Course outline: Ergonomics / EDKP 444 / section 001

General information

Term and year: Fall 2023
Course pre-requisite(s): EDKP 206 Biomechanics
Course co-requisite(s): N/A
Course schedule (class day(s) and time): Tuesdays & Thursdays, 1:05 – 2:25pm
Class locale: Leacock building, room #15
Number of credits: 3

Instructor information

Instructor: Prof. Julie Côté, Ph.D
E-mail: Julie.cote2@mcgill.ca
Office location / office hours: Currie Gym room #335, Thursdays 3-4 pm, or by appointment

Teaching Assistant: Ms. Cinthuja Pathmanathan, Ph.D. student
E-mail: cinthuja.pathmanathan@mail.mcgill.ca
Office location / office hours: Currie Gym room #326-A, Tuesdays 3 pm or by appointment

All of the relevant information pertaining to the course will be communicated via myCourses. Be sure to consult it at least once per week for any course updates. Any other time-sensitive information that may need to be urgently communicated will be done so by email. If you have questions that are not answered in the course material, you may email them to either the Instructor or the TA. You may also request individual or group appointments that can take place either in person or virtually. Email communications between instructor, TA and students will always be via our McGill email addresses. The instructor and TA will endeavor to respond to your email within 1 week or sooner.

Course overview

An examination of ergonomic issues including: injury mechanisms, evaluation and assessment techniques, occupational health and safety legislation, and ergonomic interventions.

Learning outcomes

- Deepen your understanding of basic concepts of kinesiology as they relate to workplace health;
- Understand and explain the mechanisms underlying common work-related injuries;
- Collaboratively research, analyze, solve, and communicate outcomes of ergonomic analyses.

Instructional methods

The following instructional methods will be used in this class:

- instructional strategies: lectures, flipped classes, case studies, group projects;
- software and hardware: access to myCourses and typical Microsoft suites when preparing and studying for the course;
- all material drawn upon for the assessments will be posted on myCourses;
- all mandatory learning activities and assessments will take place in person, and none will be made available remotely
- students should contact the instructor if they anticipate that they cannot take part in certain course components.

The guideline for planning learning activities is that one credit equals about 45 hours of student work. (Thus, a three-credit course equals about 135 hours of student work.) Those hours should include all contact time (e.g., lecture, laboratory, tutorial, and conference time) for a course, as well as the time students spend doing assignments, preparing for class, and reviewing material for a course.

Expectations for student participation

Optimal learning requires active participation in class; this includes interacting with the instructor and other students about the pedagogical material, and being proactive in flagging to the instructor any issue that can help facilitate learning of the class material. In the context of the class, I expect you to conduct yourself on a daily basis, in written, oral and visual form, with the utmost respect that should be expected from future academics, scientists or health professionals. Your class participation must also be in line with the Code of Student Conduct and Disciplinary Procedures and with other policies and positions adhered to in this class as outlined below.

Course materials

There are no required textbooks for this class, and assessments will be exclusively based on material provided through myCourses. However, the following textbooks are recommended to supplement your learning in this course and in future practice related to this course:

Chaffin DB, Andersson GBJ, Martin BJ. Occupational Biomechanics (4th ed.), New-York: Wiley-Interscience. Available to order online.
Kroemer K, Kroemer H, Kroemer-Elbert K. Ergonomics – How to Design for Ease and Efficiency. (2nd ed.), Englewood Cliffs, NJ: Prentice-Hall. Available to order online.
Konz S, Johnson S. Work Design. Occupational Ergonomics (7th ed.), Scottsdale: Holcomb Hathaway.

You may use previous editions or other equivalent textbooks- however, we are not responsible for any discrepancy between those other materials and the recommended textbook. For help accessing or using the course material, please consult McGill's Learning Resources. You can also download the myCourses Pulse mobile app to stay connected and on track.

Class recordings

Lectures will not be recorded; however, all class materials will be accessible remotely, including the possibility to request remote meetings.

Course content

Week	Topics	Assignments
1	Thursday Aug. 31st: Intro to the course; Intro to Ergonomics	Posting of office ergo assignment guidelines
2	TH Sept. 5-7th: Anthropometry; Office ergonomics	Anthropometry exercise; work on office ergo assignment
3	TH Sept. 12-14th: Office Ergo & related health issues	work on office ergo assignment
4	T Sept. 19th: Physical/Performance Demands Analysis (PDA) H Sept. 21st: Ergo assessment tools-1: RULA, REBA, JSI, QEC	**Office ergo assignment due Tuesday Sept. 19th noon**
5	TH Sept. 26-28: Ergo assessment tools-2: TLV, Rogers, OWAS	Work on term project proposal
6	T Oct. 3rd: Ergo assessment tools-3: Snook, NIOSH, ALLA **H Oct. 5th: flipped class (term project "pitches"), optional**	Work on term project proposal
7	**T Oct. 10th: Fall reading break (* no classes*);** H Oct. 12th: mid-term material completion, recap	**Term project proposal & client form due Thursday 4pm**
8	**T Oct. 17th: ** in-class mid-term exam **** H Oct. 19th: ABC of Musculoskeletal Disorders (MSDs)	Study for mid-term exam, get project proposal feedback
9	TH Oct. 24-26th: Neck and upper limb MSDs; tools design	Work on term project
10	TH Oct 31st – Nov. 2nd: Spine and lower limb MSDs; manual material handling problem solving	Work on term project
11	TH Nov. 7 – 9th: Occupational biomechanics	Work on term paper & poster
12	TH Nov. 14-16th: Occupational physiology	Work on term paper & poster
13	T Nov. 21st Personal & Psychosocial factors **H Nov. 23rd: term project poster presentation (A)**	Work on term paper & poster
14	**Tuesday Nov. 28th: term project poster presentation (B)** Thursday Nov. 30th: no class	**Poster file due Thursday Nov. 30th 4pm (email)**
15	Tuesday Dec. 5th: Class time taken to finalize term papers	**Term paper due Tuesday Dec. 5th 4pm (email)**

