

The University of Western Ontario
School of Kinesiology

KIN 441a Introduction To Ergonomics

Instructor: Kent Gillin, M.Sc., Ph.D. (candidate)

Lectures: Tues. 8:30am – 10:30am, Thurs. 8:30am – 9:30am

Lecture Room: Room 3250 3M Centre

Course Lecturer: Kent Gillin, M.Sc., Ph.D. (candidate) ekgillin@golden.net

COURSE DESCRIPTION:

Theoretical research is taught throughout your academic career. This program will emphasize how to utilize the theoretical principles of biomechanics, physiology, psychology and sociology in applying ergonomics to minimize injury potential. Task analyses and physical demands analyses will be studied in conjunction with workers, employers and government in the context of environment, occupation and legislative responsibilities.

Antirequisite: HS 441a/b

Prerequisites: HS 203a/b OR KIN 222a/b OR Anatomy 221 OR Anatomy 319;
KIN 230a/b and KIN 241a/b (admission may be granted with instructor approval)

COURSE FORMAT:

Three lecture hours per week, One group assignment, half course

STUDENT EVALUATION:

Midterm Exam	25%
Practical Evaluation	35%
Final Exam	40%

COURSE OBJECTIVES:

- 1) Understand basic ergonomics terminology
- 2) Apply ergonomic principles to real world examples
- 3) Access legislative requirements from an occupational and environmental perspective

COURSE TEXT:

Applied Ergonomics: Occupational and Environmental Perspectives

(available at campus bookstore)

COURSE CONTENT:

- 1) Define occupational and environmental ergonomics terminology
- 2) Introduce physical aspects of injury mechanisms
- 3) Introduce psychological aspects of injury mechanisms
- 4) Introduce sociological aspects of injury mechanisms
- 5) Introduce the environmental aspects of injury mechanisms
- 6) Practical evaluation of the workplace
- 7) Introduce legislative responsibilities required of employees and employers
- 8) Summarize what it takes to organize and operate an ergonomics department
- 9) Understand WSIB
- 10) Introduce and understand legislation pertaining to ergonomics
- 11) Introduce participative ergonomics process
- 12) Understand our aging workforce and ergonomic needs

Course Outline

Week 1	Date	Topics
Define occupational and environmental ergonomics terminology	Thursday September 8, 2005	Occupational and Environmental Terminology Explained
		Mechanisms and Tools Explained
		Legislative Terminology Explained
Week 2	Date	Topics
Introduce physical aspects of injury mechanisms	Tuesday September 13, 2005	Injury Mechanisms Acute Chronic
		Acute and Chronic Biomechanical Aspects
	Thursday September 15, 2005	Acute and Chronic Physiological Aspects
Week 3	Date	Topics
Introduce psychological aspects of injury mechanisms	Tuesday September 20, 2005	Acute and Chronic Psychological Mechanisms
		Case Study 1
	Thursday September 22, 2005	Case Study 2
Week 4	Date	Topics
Introduce sociological aspects of injury mechanisms	Tuesday September 27, 2005	<ul style="list-style-type: none"> Acute and Chronic Sociological Mechanisms
		<ul style="list-style-type: none"> Case Study 1
	Thursday September 29, 2005	<ul style="list-style-type: none"> Case Study 2 Conditions

Week 5	Date	Topics
Introduce the environmental aspects of injury mechanisms	Tuesday October 4, 2005	Acute and Chronic Environmental Injury Mechanisms
		WHMIS
	Thursday October 6, 2005	DSR
Week 6	Date	Topics
Practical evaluation of the workplace: Part 1	Tuesday October 11, 2005	Introduction to Task Analysis
		Introduction to PDA
Mid-term (25%)	Thursday October 13, 2005	Mid-term (25%)
Week 7	Date	Topics
Practical evaluation of the workplace: Part 2	Tuesday October 18, 2005	Introduction to SNOOK
		Introduction to NIOSH
	Thursday October 20, 2005	Practice Examples
Week 8	Date	Topics
Practical evaluation of the workplace: Part 3	Tuesday October 25, 2005	Putting it all together
		Practice Examples
	Thursday October 27, 2005	Practice Examples
Week 9	Date	Topics
Introduction to legislative responsibilities required of employees and employers	Tuesday November 1, 2005	Legislation and how to find it
		Employee Responsibilities
	Thursday November 3, 2005	Employer Responsibilities
Week 10	Date	Topics
Summarize what it takes to organize and operate an ergonomics department	Tuesday November 8, 2005	Communication Skills
		Practice Skills
	Thursday November 10, 2005	Practice Skills

Week 11	Date	Topics
Understanding WSIB	Tuesday November 15, 2005	Understanding WSIB
	Thursday November 17, 2005	Appeals
Week 12	Date	Topics
Practical Ergonomic Auditing	Tuesday November 22, 2005	Auditing Basics
		Ergonomic Audit
	Thursday November 24, 2005	Practical Audit
Week 13	Date	Topics
Legislation	Tuesday November 29, 2005	Introduction
		Federal Provincial International Workplace
Group Assignment Due (35%)	Thursday December 1, 2005	WSIB and Ergonomic Costs
Week 14	Date	Topics
Participative Ergonomic Process	Tuesday December 6, 2005	Assessment
		Change Management
	Thursday December 8, 2005	Video Analysis
Week 15	Date	Topics
Understanding Our Aging Workforce	Tuesday December 13, 2005	Changes and Aging
		Future Considerations
	Thursday December 15, 2005	Review
Week 16	Date	Topics
Final Exam (40%)	Final Exam (40%)	Final Exam (40%)

INTRODUCTION

Injury mechanisms and healthy work environments must be understood in order to avoid past mistakes. Failure to recognize and intervene when near misses happen in the workplace has been a major reason for ongoing ergonomics problems. Your ability to understand and implement ergonomically sound programs depends on your unique communication skills. These skills are imperative when negotiating workplace changes as well as when programs are initiated for the first time. Even though you are the expert in many areas there is nothing that will implement an idea faster than making the idea that of the department or work team.

Each of the sections in this book follows the course outline. Sample questions are included to assist in understanding and integration of concepts. The best approach to gaining an understanding of ergonomics is to practice implementation of theory. Practical application of theoretical ergonomic principles is the objective of the course.

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