

Pittsburg State University
Department of Engineering Technology
Manufacturing ETECH

COURSE TITLE: MFGET 268-01, 02, 03. Manufacturing Methods I Lab
(Course Intended for Partial Fulfillment of the Pitt State Pathway Curriculum)

COURSE SCHEDULE:

268-01 Monday	2:00-3:40	Room S125
268-02 Tuesday	2:00-3:40	Room S125
268-03 Wednesday	2:00-3:40	Room S125

INSTRUCTORS:

Dr. Russell Rosmait
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COURSE DESCRIPTION:

MFGET 268 Manufacturing Methods I Laboratory. 1 hour. (2 hours laboratory). Laboratory experiences in manufacturing methods. Disassembly and fabrication problems and discussion on the manufacturing process. Small team projects. Corequisite: MFGET 263 Manufacturing Methods I

TEXTBOOK/MATERIALS REQUIRED:

KALPAKJIAN. *Manufacturing Engineering & Technology*. Pearson. (Latest Edition)
ANSI Z87 approved Safety Glasses-**Required**

COURSE OBJECTIVES:

Upon completion of this course the student should be able:

1. To function effectively as a productive member of a manufacturing team.
2. To calculate correct material strength, hardness, and machining properties.
3. To think critically and identify, evaluate and solve complex technical and non-technical problems.
4. To understand the application of computers in manufacturing processes.
5. To understand basic manufacturing techniques and the equipment used to for various manufacturing processes both locally and around the world.

EVALUATION AND GRADING SCALE:

Grades will be based on total number of points earned from in-class quizzes, homework assignments, and attendance. There will be an in-class quiz for most lab days and student an attendance signup sheet for days with no quiz. Grades will be posted on CANVAS.

Grading Scale:

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

PITT STATE PATHWAY

MISSION STATEMENT - *The Pitt State Pathway curriculum serves as the heart of the university education by fostering interdisciplinary competencies that typify the educated person. It is designed to facilitate the development of key proficiencies including communication and information literacy. The Pitt State Pathway curriculum provides a transformational experience that challenges students to think creatively and critically, and to immerse themselves in the productive examination of humans in their global setting. By encouraging the development of skills that promote life-long learning, the Pitt State Pathway fosters a sense of personal responsibility, an appreciation of diversity, and an understanding of interconnectedness in our truly global society.*

ESSENTIAL STUDIES ELEMENT - Human Systems within a Global Context: *Humans have developed complex systems that structure interaction. It is important to understand how and why these systems developed, change through time, vary by location, and are interconnected at all levels (local/regional/global), and the implications of that interconnectedness. Competency in this element means:*

- *Analyzing the structure, development, and change of human economic, political, social and/or cultural systems over time;*
- *Analyzing the individual's role and responsibility to society at all levels;*
- *Evaluating how human systems are interconnected at all levels.*

Learning Outcome: Students will explore global systems conscientiously

COMPANION ELEMENT - Scientific Inquiry: *The scientific method is the systematic approach to understanding the world around us. Through experimentation and hypothesis testing, students will apply analytical skills and appropriate methods of scientific inquiry (i.e. qualitative and quantitative) to solve a variety of research questions. Competency in this element means:*

- *Composing appropriate research questions and hypotheses, drawing from experts, reliable sources, or previously collected data;*
- *Collecting, synthesizing, and analyzing data from multiple sources;*
- *Drawing logical conclusions, assessing for gaps or weaknesses, and addressing potential consequences and implications;*
- *Communicating results using appropriate delivery methods or formats.*

Learning Outcome: Students will analyze data logically.

METHOD OF ASSESSMENT –

- **ESSENTIAL STUDIES ELEMENT - Human Systems within a Global Context:** This course is a broad survey of various processes and techniques used around the world to produce manufactured goods. Students will be exploring and applying these processes in a series of hands on laboratory experiences designed to help understand manufacturing and its global impact. To assess the students' level of learning (Benchmark), the students will understand human organizational systems using a variety of disciplinary and interdisciplinary perspectives. Specifically, students will research national and international trade organizations and explain (written assignment) their important role in industry. This assessment also will include a quiz comprised of a series of multiple choice questions about manufacturing and its global impact.
- **COMPANION ELEMENT - Scientific Inquiry:** A portion of this class will include some analysis of common engineering material properties using industry standard testing methods. This will include material testing methods such as hardness (Rockwell, Brinell) and strength (Ultimate Tensile Strength). To assess the students' level of learning (Benchmark), students will understand industry standardized scientific testing methods for material hardness and strength, and apply those procedures to test samples in the Co-requisite laboratory (MFGGET 268). (Mechanical Testing worksheet and laboratory)

