



DEPARTMENT OF MANUFACTURING ENGINEERING
Course Syllabus - MFG Processing Studio
MFGE 3333

Instructor: Dr. Yue Zhang
Office: Engineering and Research Building, Room 2065
Email: yzhang@georgiasouthern.edu
Phone: (912) 478-1112
Office Hours: M, W 10:00 AM - 11:00 AM
M: 2:00 PM – 5:00 PM
or by appointment

**Bring your own safety glasses and caliper to lab sessions (A 6" digital caliper costs \$20)
A laptop is required for students during class.**

Class Schedule / Location:

Lectures: M, W: 9:05 AM – 9:55 AM, ERB, Room # 3027
Laboratory: W: 2:30 PM – 4:10 PM, Carruth Building, Room # 1015

Prerequisites:

A minimum grade of "C" in MENG 1310 and MFGE 2531.

Catalog Description:

This course covers theory and hands-on experiences with various forming processes such as casting, forging, and extrusion, rolling and drawing. Students will gain insight into the theory of manufacturing processes and will develop competency through lab based hands-on practice and the processing constraints related to the design of products and systems.

Textbook

This course uses open educational resources (OER) available online. All course materials, including lecture slides, lab manuals, and supplementary readings, can be accessed at <https://shorturl.at/VtFdC>. There is no required textbook to purchase.

References

Mikell P. Groover, *Fundamentals of Modern Manufacturing, Materials, Process, and Systems*, J. Wiley & Sons Publishing. (4th to 7th editions are OK)

Course Schedule

The detailed course schedule is available on the OER materials website at <https://shorturl.at/VtFdC>.

Course Outcomes:

Upon successful completion of this course students will be able to:

- Discuss the various types of metals, and the processing techniques and processing equipment used to manufacture goods from these materials.
- Identify, define, and categorize equipment, tooling, and operations used in the processing of engineering materials.
- Compare and contrast materials processing techniques and delineate the limitations of each as they relate to manufacturing.

- Describe the effects of processing on the properties of materials.
- Explain the influence of materials and processing parameters on manufacturing processes and operations.
- Conduct analysis of forces, pressures, friction, wear and other mechanical phenomenon necessary for the processing a variety of materials.

Method of Grading:

- There will be assignments, two tests, a comprehensive final test, laboratory reports and a final project assignment. Although students are encouraged to collaborate and learn from each other, unless you have specific instructions that an assignment is to be collaborative such as a team or group project, assignments are to be completed and submitted as individual work, independent of assistance from another person. All outside sources must be cited, otherwise the work will be considered to be plagiarized.
- For lecture section, there are flip learning activities. Students are required to review class materials (slides, lecture notes, or textbook) before attending the class. The contents will then be practiced by using exercise, quiz, or homework in class.
- There will be 2 in-class tests and a **comprehensive** final test. All tests are closed book. Necessary formulas will be provided. The tentative test dates are shown in the course outline below. Change of the test date, if necessary, will be announced in class at least one week ahead. No makeup test will normally be given. An unexcused absence of a test without **prior authorization** will result in a zero. For any test missed for an excused absence, a mutually agreeable makeup date will be arranged.
- A project report will be required for the final project. Details of the project requirements will be given in the class. Project notebook and product are due in the last week of the semester.
- **Clean-Maintenance Activity** - At the end of each laboratory session every student is required to participate in the cleaning and maintenance exercise of appropriate work area/s. At the completion of this exercise, the instructor will record your level of participation (possibly on a sign-out sheet) for final grading. Under normal circumstances a student will not be exempted from this exercise. A maximum deduction of 5 points (at instructor discretion) will be in place for an incomplete activity either as a group or an individual. This is a graded item.

The final grade will be calculated as follows:

Item Description	Weight
• Homework and Quiz	30%
• 2 Tests	20%
• Project Report	10%
• Project Product	15%
• Safety and Maintenance Activity	5%
• Final Exam	20%
Total	100%

Letter grades will be based on a 90-80-70-60 scale: A = 90-100; B = 80-89; C = 70-79; D = 60-69; F=< 60.

