

**KIN 3457A – Cognitive Ergonomics  
Fall 2023**

<b>Instructor:</b> Dr. Kevin Boldt <b>Email:</b> <a href="mailto:kboldt@uwo.ca">kboldt@uwo.ca</a>  <b>TAs:</b>	<b>Lectures:</b>  <b>Tutorial:</b>  <b>Instruction Mode:</b> in-person
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**NOTE:** All course information including grades, assignment outlines, deadlines, etc. are available via OWL. Check the website regularly for course announcements.

**Calendar Course Description (including prerequisites/anti-requisites):**

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.

**Antirequisite(s):** Kinesiology 3371A (taken in 2010-11); the former Kinesiology 4456A/B.  
Extra Information: 3 lecture hours, 1 tutorial hour

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

1. Describe cognitive processes and how breakdown of these processes results in risk to safety or performance of a task.
2. Understand key ergonomics approaches to facilitating cognition and mitigating risk.
3. Understand and be able to think with example concepts/topics in cognitive ergonomics.
4. 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.
5. Work effectively in small teams.
6. Demonstrate professionalism through listening, and through written and oral communication.
7. Demonstrate creativity and critical thinking in problem solving.

**Course Schedule:**

<b>Week</b>	<b>Topics</b>	<b>Dates</b>
Week 1	Intro and Definitions	September 8
Week 2	Quantifying Ergonomics & Perception	September 13, 15
Week 3	Memory & Learning	September 20, 22
Week 4	Attention and Dual-Task Control	September 27
Week 5	Decision Making & Problem Solving	October 4, 6
Week 6	Fitts Law & Hicks Law	October 11, 13
Week 7	Midterm	October 18, 20
Week 8	Driving	October 25, 27
<b>*Reading Week*</b>		<b>October 30-November 5</b>
Week 9	Engineering Controls	November 8, 10



## Course/University Policies

1. The website for Registrarial Services is <http://www.registrar.uwo.ca>. In accordance with policy, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

### 2. Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, in the Academic Calendar ([westerncalendar.uwo.ca](http://westerncalendar.uwo.ca)).

#### **Plagiarism**

Student work is expected to be original. Plagiarism is a serious academic offence and could lead to a zero on the assignment in question, a zero in this course, or your expulsion from the university. You are plagiarizing if you insert a phrase, sentence or paragraph taken directly from another author without acknowledging that the work belongs to him/her. Similarly, you are plagiarizing if you paraphrase or summarize another author's ideas without acknowledging that the ideas belong to someone else. All 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 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 ([www.turnitin.com](http://www.turnitin.com)).

## Personal Response Systems

circumstances are students expected to submit rationales for (or documentation of) any absences, to course instructors. Students are, however, required to follow-up with course instructors, in a timely fashion, to identify the ways in which the academic consideration will be implemented.

### **Examination Conflicts**

A student completing tests or examinations with flexible submission times (e.g., where one or more evaluation is a take-home assessment) cannot request alternative arrangements unless a conflict cannot be avoided by rescheduling writing the exam to a different time within the window specified by the instructor. This applies to direct conflicts as well as “heavy load” conflicts (e.g., three exams within a 23-hour period). The student should discuss any concerns about a potential conflict and/or request academic considerations with their academic counselling unit prior to the deadline to drop a course without academic penalty.

