tissue injury in bone, tendon, ligament, cartilage and muscle tissues using basic principles of biomechanics, tissue and fluid mechanics.
- 2. Learn to perform a clinical history and hands-on orthopedic/neurologic physical examination/assessment in a laboratory/clinical setting.
- 3. Interpret the findings of a clinical history and physical examination to confer a clinical opinion/impression/diagnosis.
- **4.** Learn how to communicate clinical findings with other health professionals, including how to record SOAP notes.
- Understand the key biomechanical, pathological and/or clinical features of musculoskeletal injuries and disease, and applying these to clinical assessment and diagnosis of a patient.
- **6.** Understand and apply principles of evidence-based rehabilitation and injury management principles to the clinical management of musculoskeletal injury and disease.
- 7. Understand physiologic mechanisms of acute and chronic pain and how to clinically assess and manage patients with chronic pain.
- 8. Appreciate and understand the role and contribution of the various health professionals (physician, Registered Kinesiologist, chiropractor, physiotherapist, massage therapist, other allied health professionals) in the Canadian health delivery system

# **5 Teaching and Learning Activities**

## Course topics

- Clinical Biomechanics review
- Tissue mechanics, structure and function of:
  - bone
  - tendon
  - ligament
  - cartilage

- muscle
- joints
- injury and healing
- clinical epidemiology
- acute and chronic pain
- injury management and prevention
- clinical applications of biomechanics
  - diagnosis and assessment of injury
  - management of musculoskeletal injury and disease

## 5.1 Lecture

Week 1

**Topics:** 

#### Lecture 1-REVIEW OF BIOMECHANICAL PRINCIPLES RELEVANT TO THE STUDY OF INJURY

Kinetics v Kinematics

Energy: Relationship of Energy to Injury, Total Mechanical Energy and Injury, Energy dissipation and injury prevention, Impulse-momentum and implications to injury and prevention, Friction

Forces and Moments: Muscle force and joint moments, Clinical applications including: Coxa vara, coxa valga, Low back pain, Q-angle, Rotator cuff strain, Joint Stability, Stabilizing vs destabilizing joint forces and their role in injury

#### Week 2

Topics:

#### Lecture 2-CONNECTIVE TISSUES, HEALING AND TISSUE REPAIR, PRINCIPLIES OF REHABILITATION

Histology and classification of connective tissue, Collagen Types, Mechanical properties. Comparison of connective tissues including:

- 1. Tendon and ligament,
- 2. Cartilage
- 3. Bone

#### Inflammation

Tissue Repair and regeneration

- 1. Tissue remodeling
- 2. RICE
- 3. Therapeutic modalities and their role in injury management

### Therapeutic Exercise Programming

#### Week 3

**Topics:** 

#### Lecture 3-MATERIAL MECHANICS AND VISCOELASTIC TISSUES

Structural v material properties of tissues: Stress-strain, Load-deformation

Bending moment of inertia and impact on injury

Tissue loading

Biomechanical principles of injury and tissue failure

Properties of viscoelastic tissues and how they relate to injury

- 1. Stress-relaxation
- 2. Creep

#### Week 4

**Topics:** 

## Lecture 4-TISSUE MECHANICS-BONE

Bone development and related injury considerations

- 1. Peak height velocity (PHV)
- 2. Bone mineral density (BMD)
- 3. Bone strength
- 4. Stress-strain properties of bone
- 5. Effect of bone mineralization and collagen
- 6. Bone Density
- 7. Porosity and Mineralization

Effect of clinical conditions on bone strength and material properties

- 1. Osteoporosis
- 2. Osteoclastic bone disease (cancer, metabolic)

Determinants of bone strength and how to optimize this through therapeutics and lifestyle management

Bone adaptation and remodeling: Therapeutic implications, Vibration, Exercise, Medication and pharmacotherapeutics, Nutrition and prevention

Bone injury

Week 5

Topics:

#### Lecture 4-TISSUE MECHANICS-CARTILAGE

Cartilage structure and function: Cartilage matrix structure, Cartilage mechanics, Cartilage growth and repair, Cartilage adaptation and aging

- 1. Clinical implications: Cartilage injury, Disc injury/pathology, Meniscus, Arthritis
- 2. Prevention of cartilage injury and degeneration

Therapeutics

Cartilage structure and function: Cartilage matrix structure, Cartilage mechanics, Cartilage growth and repair, Cartilage adaptation and aging

Clinical implications: Cartilage injury, Disc injury/pathology, Meniscus, Arthritis