Assignment Policy

- 1) All assignments are due midnight Sunday. A 'grace period' of 24 hours permits a no-penalty submittal after the due date/time. Midnight Monday is a 'cut-off' time that, once passed, will not allow submission of assignments – and no credit will be earned. After the answer to the assignment is given in class or online, no late work is accepted any more.

- 2) Quizzes can be announced or unannounced. All quizzes and exams are subject to time limitations as determined by the instructor. Students arriving late for quizzes or exams will not be permitted to participate. Normally no makeup quiz is given.

Exam Policy

- 1) All exams are conducted in class.
- 2) Only calculator can be used in exam. No other electronic device (cell phone, tablet, smart watch, laptop or desktop) can be used during an exam. Even as a calculator or a watch.
- 3) Cell phones need to be turned off during the test.

Attendance Policy:

- Cell phones are not allowed during class. Students are required to put their smart phones in school bag or pocket during lecture time.
- **Classroom:** You are expected to attend classroom sessions during the semester. In the event you miss class you should get notes or other missed materials from a classmate.
- **Laboratory:** You are expected to attend laboratory sessions during the semester. Missing a lab session could set you behind in the course since you will not be able to use the equipment, machine, or tool until you have had proper instruction by the professor or his designee. Punctual attendance at every scheduled lecture and laboratory session is expected.
- Permission to miss/leave classes may be granted when excuses are verifiable, but such cases must be discussed outside class, during office hours. The instructor reserves the right to give a student a grade of "WF" for the course or reduce his/her final letter grade for excessive unexcused absences. More than three absences from the lecture sessions and more than one lab session are considered excessive.
- Tardy and early leave of the class/lab without prior authorization is also considered unexcused absence.
- If a student misses a class due to legitimate, university-approved, or other circumstances beyond the student's control, the student may provide appropriate documentation to avoid being penalized.
- **Personal Conduct**– It is expected that students will conduct themselves in a professional manner at all times. Unnecessary conversation during lectures, typing keyboard, and clicking mouse are rude and disrupts the class, please respect others and refrain from it. Use of profanity is unacceptable.
- **Student Success** – Your success is directly tied to your attitude and commitment toward this course. To learn the most and earn the best grade you should attend every class session fully prepared. This includes having read the appropriate course materials, bringing necessary supplies, keeping a detailed and dated notebook, completing homework assignments, and asking questions when you do not understand classroom or laboratory information as presented.

Laboratory Safety:

Safety is paramount in any laboratory activity. Report all safety concerns to the course instructor without delay.

The following basic safety rules must be followed in the laboratory / machine shop. Failure to follow required safety guidelines will result in immediate dismissal from the laboratory. This is a graded item.

1. No food or drinks or tobacco are permitted in the laboratory.
2. Wear safety glasses all the time you are in lab.
3. Tie back loose clothing or long hair.
4. Appropriate dress is required in the laboratory. Clothing such as shorts, skirts, sandals (flip-flops), etc. that do not fully protect the body and feet are not permitted. Other attire or

accessories such as jewelry, scarves, etc. that dangle or are loosely worn and may become entangled in rotating machinery are prohibited. You will not be permitted to work in the lab if improperly dressed.

5. Secure the workpiece in the chuck / vice / workholding device.
6. Remove chuck keys and hex wrenches before starting the lathe/power tool.
7. Use the correct tool for the job. Secure the tool correctly to the tool holder.
8. Keep all unauthorized people away from work area.
9. Clean the work area and return all tools to the cabinet after the work is completed.

AI Statement

I expect you to generate your own work in this class. Any work submitted infers the assertion that you have generated and written the text, unless stated otherwise by proper quotation and attribution methods. Submitting content that was generated by someone else, or that was created or assisted by a computer application or tool, including artificial intelligence (AI) tools such as ChatGPT, is cheating and constituted a violation of the Student Conduct Code. You may use simple word processing tools to update grammar in your work, but you may not use AI tools to draft your assignments, even if you edit, revise, or paraphrase it. There may be opportunities for you to use AI tools in this class, but I will clearly specify when and in what capacity if the opportunity presents itself.