TENTATIVE SCHEDULE OF ACTIVITIES

<u>WEEKLY OR DAILY</u>	<u>CLASS CONTENT</u>
Week 1	Class Overview/Introduction
Week 2	No Lab/ Safety Assignment
Week 3	Precision Measurement
Week 4	Materials and Metallurgy Lab
Week 5	Metals, Materials, and Testing
Week 6	Metal Casting
Week 7	Metal Casting
Week 8	Welding
Week 9	Spring Break
Week 10	Machine Production / Rapid Prototyping
Week 11	Machine Production / Heat Treatment
Week 12	Machine Production
Week 13	Machine Production
Week 14	Machine Production
Week 15	CNC, Automated Machine Tools
Week 16	Plastics
Week 17	No Lab (Final Exam for MFGET 263)

PSU SYLLABUS SUPPLEMENT: Pittsburg State University encourages students to take full advantage of campus resources. Information about the campus resources and other information, notifications, and policies (academic integrity, dead week, etc.) students should be aware of, can be found through the syllabus supplement. The supplement is updated for each semester and includes information for students about campus resources, notifications, expectations, grades, etc. This supplement in its entirety can be found at:

<http://www.pittstate.edu/office/registrar/syllabus-supplement.dot>

LATE WORK: Students are expected to complete all work within established timeframes and due dates. Late work will not be accepted.

ATTENDANCE POLICY: Students are expected to attend class. A student absence will result in an “F” for that day’s activity. If absences are unavoidable, please contact the instructor before class to inform him you will not be attending classes.

GENERAL COMMENTS:

1. None of the course work grades or scores will be “dropped”. All test, quiz or written scores will be included in your final class grade.
2. Directions and instructions other than those listed in this course outline will be given as necessary.
3. Plagiarism will not be tolerated. Any student caught cheating will receive a zero (F) for the assignment.
4. If you have any medical condition or disabling condition, may require some special arrangements in order to meet course requirements advise the Instructors the first day of this class.
5. The Kansas Technology Center is a smoke free, tobacco free facility.
6. We do not “curve” tests or assignment scores. There is no extra credit.
7. Please secure your bag and personal belongings during class.
8. Wear appropriate clothing for general work. Do not wear clothing that could get caught in machinery or otherwise cause an accident (loose fitting, baggy, torn or loose long sleeves, rings, watches, necklaces etc.). Closed toed shoes are required during all lab activities. Dress shoes, flip-flops, or sandals are not acceptable laboratory footwear.
9. Please silence your cell phone, MP3 player, or any related items, during class. Do not accept cell phone calls during class. This practice is disruptive to the class and your colleagues.
10. Do not attempt to use laboratory equipment unless authorized to do so by the instructor. Any damaged tools or laboratory equipment must be reported to the instructor immediately.
11. At the end of each lab activity, you will be expected to clean up your area. Put away tools, materials, or equipment used during the lab activity. Good housekeeping requires the attention and cooperation of all involved.
12. Do not park in the Visitors section of the KTC parking lot. These spaces are for people such as our guest speakers and will possibly cost you, if the University Police write you a ticket.
13. If you bring a laptop to class, limit its use to taking class notes.
14. This class meets one (1) day per week. Schedule appointments (Doctor, Dentist, etc.) so they do not conflict with the class schedule. Any class work missed will not be allowed to be made-up.
15. Safety is everyone’s responsibility. Use safe working habits and techniques for all lab activities. Correct or report any unsafe conditions immediately to a course instructor.

ACKNOWLEDGMENT:

1. I hereby certify that I have read and fully understand the Syllabus and will comply with and support all policies and procedures outlined above.
2. I understand that I am able to ask questions of the instructor and know where the instructor is located in the KTC.
3. I fully understand the assignment, attendance, and grading criteria.
4. I further understand that all assignments, tests, and attendance are my responsibility.
5. I understand that it is my responsibility attend each class period.
6. I understand that this syllabus is available on Canvas

Course: MFGET 268 – Manufacturing Methods I Lab (1 Credit Hour)

Print Name: _____

Student ID #: _____

Signature: _____

Date: _____