

CAMPUS NAME: Ankeny

COURSE TITLE: Engine Lathe Theory

COURSE NUMBER: MFG 250-1 / 250-2

SECTION NUMBER & CRN: 11665 / 11666

INSTRUCTOR INFORMATION

NAME: Dennis Knittel

EMAIL ADDRESS: dwknittel@dmacc.edu

PHONE NUMBER: 515-964-6451

FAX NUMBER: 515-964-6815

OFFICE LOCATION: Building 3E 104B

OFFICE HOURS/APPOINTMENTS: M-R 8:00-3:30 / F 11:00-2:00

INSTRUCTOR INTRODUCTION:

INSTRUCTOR WEB PAGE ADDRESS:

BLACKBOARD: <https://secure.dmacc.edu/myonlinelearning/login.aspx>

COURSE INFORMATION

SEMESTER/YEAR: FALL 2015

DATE SYLLABUS CREATED AND/OR REVISED: 5/1/15

DAYS & TIME & LOCATION: M-T 10:35-11:05 RM 122

START / END DATES: Aug. 20, 2015-Oct. 14, 2015 (SECTION 1)
Oct. 15, 2015- Dec. 10, 2015 (SECTION 2)

COURSE DESCRIPTION & CREDITS: 1 Credit Class

PREREQUISITES: NONE

CO-REQUISITES: MFG 251

COURSE COMPETENCIES:

During this course, the student will be expected to:

1. Explain the parts of the Turning Machines.
 - 1.1 Identify the most important parts of a lathe and their functions.
 - 1.2 List all of the lubrication points for a given type lathe.

- 1.3 Identify standard, quick-change and turret-type toolholders mounted on a lathe carriage.
- 1.4 Describe the type of tooling used on the tailstock.
2. Demonstrate an understanding of work holding devices.
 - 2.1 Explain the uses and care of independent and universal chucks.
 - 2.2 Explain the limitations and advantages of a collet.
 - 2.3 Describe how a collet is setup for use on a lathe.
 - 2.4 Explain the uses of, and differences between, drive and face plates.
3. Demonstrate an understanding of the carriage.
 - 3.1 Describe the relationship between longitudinal feeds and cross feeds.
 - 3.2 State the differences in types of cross feed screw micrometer collars.
 - 3.3 Describe the use of various feed levers.
 - 3.4 Explain how to set up to make facing cuts to a given depth and how to measure them.
4. Demonstrate knowledge of the proper care and use of pedestal grinding machines for tool grinding purposes.
 - 4.1 Describe how the pedestal grinder is used.
 - 4.2 Explain the term “ring test” on grinding wheel.
 - 4.3 Discuss the safety steps in using a pedestal grinder.
5. Demonstrate a knowledge of cutting tools.
 - 5.1 Explain the purpose of rake and relief angles.
 - 5.2 Explain the purpose of chip breakers.
 - 5.3 Describe the function of form tools.
 - 5.4 Name the advantages of using high-speed steel for tools.
 - 5.5 Explain when zero or negative rake should be used.
6. Demonstrate knowledge of center drilling in a lathe.
 - 6.1 Determine proper speed and feed for a given material and size.
 - 6.2 Name two reasons for center drilling a work piece in the lathe.
 - 6.3 Explain two causes of center drill breakage.
 - 6.4 Describe what happens when you drill too deeply with a center drill.
7. Demonstrate knowledge of turning in a lathe.
 - 7.1 Describe the correct setup procedure for turning between centers.
 - 7.2 Select correct feeds and speeds for turning operation.
 - 7.3 Detail the steps necessary for turning to size predictably.
 - 7.4 Explain the procedures for drilling, boring, reaming, knurling, recessing, parting and tapping in a lathe.

COURSE OVERVIEW:

An introductory level course explaining the basic operation and care of an engine lathe.

TEXTBOOKS & MATERIALS

REQUIRED TEXTBOOKS & ISBN: Machine Tool Practices 10th edition
ISBN-978-0-13-291265-5
0-13-291265-1

REQUIRED MATERIALS: Pencils, Calculator

OPTIONAL OR RECOMMENDED BOOKS/MATERIALS:

SOFTWARE APPLICATIONS:

Software notice: "All the software used in this class is copyrighted; therefore, it is not for distribution, copying, or personal use. This software is the property of Des Moines Area Community College."

COURSE POLICIES

ATTENDANCE/PARTICIPATION: Students are required to attend and be in class on time. If student misses class the student must call and inform the instructor of his/her absence. Students missing 10% or more of the classes will receive a failing grade.

GRADING CRITERIA:

Tool & Die scale

A	= 96.00% - 100%
A-	= 94.00% - 95.99%
B+	= 91.90% - 93.99%
B	= 89.80% - 91.89%
B-	= 87.80% - 89.79%
C+	= 85.70% - 87.79%
C	= 81.80% - 85.69%
C-	= 79.80% - 81.79%
D+	= 77.70% - 79.79%
D	= 74.81% - 77.69%
D-	= 72.80% - 74.80%

CLASSROOM CONDUCT: <https://go.dmacc.edu/handbook>

Conduct/discipline policy/academic standards, etc.

