

School of Kinesiology Faculty of Health
Sciences Western University

**KIN 3457A - Cognitive Ergonomics
Fall 2018**

Instructor: Anita Christie, PhD

Office: AHB 3G16

Location: FNB 1240

Office Hours: By appointment

Lectures: Tuesday 8:30-10:30

Phone: 519-661-2111 x

Thursday 8:30-10:30

Email: achris@uwo.ca

TA: Josie Ward (jward88@uwo.ca)

Michael Gaspar (mgaspar5@uwo.ca)

NOTE: All course information including grades, assignment outlines, deadlines, etc. are available via OWL. Check the website regularly for course announcements.

Calendar Course Description:

Cognitive ergonomics is concerned with mental processes, such as perception, decision making, memory, reasoning, and response execution, as they affect interactions among humans and other elements of a work system. Relevant topics include skilled performance, attention, distraction, human error, work stress, risk perception, and Kansei engineering as these may relate to human-system design, safety and productivity. Assessment methodologies include hierarchical task analysis, cognitive task analysis, mental workload, human error identification/accident investigation, and situation awareness assessment.

My Course Description:

Cognitive ergonomics is concerned with how mental processes affect interactions among humans and other elements of the system to affect safety and productivity. Relevant topics include safety culture/climate, risk perception, accident analysis, attention and distraction, product design, injury prevention, and productivity. Ergonomic tools include: behavioral observation, hierarchical task analysis, usability analysis, safety culture assessment, safety audit. ***It is very important to note that while the description above is focused on content topics, the course is predominantly aimed at acquainting students with how cognitive ergonomists think. In this light, class/assignment process is much more important than topical content.***

Anti-requisite(s), Pre-requisite(s), Co-requisite(s)

You are responsible for ensuring that you have successfully completed all course pre-requisites, and that you have not taken an anti-requisite course.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Course Format:

Lectures: Tuesday/Thursday 8:30-10:30

Location: FNB 1240

Recommended Text:

Texts from which some topics/materials for the course have been gleaned:

- N. Stanton, A. Hedge, K. Brookhuis, E. Salas, & H. Hendrick (2005). Handbook of Human Factors and Ergonomics Methods. NY: CRC Press. [available online from Library]
- N.A. Stanton, P.M. Salmon, G.H. Walker, C. Baber, & D.P. Jenkins (2005). Human factors methods: A practical guide for engineering and design. Burlington, VT: Ashgate Publishing Ltd. [available online from Library]

Learning Outcomes:

Upon completion of this course students will be able to:

- appreciate issues germane to both ergonomic research and consulting. The learning culture for this class is to treat students as ergonomic consultants and to expect their behavior to mimic that of a professional in the field.
- Understand and be able to think with example concepts/topics in cognitive ergonomics.
- have practical experience using some of the knowledge and methodologies employed in the field to understand safety promotion/injury prevention, work design, and work/job assessment. practice being a professional (having pride in your work) with minimal direction,
- complete application-based assignments,
- practice being a self-directed and self-reflective learner (i.e., student to be a co-learner and co-leader in the course)
- develop their listening skills,
- practice reading & thinking critically and creatively,
- practice effective (literature) search skills,
- improve their communication skills.

Required Course Material:

All required readings will be posted on OWL.

Course Evaluation Summary: (this is an example)

1. Quizzes (30%)
2. Assignments (60%)
3. Self reflection (10%)

Course Evaluation Details:

1. 8 quizzes on assigned readings (will use the best 6 for your grade) (30%)
2. Assignments (60%)
 - Playground safety (20%)
 - Observational analysis of pedestrian safety on campus (20%)
 - Attitudes about texting and driving (20%)
3. Self reflection (10%) – you as a learner in the course (handed in on the last day of class – 1-2 page assessment of your performance) – 5% a self grade and 5% the professor's assessment of the quality/depth of self-reflection

Course/University Policies

1. **Lateness/Absences:** Assignments are due by 4:00pm on the due date. Assignments will lose 33% per day late (first late day begins at 4:01 pm of the assignment due date), unless permission to hand the assignment in at an alternate time/date is granted prior to the assignment due date. Electronic submission of assignments will not be accepted (unless otherwise specified) under any circumstances. Appropriate documentation for assignments worth less than 10% should be submitted to the instructor. A missed quiz, if applicable without appropriate documentation will result in a zero (0) grade.

2. **Documentation for Accommodation (Illness, Medical/Non-Medical Absences):**

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. Illness may be acute (short term), or it may be chronic (long term), or chronic with acute episodes. The University further recognizes that medical situations are deeply personal and respects the need for privacy and confidentiality in these matters. However, in order to ensure fairness and consistency for all students, academic accommodation for work representing 10% or more of the student's overall grade in the course shall be granted only in those cases where there is documentation indicating that the student was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities.

A UWO Student Medical Certificate (SMC) is required where a student is seeking academic accommodation. This documentation should be obtained at the time of the initial consultation with the physician or walk-in clinic. An SMC can be downloaded under the Medical Documentation heading of the following website:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Documentation is required for non-medical absences where the course work missed is more than 10% of the overall grade. Students may contact their Faculty Academic Counselling Office for what documentation is needed.

