

EDKP 444 ERGONOMICS (3 credits), Fall 2019
Department of Kinesiology & Physical Education, McGill University

Instructor: Julie Côté, PhD
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 Office hours MW 1:30 – 3:00pm **or by appointment**

Teaching Assistant: Erika Renda, M.Sc.
 Email: erika.renda@mail.mcgill.ca
 Availabilities: **by appointment only**

Time & location: Mondays – Wednesdays 4:05 – 5:25pm; Currie Gym 305/6
Format: Lectures and lab activities
Pre/co-requisites: EDKP 206 Introduction to Biomechanics or equivalent

Suggested (i.e. NOT mandatory) reference texts:

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. Lecture notes, reference articles and links to online documents will be available on MyCourses.

Description:

The course draws on knowledge of human biomechanics to examine the scope and nature of occupational (workplace) biomechanics and ergonomics, including: injury mechanisms, evaluation and assessment techniques, and adapting the work environment to minimize injury risk and optimize work production. These topics will be discussed in relation to occupational health and safety legislations.

Objectives:

- Further develop the student's understanding of biomechanics through applications relevant to the workplace;
- Become aware of the major risk factors associated with the development of workplace injuries and explore ways to account for them in work situations;
- Understand the role of the kinesiologist in dealing with occupational health issues.

STUDENT ASSESSMENTS

Short assignment: Office ergonomics analysis: 10%
 Term project: Non-office ergonomics analysis: 40%
 Mid-term project proposal: 10%,
 Final project: oral presentation: 10%, written report: 20%
 Exams: Midterm (25%); Final (25%)

Exams:

The midterm and final exams are both written exams. They will test students on theoretical and applied knowledge gained throughout the semester. The final exam is cumulative but weighted more heavily (approx. 75%) on the material covered after the midterm exam. The final exam will be centrally scheduled to take place sometime during the final exam period (**December 5-20th**). Students are responsible for ensuring that they are available for the exam to take place anytime during this period.

Assignment & Project:

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). More information on both will be provided on MyCourses. Both assignments should normally be conducted in groups of 4 that you will form at your initiative.

* All group members will receive the same mark on all components of the group assignments unless agreement is signed by all group members to request otherwise

** There will be 10% automatic deduction for every 24h an assignment is late being submitted.

*** There will be no supplementary work allowed and no reweighing of marks towards the final mark

Course schedule:

DATES	TOPICS
Week 1: W Sept. 4	Intro to the course; Intro to Ergonomics (guest lecture: Erika Renda)
Week 2: MW Sept. 9-11	Ergonomics intervention process (PDA, participatory ergonomics); anthropometry
Week 3: MW Sept. 16-18	Principles of office ergonomics; Macro-ergonomics (workstation layout)
Week 4: MW Sept. 23-25	Risk factors, mechanisms of Musculoskeletal Disorders
Week 5: MW Sept. 30, Oct. 2	MSDs of the neck and upper limbs Assessment tools and questionnaires-1: RULA, REBA, JSI, QEC
Week 6: MW Oct. 7-9	Assessment tools and questionnaires-1 & 2: TLV, Rogers, OWAS, others Term project proposals due Wednesday 4:05pm (email)
Week 7: MW Oct. 14-16	Hand tool ergonomics; Mid-term exam (in class Wednesday)
Week 8: MW Oct. 21-23	MSDs of the back and lower limbs Office ergonomics assignments due Wednesday 4:05pm (email)
Week 9: MW Oct. 28-30	Assessment tools & questionnaires-3: manual material handling: NIOSH
Week 10: MW Nov. 4-6	Assessment tools & questionnaires-3 & 4: NIOSH, Snook
Week 11: MW Nov. 11-13	Occupational biomechanics: measurement tools, their use in research literature
Week 12: MW Nov. 18-20	Occupational physiology: selected issues (e.g. environmental & systems)
Week 13: MW Nov. 25-27	Psychosocial and personal factors relevant to occupational health Term project oral presentations – GROUPS A
Week 14: M Dec. 2	Term project oral presentations – GROUPS B

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 (see www.mcgill.ca/students/srr/honest/ for more information).

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 des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site www.mcgill.ca/students/srr/honest/).

I encourage you to visit the above mentioned websites as soon as possible to insure that you are aware of the definitions of cheating, plagiarism and other academic offences that are used by McGill. Simply taking this initiative may help you avoid accidental and unfortunate situations. You are responsible for informing yourself to avoid such situations ("I didn't know" is not a valid defense in case there is evidence of plagiarism).

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 any 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.

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).

Please contact the instructor at the beginning of the semester should you wish to explore this option further.

Additional policy statements:

Instructor generated course materials (e.g., handouts, notes, summaries, exam questions, etc.) 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 infringements of copyright can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures.

"[End-of-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."

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 the [Office for Students with Disabilities](#), 514-398-6009.

McGill has policies on sustainability, paper use and other initiatives to promote a culture of sustainability at McGill." (See the [Office of Sustainability](#).)

If this applies to you, please visit the following link describing the student's responsibility concerning McGill's policy on accommodation for religious holidays:
https://mcgill.ca/secretariat/files/secretariat/religious_holy_days_policy_on_accommodation_of.pdf

Additional policies governing academic issues which affect students can be found in the McGill Charter of Students' Rights (see [document](#)).