Prevention of cartilage injury and degeneration

Therapeutic management of cartilage injury and disease

#### Week 6

**Topics:** 

#### Lecture 6-TISSUE MECHANICS-TENDON AND LIGAMENT

Structure of ligaments and tendons: Anisotropicity and clinical implications

Tendon injury

Ligament injury

Structural Properties of tendon/ligament: Stress-strain, Cross-sectional area, Length

Factors influencing mechanical properties of tendon and ligament: Exercise, Tension, Age,

Use v Disuse, Therapeutic implications

Biomechanical principles relevant to muscle injury: Anatomy, Muscle architecture, Fusiform v penniform, Force-length, Force-velocity, Power-velocity, Efficiency of muscle contraction

Muscle Injury: Strain, Sprain, Contusion, Muscle cramp, DOMS

Pathophysiology and Clinical Considerations for nerve injury: Peripheral nerve, Central Nervous System

#### Week 7

#### **Topics:**

#### Lecture 7-CLINICAL HISTORY TAKING AND PATIENT ASSESSMENT

How to perform a thorough clinical history and physical examination

Legal and Ethical Considerations of Patient Assessment and Management

Posture Assessment: Techniques, Types of curvatures

Cranial Nerve Examination

#### Week 8

#### **Topics:**

#### Lecture 8-PAIN AND INFLAMMATION

Classification of pain: Definition, Models and dimensions of pain, Pain vs nociception, Referred pain

Inflammation: chronic vs acute

Cardinal/clinical signs of inflammation

Management of Inflammation and Pain: Phases of healing, RICE

Central sensitization: mechanisms and clinical manifestation

Pain Management: Clinical evaluation, Pain assessment techniques

Therapeutic options for pain management

Pain and aging

Pain and Disability: Disability vs Impairment

Assessment of disability: McGill Pain Questionnaire, Oswestry, Roland Morris

### Week 9

Topics:

## Lecture 9-CLINICAL CONSIDERATIONS AND INJURY MANAGEMENT OF UPPER LIMB

### Function Anatomy-Shoulder

- 1. Kinematics and Kinetics
- 2. Definition, mechanism of injury, signs and symptoms and management for: Sprains, Strains, Dislocation, Fracture, Rotator cuff, Strain, Tear, Impingement, Acromioclavicular Joint, Bursitis, Biceps Tendonitis

## Functional Anatomy-Elbow, wrist and hand, Kinematics and Kinetics

- 1. Kinematics and Kinetics
- 2. Definition, mechanism of injury, signs and symptoms and management for: Bursitis, Sprains and dislocations, Strains, Medial and lateral epicondylitis, Carpal tunnel syndrome

### Week 10

**Topics:** 

## Lecture 10-CLINICAL CONSIDERATIONS AND INJURY MANAGEMENT OF LOWER LIMB

## Functional Anatomy-Hip and Pelvis: Kinetics and kinematics

- Definition, mechanism of injury, signs and symptoms and management for: Osteitis pubis, Sacroiliac joint, Hip pointer, Adductor strain, Iliopsoas strain, Bursitis
- 2. Functional Anatomy-Thigh and Knee: Kinematics and kinetics
- 3. Definition, mechanism of injury, signs and symptoms and management for: Hamstring strain, Bursitis, Iliotibial band syndrome, Knee, Meniscal injury, Patellofemoral stress syndrome, Chondromalacia patellae, Osgood-Schlatter Disease, Patellar tendinosis, Knee ligament injury (Anterior Cruciate, Posterior Cruciate, Medial Collateral, Lateral Collateral), Myositis ossificans, Contusion, Femoral fracture
- 4. Functional Anatomy-Leg, Ankle and Foot: Kinematics and Kinetics

## Definition, mechanism of injury, signs and symptoms and management for:

- 1. Shin splints
- 2. Sprains
- 3. Achilles tendonitis
- 4. Compartment syndrome
- 5. Medial tibial stress syndrome
- 6. Plantar fasciitis
- 7. Morton's foot
- 8. Arch problems

#### Week 11

Topics:

#### Lecture 11-CLINICAL CONSIDERATIONS AND INJURY MANAGEMENT OF THE SPINE

Functional Anatomy-Spine:

Kinematics and Kinetics

Anatomy of the Spine

Injury Prevention in everyday activities

Assessing spinal posture: Spinal curvatures that predispose to injury

Definition, mechanism of injury, signs and symptoms and management:

Whiplash, Sprain and strain, Suboccipital region,

Clinical implications: Cervicogenic headache, Disequilibrium and vertigo

Low Back Pain: Acute low back pain, Chronic low back pain, Mechanical vs discogenic low back pain

