

# Understanding the Milling Machine

## Unit Outline

1. Project Team Members: Jay Kopp, Hector Martinez, Anthony Pondish, Conrad Spokus
2. Title of Course: Precision Machine Technology
3. Title of Unit or Project: Understanding The Milling Machine
4. Approximate length of Unit or Project: 3 Weeks
5. Brief description of the Unit or Project with an expected final outcome.

Students will prepare a group presentation for the Level I students, which will show the importance of knowing all about the milling machine and how this can provide them with larger paychecks, easier working conditions and a safer workplace. This presentation will include all the information that is gathered along their journey; It must contain the major components of the milling machine, its operation, and the need for proper maintenance.

6. Major Goals of Unit:

Students will be able to:

- a. Identify all the major components of the milling machine and demonstrate their use.
- b. Explain why it is important in industry to know how to operate and care for the milling machine.
- c. Understand that proper maintenance of the milling machine is critical to its lifespan and operation.
- d. Realize that attaining a thorough knowledge of speeds and feeds will provide them with greater rewards both monetarily and easier working conditions.
- e. Describe how this information is related to the drill press and lathe.

7. Sequence of balanced and integrated activities for students:

All of the following activities may be done in a group or individually and then assembled together to produce the final presentation.

1. Students will attend an Occupational Advisory Committee meeting. They will interview the members in attendance to find out what they can about the milling machine and its operation and maintenance.
2. Each student in the group will visit at least one area machine shop to view the milling machine in operation and interview a milling machine operator.
3. Each student must use the internet to justify why this knowledge is of the utmost importance regarding the safety aspects.

4. All students must read the milling machine chapter in the textbook so as to incorporate some of the technical data in their report regarding speeds and feeds.
5. Students will set a time frame to have these activities completed so as to meet and assemble this information in an interesting and presentable format.
6. Students will develop a quiz and administer it to the Level I students.

8. Checklist or rubric for assessment components:

1. Each member of the group will be required to submit a copy of what they gathered to the instructor for individual grading. This must be received by the instructor one week prior to the presentation. This will have a value of 25% and must include the criteria stated below.
  - a. Worker interview documentation
  - b. Advisory Committee member interview documentation
  - c. Evidence of the major components, operation and maintenance of the milling machine
  - d. Safety information acquired from internet sources
  - e. Speeds and Feeds data acquired from the textbook
2. The presentation will have a value of 50% and will be graded using the following criteria:
  - a. Gains attention of the group
  - b. Ease and friendliness of delivery and response to questions
  - c. Use of notes and audio and/or visual aids
3. The average of the quiz scores achieved by the Level I students will be given a value of 25%.
4. These scores will be totaled and used as 20% of the marking period grade.

8. Specific Standards addressed in this Unit or Project:

<u>Ref. #</u>	<u>Name of Standard</u>	<u>Title of Individual Standard</u>
1.1.8	PA-RWLS	Reading independently
1.1.11	PA-RWLS	Reading independently
1.2.8	PA-RWLS	Reading critically in all content areas
1.2.11	PA-RWLS	Reading critically in all content areas
1.3.8	PA-RWLS	Reading, analyzing and interpreting literature
1.3.11	PA-RWLS	Reading, analyzing and interpreting literature
1.4.8	PA-RWLS	Types of writing
1.4.11	PA-RWLS	Types of writing
1.5.8	PA-RWLS	Quality of writing
1.5.11	PA-RWLS	Quality of Writing
1.6.8	PA-RWLS	Speaking and listening
1.6.11	PA-RWLS	Speaking and listening
1.7.8	PA-RWLS	Characteristics and function of the English language
1.7.11	PA-RWLS	Characteristics and function of the English language
1.8.8	PA-RWLS	Research
1.8.11	PA-RWLS	Research
2.1.8	PA-M	Number, number systems and number relationships
2.2.8	PA-M	Computation and estimation
2.2.11	PA-M	Computation and estimation
2.4.8	PA-M	Mathematical reasoning and connections
2.4.11	PA-M	Mathematical reasoning and connections
2.5.8	PA-M	Mathematical problem solving and communication
2.5.11	PA-M	Mathematical problem solving and communication
2.6.11	PA-M	Statistics and data analysis
2.7.8	PA-M	Probability and prediction
2.7.11	PA-M	Probability and prediction