

Ergonomics and Human Factors in Safety (OSHA 2305)

CREDIT

3 semester credit hours (3 hour lecture)



**LAMAR INSTITUTE
OF TECHNOLOGY**

MODE OF INSTRUCTION

Face to Face. Wednesday 7.00pm – 9.30pm

PREREQUISITE/CO-REQUISITE:

Passed the writing portion of TSI or other accepted testing instrument.

COURSE DESCRIPTION

The relationship of human behavior and ergonomics as applied to workplace safety.

COURSE OBJECTIVES

Upon completion of the course the student will be able to:

1. Explain the psychology of human behavior as it relates to workplace safety.
2. Identify ergonomic hazards; recommend appropriate controls.
3. Relate the human and workplace factors which contribute to ergonomic hazards.

INSTRUCTOR CONTACT INFORMATION

Instructor: **Rueben Reyes**

Email: rreyes@lit.edu

Office Phone: 409 247 5283

Office Location: MPC 239

Office Hours: **Monday – Thursday 2.00-5.00pm. Friday 11.00am-12.00pm**
(Appointment Recommended).

REQUIRED TEXTBOOK AND MATERIALS

1. ERGONOMICS: Foundational Principles, Applications, and Technologies Author: Pamela McCauley Bush, PhD, CPE. CRC Press. ISBN: 978-1-4398-0445-2.
2. USB Flashdrive.

ATTENDANCE POLICY

This is an attendance based class. Attendance is required for all scheduled lectures and activities. Attendance and participation account for 10% of the overall class grade (as shown in course evaluation). 3% points will be deducted from your overall grade (up to a maximum of 10%) for each unexcused absence.

An excused absence will only be granted if the student provides a written justification (for example, by email) which is vetted and approved by the instructor (such as a sickness/injury, or job related requirement). If the student is applying for a job related excused absence documentation must be provided from their employer, including their supervisor's contact information. A sick note from a Doctor or hospital is required for long term sickness/injury.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
<u>Week 1</u> <u>1/21/26</u>	Course Introduction and Policies. Defining Ergonomics and human factors in safety.	Week 1 Powerpoint	
<u>Week 2</u> <u>1/28/26</u>	Foundational Ergonomics	Week 2 Powerpoint Chapter 1	
<u>Week 3</u> <u>2/4/26</u>	Systems of the Body	Week 3 Powerpoint Chapter 2 Pages 37-47	
<u>Week 4</u> <u>2/11/26</u>	Muscular Work and Nervous Control of Movements	Week 4 Powerpoint Chapter 4 Pages 106-112	
<u>Week 5</u> <u>2/18/26</u>	Exam 1 (2/18/26). Followed by Anthropometry	Week 5 Powerpoint Chapter 5	<u>Exam 1 -</u> <u>On Week 1 – 4 Material</u> <u>Wednesday 2/18/26</u>
<u>Week 6</u> <u>2/25/26</u>	Design of Workplaces and Hand Tools	Week 6 Powerpoint Chapter 6	
<u>Week 7</u> <u>3/4/26</u>	Work-Related Musculoskeletal Disorders (WMSDs)	Week 7 Powerpoint Chapter 7	
<u>Week 8</u>	SPRING BREAK (NO CLASSES)		
<u>Week 9</u> <u>3/18/26</u>	Heavy Work & Evaluating Physical Workloads and Lifting	Week 9 Powerpoint Chapter 8 Pages 241-255	
<u>Week 10</u> <u>3/25/26</u>	Manual Material Handling and NIOSH Lifting Equation, plus Automated Guided Vehicles (AGVs)	Week 10 Powerpoint Chapter 8 Pages 258-266	<u>Outline of Proposal for Class Presentation to be submitted in writing on Wednesday 3/26/25</u>
<u>Week 11</u> <u>4/1/26</u>	Exam 2 (4/1/26). Followed by intro. to Job Demands: Workplace Stress and Fatigue	Week 11 Powerpoint Chapter 8 Pages 267-275	<u>Exam 2</u> <u>On Week 5 – 10 Material</u> <u>Wednesday 4/1/26</u>

