



REEDLEY COLLEGE – MANUFACTURING TECHNOLOGY

SPRING 2021 MFGT 96-52645 POWER TRANSMISSION M-TH 7:30 AM-11:55 AM

4 Units, 9 weeks (03/15 - 05/21)

Instructor: Michael Ornelas
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Office: IND 23
Classroom: IND 17
Lab: IND 16
Office hours: **M** 12:00pm-12:30pm **VIRTUAL OFFICE VIA EMAIL**, **W** 7:00am-7:30am & 12:00pm-12:30pm **VIRTUAL OFFICE VIA EMAIL**, **TTH** 7:00am-7:30am & 3:00pm-3:30pm **VIRTUAL OFFICE VIA EMAIL**, **F** **VIRTUAL OFFICE_VIA EMAIL_9AM-10AM_**
michael.ornelas@reedleycollege.edu

Instructional Materials:

Text Book (Required): **INDUSTRIAL MAINTENANCE AND TROUBLESHOOTING**; 4th Edition, American Technical Publishers (ATP), Green, D, Gosse, F, J. **ISBN: 978-0-8269-3686-8**

Description:

This course will cover basic techniques of identifying worn sprockets, chain sizes, shaft alignment for electrical motor and gearbox connection, ordering parts, identification and application of industrial lubricants, troubleshooting facility lighting, working with conveyors and their components, and completing Preventive Maintenance utilizing a Work Order.

Expected Outcomes:

1. Understand how to change sprockets and chains and identify if they are worn.
2. Identify and order parts that are required to complete Preventive Maintenance tasks.
3. Remove and replace worn parts of conveyor. Troubleshoot conveyor systems for malfunctions.
4. Align electrical motor shaft to gearbox, to complete successful integration.
5. Integrate industrial lubricants within the proper application according to a process.

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► **Content and order may be changed as deemed necessary by the instructor.**

COURSE OUTLINE

Lecture Content:

1. **Sprockets**
 - a. Wear identification
 - b. Basic principles of sizing sprockets for a shaft
2. **Chains**
 - a. Identify elongation
 - b. Sizing and replacing
 - c. Splicing methods
 - d. Determining size for application
3. **Work Orders**
4. **Preventive Maintenance**
 - a. Scheduling
5. **Shaft Alignment**
 - a. Alignment methods
 - b. Identifying misalignment
 - c. Inspecting shaft for wear
6. **Conveyors**
 - a. Belt and roller rubber band replacement
 - b. Roller bearing inspection
7. **Ordering Parts**
 - a. Researching parts for order utilizing catalogs
8. **Lubricants**
 - a. Identification
 - b. Correct application
9. **Lighting**
 - a. Removing and replacing lamps/holder
 - b. Installing ballast

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Lab Content:

1. **Sprockets and chains**
2. **Work Orders and Preventive Maintenance**
3. **Shaft alignment**
 - a. Alignment methods
 - b. Misalignment indicators
 - c. Coupling connections
4. **Conveyors**
 - a. Belt splicing and tracking
 - b. Speed adjustments
 - c. Electrical controls
 - d. Safety
5. **Lighting**

Required Materials:

#2 Pencil/Eraser
Basic Calculator (not on cell phone)
3-ring Binder w/ Lined Paper
Clear Safety Glasses
Graph Paper
Scan-Tron #882E (50 front/50 back)

How class will be conducted:

- Lecture
- Demonstrations
- Lab Tasks/Assignments
- Homework Assignments
- Quizzes
- **Final Exam- T- 5/19/21 (SUBJECT TO CHANGE)**

Attendance:

- Arrive on time and prepared for class
- Attendance and participation is very important. You must attend class to participate and complete all the work.
- Do not leave the classroom or shop area without the instructor's permission. Knowledge of student's presence relates directly to student safety.
- Campus policy requires that all students who miss 2 consecutive weeks before the add/drop deadline to be dropped (**2 class sessions for a 9-week class**).

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- Campus policy requires students who have nonconsecutive absences which total the equivalent of two or more weeks are subject to being dropped from the class (**2 class sessions**).
- Two tardies are equivalent to one absence. If you are tardy you must check with the instructor to ensure you are not marked absent.
- Contact the instructor if you know you will be missing class. Failure to do so will directly affect the opportunity to make-up any work given the day of an absence.
- It is the student's responsibility to gather and complete any work missed during an absence.
- It is the students' responsibility to drop any classes they no longer wish to continue.
- Quizzes/tests may be made up at the instructor's direction.

Grading Procedure: May be changed as deemed necessary by the instructor

Grades are based on your weighted combined points earned in Lab and Lecture:

- | | |
|-----------------------|--------------|
| • Homework | 10% of grade |
| • Lab work | 30% of grade |
| • Tests | 20% of grade |
| • Class participation | 30% of grade |
| • Binder | 10% of grade |

Grading Scale:

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

Essential Information:

- Any assignment turned in up to one week late will receive 50% credit.
- Home work will not be accepted more than one week late.
- Attendance and participation is very important. You must be in class in order to participate and complete all the work.
- In the event of class being cancelled you will be notified by a sign on the door.
- Cheating and/or plagiarism will not be tolerated. A student will receive no credit for the assignment if, in the opinion of the instructor, the individual has cheated.
- Cell phones are **PROHIBITED** during lecture/lab. If family or work requires you to have either on, **PLEASE** select vibrate mode and text or talk outside of classroom/shop so not to disturb instruction.
- Foul language will not be tolerated, and student will be asked to leave the classroom if not contained.

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IMPORTANT DATES:

March 15 - May 21 (M-F) Short-term classes, second nine weeks

March 29 – April 2 (M-F) Spring recess (Classes reconvene April 6))

May 17-21 (M-F) Final Examinations

May 21 (F) End of Spring Semester 2021

May 21 (F) Graduation Exercises

Policies and Procedures

Failure to Attend Class

Failure to attend class on a regular basis will adversely affect your performance in this course. Plagiarism or cheating of any kind will result in a grade of “F” for this course. There are no makeup exams without prior permission of the instructor.

Required Reading

Required reading should be completed before the corresponding lecture/demonstration. All grades are final unless an error in math has been made by the instructor. The instructor reserves the right to adjust the course outline, scoring, grading, and content as needed.

Having Trouble?

If at any time you find you are having trouble succeeding in this course whether because of a change in your life circumstances or because of something you do not understand about the material – please see me. There are several services available to assist Reedley College students to succeed in their course work. I would be happy to recommend one of these to you.

Accommodations for students with disabilities:

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or section 504 of the Rehabilitation Act, please contact me as soon as possible so that reasonable efforts can be made to accommodate your needs.

Keep track of returned work.

You should save all your work until the end of the semester so you can double check the final grade earned as recorded by the instructor.

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