Spinal stenosis

Dowager's Hump

Degenerative Disc Disease: Pathophysiologic mechanisms, Disc loading and it's contribution to DDD, Stages of discopathy

Sciatica and herniated disc:

Spondylolysis and spondylolisthesis

### Arthritis

Osteoarthritis: Primary vs secondary, Diagnostic criteria of OA, Radiographic, Clinical

Seropositive Arthritis: Rheumatoid Arthritis

Seronegative Arthritis: Ankylosing Spondylitis: Enteropathic, Psoriatic

#### Wed, Sep 5 - Sat, Dec 1

Topics:	<u>TENTATIVE Lecture Schedule Fall 2022 (schedule may be</u> modified as necessary)			
	0	10:30-11:20		
September	9	am	Introduction	
September	12	10:30-11:20		
		am	Classification of Biological Tissues	
September	14	10:30-11:20		
		am	Review of Clinical Applications of Biomechanics	
September	16	10:30-11:20		
		am	Clinical Biomechanics and Energy	
September	19	10:30-11:20		
		am	Clinical Biomechanics and Energy	
September	21	10:30-11:20		
		am	Joint Mechanics	
September	23	10:30-11:20	Material Machanica	
		aiii 10:20 11:20	Material Mechanics	
Sentember	26	10.30-11.20 am	Viscoplastic Tissues	
September		10.30-11.20		
Sentember	28	am	Tissue Loading	
		10:30-11:20		
September	30	am	Bone Structure and Formation	
	-	10:30-11:20		
October	3	am	Bone Structure and Formation	
	_	10:30-11:20		
October	5	am	Biomechanics of Bone	
	7	10:30-11:20		
October	/	am	Bone Adaptation and Remodeling	

TENTATIVE Lecture Schedule Fall 2022 (schedule may be

	10	10:30-11:20		
October	10	am	THANKSGIVING HOLIDAY	
Ostalasi	12	10:30-11:20		
Uctober		am 10:20 11:20	Ligament and Tendon Structure	
October	14	am	Ligament and Tendon Biomechanics	
	17	10:30-11:20		
October	17	am	Cartilage	
	19	10:30-11:20		
Uctober		am 10:30-11:20	Cartilage	
October	21	am	Clinical History Taking	
	24	10:30-11:20		
October		am	MIDTERM EXAM	
Ostabar	26	10:30-11:20	Docture	
Octobel		10:30-11·20	POSIUIE	
October	28	am	Posture	
	31	10:30-11:20		
October	0.	am	Inflammation and Tissue Healing	
November	2	10:30-11:20 am	Pain	
Novernoer		10:30-11:20		
November	4	am	Pain	
	7	10:30-11:20		
November		am 10:00 11:00	Pain	
November	9	10.30-11.20 am	Upper Extremity	
November	11	10:30-11:20		
November		am	Upper Extremity	
<b>N</b> 1 1	14	10:30-11:20		
November		am 10:20 11:20	Lower Extremity	
November	16	am	Lower Extremity	
	10	10:30-11:20	, ,	
November	18	am	Lower Extremity	

	21	10:30-11:20	
November		am	Head Neck and Spine
	22	10:30-11:20	
November	23	am	Head Neck and Spine
	25	10:30-11:20	
November		am	Head Neck and Spine
	20	10:30-11:20	
November	20	am	Guest Lecture:
	30	10:30-11:20	
November	50	am	Review Lecture
	2	10:30-11:20	
December	2	am	Review Lecture

## 5.2 Lab

#### TBA

Topics:

#### Lab 1 - Physical Examination of the Upper Limb and Cranial Nerves

#### TBA

Aims of the Clinical Assessment: History, Physical Examination

Cervical Spine: ROM - assessment of both active and passive ranges

Physicall assessment of the Atlanto-Occipital Region

Testing for cervical myotomes

Special Tests for Cervical Spine: Kemps, Formainal Compression, Cervical Distraction, Valsalva, L'Hermitte

Thoracict Outlet Syndrome: pathophysiology and physical examination; Adson's Test

Reflex Testing: C5-C7

Assessment of the Shoulder: Glenohumeral, Acromioclavicular and Scapulothoracic Joints

1. Range of Motion

- 2. Apley's Scratch Test
- 3. Impingment Sign
- 4. Supraspinatus and Biceps test
- 5. Shoulder apprehension test

Elbow: Range of Motion, tests for ligamentous instability, Tinel's sign, strength testing