<u>Week 12</u> <u>4/8/26</u>	Job Demands: Workplace Stress and Fatigue	Week 12 Powerpoint Chapter 8 Pages 267-275	
<u>Week 13</u> <u>4/15/26</u>	Information Ergonomics, Controls, and Displays	Week 13 Powerpoint Chapter 9	
<u>Week 14</u> <u>4/22/26</u>	How to Implement An Ergonomics Program	Week 14 Powerpoint	
<u>Week 15</u> <u>4/29/26</u>	Start Class Presentations of Selected Topic (4/29/26)		Class Presentations of Selected Topic commence, or printed OSHA 10 hour certificate of completion brought to class.
<u>Week 16</u> <u>5/6/26</u>	Exam 3 (5/6/26). Followed by conclusion of Class Presentations of Selected Topic.		Exam 3 On Week 11 – 14 Material Wednesday 5/6/26
<u>Week 17</u> <u>5/13/26</u>	Comprehensive Final Exam (5/13/26)		Comprehensive Final Exam Wednesday 5/13/26

****Due Dates and/or assignments are subject to change****

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

1. Class Attendance and Participation 10%
2. Three Class Tests (3 x 20%) 60%
3. Class Presentation of Selected Topic/Instrument 10%
4. Final Exam 20%

GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

ARTIFICIAL INTELLIGENCE STATEMENT

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard

or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

Course Requirements and Policies

1. All exams are worth 100 points. All exam questions are included in lecture materials and discussed in class.
2. In the event of an emergency and you are absent on test night, it is your responsibility to contact the instructor and schedule a makeup test as soon as possible.
3. Final grades are non-negotiable. No extra credit will be awarded.
4. Cheating on an exam is a violation of LIT Policy and will result in an "F" on your test. Please review the "Code of Conduct & Disciplinary Policy" and "Academic Dishonesty" in the LIT Student Handbook.
5. It is your responsibility to sign the attendance roster. No one else may sign the roll on your behalf. Please notify your Occupational Health and Safety Advisor if you will be absent for an extended period due to a work-related circumstance, or a medical quarantine or emergency, that prevents you from attending class. Your Occupational Safety and Health Advisor will authorize excused absences.
6. You are expected to be in class at class time. If you do find yourself in the position of arriving late due to unavoidable circumstances, please remember to sign the attendance roster when you arrive. Some lectures are short in length and coming in late may result in an absence.
7. You are required to stay the entire length of each lecture class unless dismissed, as a class, by the instructor.
8. Drop/Add/Withdraw – *It is the student's responsibility to make sure you are officially enrolled or dropped from this course.* If at any point you decide to drop a class, it is your responsibility to officially drop (i.e., using proper administrative offices/paperwork.) Any student who stops attending class and does not officially drop the course will be given an "F" as the semester grade.
9. Cell phones, headphones and any other electronic communication devices *will always be turned off* in class .
10. Campus policy dictates there is to be no eating , drinking or tobacco products in the classroom.
11. Please do not bring children to class. LIT policy states they cannot be in the classrooms.

12. CLASS MATERIALS NEEDED:

- **Laptop (if you have one)**
- **Pen/Pencil**
- **Paper or Note Cards for note taking**
- **Highlighter**

13. MISSED EXAM: If you are absent on exam day you **MUST** let the instructor know **PRIOR** to class either by phone or email. The missed exam **MUST** be made up the **FOLLOWING DAY**. **Failure to schedule a make up time with your instructor will forfeit your opportunity to take**

that exam. **IT IS THE STUDENTS RESPONSIBILITY TO REACH OUT TO THE INSTRUCTOR FOR THE ABSENCE AND MAKE UP TIME.** If the student fails to make up the exam in the appropriate time frame then they will receive a (0) ZERO for that exam.

14. CLASS ATTENDANCE/PARTICIPATION: Students are **REQUIRED** to participate in class discussions, work in groups, give verbal presentations and communicate in a professional manner. Failure to participate will result in points being deducted for that class day grade for attendance & participation.