Evaluation

Office ergonomics assignment:	10%
Mid-term in-class exam:	25%
Term project	
proposal & client ID form (mandatory)	5%
Layperson poster / infographic – presentation	5%
Layperson poster / infographic – document	10%
Scientific paper	20%
Final exam (centrally scheduled):	25%
TOTAL:	**100%**

Supplementary assignments
There will be no supplementary assignments available to add to the evaluation plan.

Consequences of late submission of papers
There will be a 10% mark deduction for each late day that a paper is submitted to the instructor.

Marks for group work
Along with both group papers, you will submit an Appendix containing a short description of each group member's contribution to the group paper. All group members will receive the same mark on their group work unless discussed with all group members and agreed otherwise.

Exam descriptions

Both the mid-term and final exams are to be taken as written exams. The mid-term exam will contain various types of questions and will take place in class, during the 1h20 class time. The final exam will focus more heavily (approximately 80%) on the material covered after the mid-term exam. The final exam will take place sometime during the University-scheduled final exam period ***(December 7-21th).*** Students are responsible for ensuring that they are available for the exam to take place anytime during this period. Final exams cannot be accommodated around a student's travel schedule.

Assignment descriptions
Aside from the exams, you will be graded on two assignments: a shorter assignment on office ergonomics (by definition: work centering on the use of a computer), and a longer, term project where you will conduct a full ergonomic analysis of a work situation of your choice (excluding an office workstation), that will have to be approved following the submission of a proposal before you can conduct it. You will also be required to demonstrate proof of having secured a worker to analyze by having them complete and sign a form that you will submit along with your proposal. More information on both will be provided on MyCourses throughout the semester. Both assignments should normally be conducted in groups that you will form at your initiative.

McGill policy statements

Language of submission:

"In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives." (Approved by Senate on 21 January 2009)

« Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté, sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue. » (Énoncé approuvé par le Sénat le 21 janvier 2009)

Academic integrity:

"McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures" (Approved by Senate on 29 January 2003) (See McGill's guide to academic honesty for more information).

The work submitted for this assessment is expected to be your own. The use of technologies such as ChatGPT are prohibited and will be considered a violation of the Code of Student Conduct.

« L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et procédures disciplinaires. » (Énoncé approuvé par le Sénat le 29 janvier 2003) (pour de plus amples renseignements, veuillez consulter le guide pour l'honnêteté académique de McGill.)

Le travail présenté dans le cadre de cette évaluation est le vôtre. L'utilisation de technologies comme ChatGPT est interdite et sera considérée comme une infraction au Code de conduite de l'étudiant.

Additional statements

- Assessment: The University Student Assessment Policy exists to ensure fair and equitable academic assessment for all students and to protect students from excessive workloads.

- Basic needs: If you have difficulty affording food or if you lack a safe and stable place to live, and believe that these circumstances may affect your performance in this course, I encourage you to contact the Dean of Students, who can connect you with support services.

- Charter of Students' Rights: Additional policies governing academic issues that affect students can be found in the McGill Charter of Students' Rights.

- Copyright: © Instructor-generated course materials (e.g., handouts, notes, summaries, exam questions) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that copyright infringements can be subject to follow-up by the University under the Code of Student Conduct and Disciplinary Procedures.

- Respect for Diversity: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

- Extraordinary circumstances: In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

- Inclusive learning environment: As the instructor of this course, I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and/or Student Accessibility and Achievement.

- Intellectual property: I ask for everyone's cooperation in ensuring that the course material presented in this class are not reproduced or placed in the public domain. This means that each of you can use it for your own purposes, but you cannot allow others to use it by posting it online or giving it or selling it to others who may copy it and make it available. Thank you for your help with this.

- Land acknowledgement: McGill University is on land which long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge and thank the diverse Indigenous people whose footsteps have marked this territory on which peoples of the world now gather.

- Mercury course evaluations: Mercury course evaluations are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by e-mail when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students. Thank you in advance for providing us valuable feedback, which is used in a variety of ways by the Department and University to continue to improve our academic content.

- Preferred pronouns: Please contact the instructors if you would like us to refer to you by a different name than the name indicated in your student record or to inform me of your preferred pronouns.

- Respect: The University is committed to maintaining teaching and learning spaces that are respectful and inclusive for all. To this end, offensive, violent, or harmful language arising in course contexts may be cause for disciplinary action.

- Sustainability: McGill has policies on sustainability, paper use, and other initiatives to promote a culture of sustainability at McGill. See the Office of Sustainability.

- Text-matching: Work submitted for evaluation as part of this course may be checked with text-matching software within myCourses.

- Wellness: Many students may face mental health challenges that can impact not only their academic success but also their ability to thrive in our campus community. Please reach out for support when you need it; wellness resources are available on campus, off campus, and online.

- Workload management skills: If you are feeling overwhelmed by your academic work and/or would like to further develop your time and workload management skills, don't hesitate to seek support from Student Services.