Carpal Tunnel Syndrome: diagnosis and assessment

#### TBA

**Topics:** 

### Lab 2 - Physical Assessment of Spine and Lower Limb

### TBA

Postural Assessment

Scoliosis: Assessment and Management

Assessment of the Lumbar Spine

- 1. motion palpation of the lumbar spine and pelvis
- 2. Lasegue's Straight Leg Raise Test
- 3. Deyelle-May Test
- 4. Nerve Root Testing: L4 and L5
- 5. Reflex Testing
- 6. Dermatomal testing

## Assessment of the Hip

- 1. Range of Motion
- 2. Compression Test

### Assessment of the Knee

- 1. Range of Motion
- 2. Palpation of knee landmarks
- 3. Drawer Sign for ACL

- 4. Medial/Lateral Gap test for collaterals
- 5. Meniscal tests (Apley's compression, McMurray)
- 6. Patellar Compression for Chondromalacia Patellae

#### Assessment of Foot anad Ankle

- 1. Range of Motion
- 2. Achilles tendon
- 3. Medial and lateral malleoli
- 4. Tarsal bones
- 5. Talofibular ligament
- 6. Deltoid ligament

**Cranial Nerve Examination** 

# **6** Assessments

## **6.1 Assessment Details**

Midterm Exam (20%) Date: Mon, Oct 24, in class Learning Outcome: 1, 2 Mid-Term will be held within the regularly scheduled lecture timeslot (10:30-11:20 am).

Learning Outcomes # 2 and 3.

Online Quizzes (40%) Date: TBA Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8 A total of 4 online quizzes will be conducted through Courselink. Each quiz is worth 10% for a total of 40% of your overall mark.

Quizzes run 45-minutes and you will be provided a 4-day window to write the quiz.

The dates of the online quizzes will be scheduled on a TBA basis, as material is covered in class, and final dates will be published in Courselink.

The following is the tentative schedule of dates:

Quiz	Tentative Date Window	
Quiz 1	September 23-26, 2022	
Quiz 2	October 3-6, 2022	
Quiz 3	October 17-20, 2022	
Quiz 4	November 1-4, 2022	

Learning outcomes # 2-9.

#### Kritik Assignments (15%)

**Date:** TBA, online using Kritik Software **Learning Outcome:** 1, 3, 5, 6, 7 You will be assigned three (3) Kritik assignments during the semester, each worth 5% of your overall grade.

Kritik assignment #1 is a reflective writing assignment, while Kritik Assignments #2 and #3 are case studies, for a total of 15% of your overall grade.

You will be provided a 4-day window to complete each assignment. Tentative dates are provided below, however, these dates may be modified to align with class material content.

Kritik Assignments: Tentative Schedule of Dates

Assignment	Tentative Dates	Value (%)	
Assignment #1	September 16-20, 2022	5	
Assignment #2	October 25-29, 2022	5	
Assignment #3	November 23-27, 2022	5	

Final Exam (25%) Date: TBA Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8 Date and Location TBA

Learning outcomes # 2-9

# 7 Department of Human Health and Nutritional Sciences Statements

# 7.1 Academic Advisors

If you are concerned about any aspect of your academic program:

• Make an appointment with a program counsellor in your degree program. <u>B.Sc.</u> <u>Academic Advising or Program Counsellors</u>

# 7.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. http://www.learningcommons.uoguelph.ca/
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: http://www.lib.uoguelph.ca/getassistance/studying/chemistry-physics-help and http://www.lib.uoguelph.ca/getassistance/studying/math-stats-help

# 7.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. https://www.uoguelph.ca/counselling/
- Student Health Services is located on campus and is available to provide medical attention. https://www.uoguelph.ca/studenthealthservices/clinic
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. http://www.selfregulationskills.ca/

# 7.4 Personal information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) http://www.e-laws.gov.on.ca/index.html. This information is used by University

officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar.

(https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml)

# 7.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

# **8 University Statements**

## 8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

## 8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml

# 8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml Graduate Calendar - Registration Changes https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-regregchg.shtml

Associate Diploma Calendar - Dropping Courses https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

## 8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

## 8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website https://www.ridgetownc.com/services/accessibilityservices.cfm

# 8.6 Academic Integrity

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 encourages academic integrity. 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 or faculty advisor.

Undergraduate Calendar - Academic Misconduct https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08amisconduct.shtml

Graduate Calendar - Academic Misconduct https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

# 8.7 Recording of Materials

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

## 8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars https://www.uoguelph.ca/academics/calendars

# 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (https://news.uoguelph.ca/2019-novel-coronavirus-information/) and circulated by email.

# 8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

# 8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- https://news.uoguelph.ca/return-to-campuses/how-u-of-g-is-preparing-for-yoursafe-return/
- https://news.uoguelph.ca/return-to-campuses/spaces/#ClassroomSpaces

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.