ME 3120 – Manufacturing Processes and Their Application
Fall 2019
TTH 2:00-3:15 PM
Dillard Building 201

Instructor: Dr. Xin Zhao
Office: 220 Fluor Daniel Building
Phone: 864-656-2151
Email: xzhao5@clemson.edu
Office hours: TBD

References: Lecture notes (will be posted online, and taking notes in class is highly recommended)

Text book:

Other references:


Corequisites: ME 3040 Heat Transfer.

ME 3060 Fundamentals of Machine Design.

ME 3330 Mechanical Engineering Laboratory II.

Course Description: Fundamental principles associated with production processes and their application to the manufacture of products from metals, polymers, ceramics, and composites. Emphasizes the physical and quantitative aspects of processing, the selection of processes to create products, and the identification of processes used to manufacture existing products.

Student Learning Outcomes:
Following successful completion of the course, you should be able to:

- Predict the influence a manufacturing process has on the material properties of a finished product.
- Compare economic costs and environmental impacts between manufacturing processes.
• Classify fundamental manufacturing processes and identify the key parameters for each process.
• Evaluate the manufacturing process(es) used to produce a finished part.
• Critique your metacognition skill.
• Create a manufacturing process for making a product that fulfills a need.

Course Policies:

1. Grading policy

Final grades will be assigned according to the university’s grading policy described in the 2019-2020 Undergraduate Announcements.

The final grade will be given based on quizzes, individual exams, team projects, and the team manufacturing challenge, according to the following distribution:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>30%</td>
</tr>
<tr>
<td>Individual Exams</td>
<td>15%</td>
</tr>
<tr>
<td>Team Projects</td>
<td>35%</td>
</tr>
<tr>
<td>Team Manufacturing Challenge</td>
<td>20%</td>
</tr>
</tbody>
</table>

2. Quizzes

Quizzes feature simple multiple choice questions aimed at validating that each of you have studied the material before class. **Quizzes are individual and you must take the quiz online BEFORE class and by the deadline stipulated in Canvas.** Quizzes are timed and you only have one attempt. Most quiz questions feature only one correct answer for full credit. All quizzes have the same value, regardless of the number of questions. **No make-up quizzes will be provided.**

3. Exams

Exams during the semester will test your ability to apply the material covered in class; and may be designed such that you do not finish it during the time allowed. Exams will not be at all comparable to the questions in the quizzes. Exams will be online or paper-based and will feature multiple-choice format. A question will have one correct answer for full credit, one answer for 0.7/1 credit, one answer for 0.4/1 credit and two wrong answers for no credit. Any instance of cheating on a test will result in failure of the test and a formal charge of academic dishonor.

**Make-up tests will only be given for situations approved by the instructors prior to the time of the test, except under emergency conditions.** Few situations would preclude a phone call to the instructor prior to the time of the test.

4. Projects and Team Manufacturing Challenge
Your team will be required to hand in a deliverable for each of these activities. Instructions and details will be posted in Canvas. We will start these activities in class but you will finish them outside class. Your deliverable will be due on the dates detailed in Canvas. You are responsible to coordinate with your team in case you did not come to class. Credit for an activity will only be given to those names written in the submitted deliverable.

The 3 projects have combined weight of 35%, which is distributed as follows: your lowest scored project report will have a weight of 5% and the other two will have a weight of 15% each. The final manufacturing challenge has a weight of 20%. **Project will be penalized 20% for each calendar day late.**

5. **Individual E-Learning Modules:**

7 e-learning modules will be available to you during the semester to complement the in-class learning materials. You can earn an additional 5% (0.71% per module) to your final grade if you pass the given module with an 80% or better in the assessment test at the end of the module *(the final exam at the end of each module, NOT the practice quizzes throughout the module)*. See supporting syllabus in Canvas. Contact support@educateworkforce.com DIRECTLY in case of any trouble with the e-learning platform and copy me in your email to them.

**Student Responsibilities:**

1. Attendance at each meeting of the class is expected. You are responsible for all classroom activities and assignments.
2. Assignments are to be read prior to lecture and discussion.
3. The students are expected to wait for 15 minutes before leaving if the instructor is late for the class.
4. Any exam that was scheduled at the time of a class cancellation due to inclement weather will be given at the next class meeting unless contacted by the instructor. Any assignments due at the time of a class cancellation due to inclement weather will be due at the next class meeting unless contacted by the instructor. Any extension or postponement of assignments or exams must be granted by the instructor via email or Blackboard within 24 hours of the weather related cancellation.

**Academic integrity:**

“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a “high seminary of learning.” Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.”

**Title IX**

Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy,
national origin, age, disability, veteran’s status, genetic information or protected activity (e.g., opposition to prohibited discrimination or participation in any complaint process, etc.) in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at http://www.clemson.edu/campus-life/campus-services/access/title-ix/. Mr. Jerry Knighton is the Clemson University Title IX Coordinator. He also is the Director of Access and Equity. His office is located at 111 Holtzendorff Hall, 864.656.3181 (voice) or 864.565.0899 (TDD).

**Disability access statement**

Students with disabilities requesting accommodations should make an appointment with Dr. Arlene Stewart (656-6848), Director of Disability Services, to discuss specific needs within the first month of classes. Students should present a Faculty Accommodation Letter from Student Disability Services when they meet with instructors. Accommodations are not retroactive and new Faculty Accommodation Letters must be presented each semester.