

ENER 1330 – Syllabus
BASIC MECHANICAL SKILLS
3 Credit Hours, SCH (2-2)

Course Description: Basic mechanical skills using hand and power tools in an industrial environment. Topics include tool use and maintenance, lubrication, measuring, threads and fasteners, bench works, basic mechanical drawings, and basic shop calculations (English and metric). Also addresses rigging. Students will use basic hand, hand power, and some stationary power tools; select appropriate Bill of Materials (BOM); interpret basic mechanical drawings and perform associated calculations; apply measuring tools; perform part layout, drilling, location of hole centers; perform preventative maintenance on tools; describe basic lubrication practices; demonstrate basic rigging procedures; and employ good housekeeping, environmental awareness, safety procedures, sensory skills, and preventative maintenance.

Text, Supplies **1. Industrial Mechanics**, Fourth Edition, Albert W. Kemp,
 ISBN: 978082693712 and other materials to be specified at a later date.
Audel Millwrights and Mechanics Guide, 5th Edition
 Thomas B. Davis, Carl A. Nelson ISBN: 978-0-764-54171-1

Recommended:

2. Scientific calculator
3. Safety glasses

Goals and Objectives:

Competencies	Purpose and/or sample of real life applications	Skills used in class	Used throughout the course
Tool and device Identification	Be able to identify tools and devices used in industry	Identify and be able to use tools and devices	Yes
Precision instruments	Test, calibrate, and repair equipment using testing instruments	Test, calibrate, and repair equipment using testing instruments	Yes
Technical calculations	Calculate and measure various outputs	Learn Ohm’s Law and apply it to different projects	Yes
AC/DC Motors	Understand the difference in the two and the methods of operation	Install and use both type motors in projects	Yes

Projects	Create projects in a professional and realistic manner	Time management, organizational skills and presentation	Yes
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Students may perform the following tasks in order to maintain safe lab and classroom spaces:

- Participate in shop and classroom maintenance which may include, but not limited to sweeping, mopping, disposing of trash, cleaning work benches, organize tools and equipment, organize tool room, disinfect classroom tables and chairs.
- Disassemble discontinued lab training vehicles or equipment for salvage.
- Repurpose lab vehicles to be utilized in lab assignments.
- Other course related tasks as assigned by instructor.

Student Contributions/Absences/Drops

A failing grade will be given to students who do not attend class and do not drop. If you cannot attend class, please call and let me know before class, if at all possible. Projects will be a daily event and participation is mandatory.

Class Policies, Make up work

Make-up exams will be allowed only at the discretion of the instructor. However, classroom work **CANNOT** be made up.

Grading/Evaluation

In-class participation, plus performance on homework assignments, lab projects, major project, and exams form the basis for grading:

In Class Participation and Attendance	10%
Final Exam	20%
Lab Projects	20%
Exams	<u>50%</u>
Total	100%

Division Information

Dean: Curt Pervier
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Non-Discrimination Statement

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:

Tana Baker

Title IX Coordinator/Compliance Officer

3600 N. Garfield, SSC 131

Midland, Texas 79705

(432) 685-4781

tbaker@midland.edu

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

Americans with Disabilities Act (ADA) Statement:

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit www.midland.edu/accommodation and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.