MISSED EXAMS: Students who miss an exam can make up exam if the instructor was notified of the absence before the test. If student fails to notify the instructor before a test is taken and misses the exam, the exam cannot be made up. Missed quizzes cannot be made up. Excused exams can be made up at the instructor's discretion. Students can only make up 2 tests.

LATE ASSIGNMENTS: 10% reduction, no credit after 3 days

EXTRA CREDIT: None

STUDY EXPECTATIONS: Note taking is very much required since we are working with handouts and formal textbook and we will be working with a wide variety of subject matter.

WEATHER POLICY: Individual circumstances such as health, childcare, rural roads, distance from the College, etc. can vary greatly among students and staff. It is always DMACC's goal to provide safe learning conditions, as well as provide the opportunity for students to attend classes when the vast majority is able to safely attend. The final decision to come to College can only be made by the individual student based on their specific extenuating

circumstances that may make it unsafe for them to travel. During adverse weather, DMACC faculty is considerate of students who are unable to attend classes due to unique extenuating circumstances. Notification of Campus/College closures will be sent out through the DMACC RAVE Alert System, posted to the DMACC webpage at www.dmacc.edu, and where possible sent to local media.

CLASS CANCELLATION PROCEDURE: It is the responsibility of each faculty member to notify their students (in addition to their dean or provost) through some predetermined means if they must postpone or cancel a specific class.

ACADEMIC DISHONESTY/PLAGIARISM: Students are required to do their own work. Students caught cheating or turning in someone else's work will receive a failing grade for that assignment.

It is important for you to be familiar with and follow DMACC's Academic Misconduct policy. Students are encouraged to review DMACC's Academic Misconduct Policy on-line at <https://go.dmacc.edu/handbook/polprocedures/pages/academicmisconduct.aspx> or in the DMACC Student Handbook.

COURSE SPECIFIC (LAB) SAFETY PROCEDURES:

DMACC INFORMATION

INSTRUCTOR HOME PAGES: <http://www.dmacc.edu/instructors>

ADD/DROP DATES: https://go.dmacc.edu/registration/pages/add_drop.aspx

Last day to drop classes: October 31, 2014

REFUND POLICY: <https://go.dmacc.edu/registration/Pages/refund.aspx>

SUPPORT SERVICES

SERVICES FOR STUDENTS WITH DISABILITIES:

https://go.dmacc.edu/student_services/disabilities

Any student with a documented disability who requires reasonable accommodation should contact the Disability Services Coordinator at **515-964-6850** or the counseling & advising office on any campus to apply for services.

COURSE SYLLABUS

DISCLAIMER: "This syllabus is representative of materials that will be covered in this class; it is not a contract between the student and the institution. It is subject to change without notice. Any potential exceptions to stated policies and requirements will be addressed on an individual basis, and only for reasons that meet specific requirements. If you have any problems related to this class, please feel free to discuss them with me."

NONDISCRIMINATION POLICY: Des Moines Area Community College shall not engage in or allow discrimination covered by law. This includes harassment based on race, color, national origin, creed, religion, sex (including pregnancy and marital status), sexual orientation, gender identity, age, disability and genetic information. Veteran status in educational programs, activities, employment practices, or admission procedures is also included to the extent covered by law. Individuals who believe they have been

discriminated against may file a complaint through the College Discrimination Complaint Procedure (ES4645). Complaint forms may be obtained from the Campus Provost's office, the Academic Dean's office, the Judicial Officer, or the EEO/AA Officer, Human Resources. For Title IX questions and concerns contact 515-964-6850.

Students who wish additional information or assistance may refer to Student Services procedure ES 4645 located at https://go.dmacc.edu/student_services/int. Click Policies & Procedures.

Employees and applicants who wish additional information or assistance may contact the **EEO/AA Officer**, Human Resources, Bldg. 1 on the Ankeny Campus, or refer to HR Procedures 3000, 3005, 3010, 3015, and 3020 at <http://www.dmacc.edu/hr/hrpp.asp>

Accommodations: The Program Development/Academic Support Services Director is the official Student Accommodation Officer/Section 504/ADA Coordinator for DMACC. The ADA Coordinator's office is located in Bldg. 6-10E on the Ankeny Campus and may be contacted by voice (515-964-6857). The ADA Coordinator is responsible for ensuring that the college complies with federal regulations that guarantee qualified students with disabilities equal access to all programs and services. Any student, faculty, or staff member may contact the ADA Coordinator's office for clarification of federal regulations, appeal of a grievance, or resolution of a disability-related problem.

SYLLABUS ADDENDUM

To access additional information related to DMACC policies and procedures that impact the classroom (i.e. use of technology, weather-related cancellations, classroom conduct, etc.), the DMACC student handbook, registration information (including add/drop dates and refund dates), student service information (including counseling and advising), the DMACC academic calendar, and campus-specific resources (i.e. Academic Achievement Center, library, computer, labs, etc.), go to <https://go.dmacc.edu/handbook> and click "Syllabus Addendum" in the left navigation.

If you do not have access to a computer and need a printed version of any of the information described above, contact your instructor.