Whenever possible, students who require academic accommodation should provide notification and documentation in advance of due dates, examinations, etc. stating specific reasons and dates. Students must follow up with their professors and their Academic Counselling office in a timely manner. Documentation for medical requests for accommodation must be submitted within two (2) business days after the end date on the documentation, to the appropriate Academic Counselling Office of the student's Faculty of registration. For KIN students, you may go to the School of Kinesiology in 3M Centre room 2225 **NOT** to the instructor. It will be the Academic Counselling office that will determine if accommodation is warranted.*

An "Accommodation Consideration Request Form" found online

https://www.uwo.ca/fhs/kin/undergrad/files/accommodation_request.pdf or in the Kinesiology Undergraduate Office" for ALL accommodation requests must be submitted into the appropriate Academic Counselling office of the student's Faculty/School of registration. These documents will be retained in the student's file, and will be held in confidence in accordance with the University's Official Student Record Information Privacy Policy.

3. **Grades:** Where possible assignment objectives and rubrics will be posted on OWL. Should you have a concern regarding the grade you received for an assignment or feel that it is unfair in any way, you must wait 24 hours from the receipt of the assignment to approach the instructor or TA. In doing so, please make an appointment and prepare in writing, with evidence, why you feel your grade is inappropriate. Please be aware that in requesting a grade reassessment, your grade could go up/down/or stay the same. Note that calculations errors (which do occur!) should be brought to my attention immediately.
15% of course grades will be posted by the last day to drop a course.

A+	90-100	<i>One could scarcely expect better from a student at this</i>
A	80-89	<i>Superior work that is clearly above average</i>
B	70-79	<i>Good work, meeting all requirements and eminently</i>
C	60-69	<i>Competent work, meeting requirements</i>
D	50-59	<i>Fair work, minimally acceptable.</i>
F	below 50	<i>Fail</i>

4. **Scholastic offences:** They are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

A) Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar). All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between Western University and Turnitin.com <http://www.turnitin.com>

B) Computer marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

5. **Formatting** (as recommended by the course instructor): example- APA style is the approved style of writing for all assignments produced for this course. Please refer to Western University Library webpage for information on citation style and format or consult the APA publication manual: Publication manual of the American Psychological Association (6th ed.). (2009). Washington, DC: American Psychological Association.

6. According to the **Examination Conflict policy**, Please see the Office of the Registrar policy on Exam Conflict and Multiple Exam Situations
www.registrar.uwo.ca/examinations/exam_schedule.html

7. **Classroom Behaviour:** Class will begin promptly at the time specified at the top of page one of this syllabus. In the event that you must arrive late, please enter the classroom with a minimal disturbance to the class. Please keep all electronic devices on silent and avoid distracting classmates.

8. Electronic Device Usage:

During Exams - Unless you have medical accommodations that require you to do so, or explicit permission from the instructor of the course, you may not use any of the following electronic devices during ANY of the tests, quizzes, midterms, examinations, or other in-class evaluations: cellphones, smart phones, smart watches, smart glasses, audio players or recorders of any sort, video cameras, video games, DVD players, televisions, laptop/notebook/netbook computers, flashlights or laser pointers.

During Lectures and Tutorials: Although you are welcome to use a computer during lecture and tutorial periods, you are expected to use the computer for scholastic purposes only, and refrain from engaging in any activities that may distract other students from learning. Please be respectful to your fellow students and turn the sound off. If the professor receives complaints from other students regarding noise or other disruptive behavior (e.g. watching videos on YouTube.com, updating your Facebook status, playing Solitaire), your classroom privileges will be revoked. From time to time, your professor may ask the class to turn off all computers, to facilitate learning or discussion of the material presented in a particular class. **Unless explicitly noted otherwise, you may not make audio or video recordings of lectures – nor may you edit, re-use, distribute, or re-broadcast any of the material posted to the course website.**

9. **Health and Wellness:** As part of a successful undergraduate experience at Western, we encourage you to make your health and wellness a priority. Western provides several on-campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your degree. For example, to support physical activity, all students receive membership in Western's Campus Recreation Centre as part of their registration fees. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page (<http://www.music.uwo.ca/>), or the McIntosh Gallery <http://www.mcintoshgallery.ca/>

Further information regarding health and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<http://www.health.uwo.ca/>) for a complete list of options about how to obtain help.

STUDENT CODE OF CONDUCT

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at Western University, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit <https://www.uwo.ca/univsec/pdf/board/code.pdf>

ENGLISH PROFICIENCY FOR THE ASSIGNMENT OF GRADES

Visit the website http://www.uwo.ca/univsec/pdf/academic_policies/exam/english.pdf

SUPPORT SERVICES

There are various support services around campus and these include, but are not limited to:

1. *Student Development Centre* -- <http://www.sdc.uwo.ca/ssd/>
2. *Student Health & Wellness* -- <http://www.health.uwo.ca/>
3. *Registrar's Office* -- <http://www.registrar.uwo.ca/>
4. *Ombudsperson Office* -- <http://www.uwo.ca/ombuds/>

Potential Lecture Topics (topics may change)

As one might imagine, cognitive ergonomics is a vast field that covers a multitude of topics. My intent for the lectures is to provide a few topical examples. Most importantly, my goal in the class is to get you to think as an ergonomist. For example, many students in past classes said the course changed how they see the world. They see safety issues that before the class would have gone unnoticed.

Introduction: What is Cognitive Ergonomics – information processing, micro and macro ergonomics, a systems approach

“Workplace” observation

Road design and pedestrian safety (on campus)

Safety of playground equipment & children’s risk taking

Risk perception & risk homeostasis

Hierarchical task analysis (HTA)

Organization and safety culture

Mental Workload assessment

Attention, distractions, cell phone use & driving safety

Product design & usability