**Pittsburg State University**

**Department of Engineering Technology**

##### Manufacturing ET Program

(Prepared by: Dr. Russell L. Rosmait )

**COURSE TITLE: MFGET 263 Manufacturing Methods I**

**COURSE SCHEDULE: 100% Face-To-Face Lecture –** MW - 1:00PM – 1:50PM Room S102

 **100% Face-To-Face Lab**  2:00PM – 3:40PM Rooms S125 & All MFG

**INSTRUCTOR:** Dr. Russell Rosmait Office : Room # S124A

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###### E-mail: rrosmait@pittstate.edu

###### Office Hours: 10:00AM – 11:00AM MWF (See office door for additional times)

**I. COURSE DESCRIPTION:**  MFGET 263

Manufacturing Methods I is an introductory course in Manufacturing Engineering Technology. The course exposes the students to a broad range of manufacturing processes popular in today’s industries (additionally it reviews manufacturing and as a human systems within a global context.)

**REQUIRED TEXT AND MATERIALS**

Manufacturing, Engineering & Technology, 7th Edition, by Serope Kalpakjian and Steven R. Schmid. ISBN 0-13-148965-8. © 2017 Pearson Education, Inc., Upper Saddle River, NJ. Additional Material Reference; Machinery Handbook, Industry periodicals, Video presentations and various manufacturing web sites.

**COURSE OBJECTIVES:**

**II. Objectives and Outcomes.**

*Instructor Objectives* The Objectives of this course are to**:**

1. Disseminate the fundamental concepts associated with manufacturing and technology, and

 its development over time as a global system of trade and civil advancement.

2. Provide students an opportunity to observe the use of a wide variety of Manufacturing processes through laboratory activities, research and hands on experiences.

3. Develop an awareness of the physical laws associated with manufacturing processes and how they interact with human systems for the benefit of society and life in general.

4. Disseminate to students the importance of process selection as how it relates to the cost of manufacturing, the environment and society.

5. Introduce the students to fundamental concepts of material selection, testing, and their importance in scientific discovery and decision making.

6. Introduce lab assignment that foster group team work and problem solving.

*Student Outcomes*

As a result of lectures, written assignments, lab demonstration and reading assignments the successful student will be able to:

1. Disseminate the general operational principles of a global manufacturing system with its many tools, human interactions and societal concerns.

2. Research the processes, operations, and impact of manufacturing and automation on the manufacturing enterprise and technical societies.

1. Perform scientific calculations for the selection of material and applications to identify their properties and characteristics.
2. Disseminate through testing the important interrelationships between materials and process selection and how they influence total product cost to manufacturing, the environment and society.

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| WEEKLY OR DAILY | CLASS CONTENT | LECTURE/LAB ACTIVITY | ASSIGNMENTS  |
| 1 | Intro to Manufacturing |  |  |
| 2 | Metals, Materials and Selection | Safety activity | Lab Activity/Quiz |
| 3 | Metals, Materials and Selection | Physical properties of Material  | Lab Activity/Report |
| 4 | MFG QC Systems/Eng Metrology | Measurement  | Lab Activity/Quiz |
| 5 | Welding & Joining Processes | Welding Lab Activity | Lecture Exam |
| 6 | Materials Testing & Properties | Material Mechanical Test Lab | Lab Activity/Report |
| 7 | Metal Casting Processes | Green Sand Molding experience | Lab Activity/Report |
| 8 | Metal Casting Processes | Other casting processes | Lab Activity/Quiz |
| 9 | Prototyping | Demo | Lec Exam/Lab Quiz |
| 10 | Assembly Lines / Machine Tools | Machine Prod Lab Activity | Lab Activity |
| 11 | Turning Processes | Machine Prod Lab Activity | Lab Activity |
| 13 | Milling Processes | Machine Prod Lab Activity | Lab Activity/Quiz |
| 14 | CNC Machining Centers | CNC Demo | Lec Exam/Lab Quiz |
| 15 | Plastic Processing | Machine Demo | Lab Activity |
| 16 | Final Exam | Exam |  |

**Evaluation and Grading:**

1. There will be 3 exams and a final exam given throughout the semester.
2. The 3 exams are 40% of your grade. The final exam is 25% category
3. Research assignment and film reviews make of 35% of the grade
4. Students who have accumulated a final percentage total as shown in the scale below will receive the respective grade for the course:
5. 100%---90% = A, 89%----80% = B, 79%----70% = C, 69%----60% = D, 59%--------0 = F

The Department of Engineering Technology is committed to a policy of educational equity. Accordingly, the Department is committed to the support of all University policies on: 1) Equal Opportunity Policy, 2) Racial Harassment Policy, 3) Sexual Harassment Policy, 4) Consenting Relationships Policy, 5) Nondiscrimination Policy, 6) Policy on Prevention of Alcohol Abuse & Drug Use on Campus & in the Workplace. Copies of these policies are available in the Departmental office (W223-KTC), through the PSU Equal Opportunity/Affirmative Action Office or at the EOAA web site <https://www.pittstate.edu/registrar/_files/documents/syllabus-supplement-fall-2018>

**GENERAL SAFETY RULES:**

1. Accept the “zero accident” philosophy.

2. Approved safety glasses are to be worn when working in the lab work area and these approved safety glasses must be worn in all KTC labs.

3. All clothing worn for labs must be in accordance with general work and safety practices. Do not wear clothing that could get caught in machinery or otherwise cause an accident (such as dragging or baggy trousers, torn or loose long sleeves, loose neck jewelry and rings). Shirts with sleeves are to be worn at all times and must cover the shoulders and torso. Tank tops and football type net shirts are not

acceptable. Pants must be full length (no cut-offs or shorts). Shoes or boots must be of sturdy leather, thick-soled and cover the ankle. Dress shoes, athletic shoes or sandals are not acceptable.

4. Use tools, equipment, and personal protective equipment the way they were designed.

5. Inspect tools and equipment prior to use. Do not use damaged or unsafe tools and equipment. Damaged tools and equipment shall be removed from service until fully repaired or replaced.

6. Only perform tasks for which you have been trained.

7. Correct or report all unsafe conditions immediately to a course instructor.

8. Everyone has the right to refuse to perform work which is believed to be unsafe. Explain your concerns to a course instructor.

9. Good housekeeping requires the attention and cooperation of all involved. Pick up tools, store materials properly, and pick up trash daily.