ADA Accommodations

In compliance with the Americans with Disabilities Act (ADA), this course will honor requests for reasonable accommodations made by individuals with disabilities or demonstrating appropriate need for learning environment adjustments. Students must self-disclose their disability to the Student Accessibility Resource Center (SARC) before academic accommodations can be implemented. Students requesting alternative educational arrangements must submit a completed COVID-19 Alternative Educational Arrangement Request Form to [the SARC office](#). For additional information, please call the SARC office at (912) 478-1566 on the Statesboro campus, or at (912) 344-2572 on the Armstrong and Liberty campuses.

Academic Integrity and Plagiarism:

The department considers violations of scholastic ethics serious offenses. Academic dishonesty is defined in the current edition of the Student Code of Conduct. Students violating this policy may be penalized to the maximum allowed by the University. All incidents of cheating or other activity described in the Student Code of Conduct as Code of Conduct Violations will be reported to Judicial Affairs and may result in a failing grade for the course. All assignments, tests and exams are considered individual effort, unless otherwise directed by the instructor. Plagiarism, the use of someone else's words or ideas without attribution, is a serious and easily detected violation. Students found to have plagiarized may receive zero credit for the assignment and/or dismissal from the course. Such violations are typically reported by faculty to the Student Judicial Board. If you are not sure what constitutes plagiarism, please see your professor or see the information at the following websites:

<http://students.georgiasouthern.edu/judicial/Documents/SCC.pdf>

<http://library.camden.rutgers.edu/EducationalModule/Plagiarism/whatisplagiarism.html>

For additional information, call the Office of Judicial Affairs at (912) 478-0059.

Professional Behavior, and Sexual Harassment:

Professional behavior is required of all students at all times (in the classrooms, laboratories, field, field trips, etc.). Students are required to read and comply with the Georgia Southern University policy prohibiting sexual harassment found at:

<http://services.georgiasouthern.edu/affirmativeaction/pdf/GSU%20Policy/SexualHaras.pdf>

Students creating disturbances that interfere with the conduct of the class, or the learning of others, will be directed to leave. Repeated disturbances are grounds for dismissal. The use of tobacco products including chewing tobacco, or alcohol in any form, is not permitted. Telephones, pagers, headphones, and other portable electronic devices must be turned off during classes—This does not apply to laptop computers.

Computers in the classrooms/laboratories are for class/lab work only. The use of a computer for non-academic purposes (e.g. games, accessing inappropriate material, social network websites, etc.) renders the student subject to dismissal from that day's class/lab and the following class/lab. Class/lab periods for which a student has been dismissed will count as unexcused absences. Instances of students accessing inappropriate material will be referred to the Department Chair for disciplinary action.

The Student Code of Conduct is the official publication governing student conduct and behavior. It is a student's responsibility to be knowledgeable of and comply with established rules and regulations.

Student Code of Conduct:

- GEORGIA SOUTHERN STATEMENT ON STUDENT CONDUCT: Georgia Southern University students are expected to obey national, state, and local laws, to respect the rights of members of the campus community, and to accept responsibility for the consequences of their behavior. In the event students fail to demonstrate such behavior, Georgia Southern University reserves the right to take necessary and appropriate action to protect the safety and well-being of the campus community. Such action may include pursuing disciplinary action for violations of University rules and regulations, policies, violations of national, state, and local laws that occur on-campus, off-campus, or on the internet that adversely affects the educational interest of the University.
- GEORGIA SOUTHERN UNIVERSITY CAMPUS HONOR PLEDGE: "On my honor, I pledge to be academically honest in all my coursework and will not tolerate the academic dishonesty of others. I also pledge to engage in ethical behavior on-campus and off- campus, to live an honorable lifestyle, and to create a campus environment that is characterized by individual responsibility, civility, and integrity." right to change the Student Code of Conduct when it becomes necessary to ensure the orderly operation of the University.

If you have any questions, please read the policy at:

http://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1010&context=sae_mgmt.

For additional information, call the Office of Judicial Affairs at (912) 478-0059.

Students with Disabilities:

University policy requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Disability Resource Center, by phone at (912) 478-1566, by video phone at (912) 225-9877 or by email at sdrc@georgiasouthern.edu.

Notice of Copyright and Intellectual Property Rights:

Any intellectual property displayed or distributed to students during the course (including but not limited to PowerPoints, notes quizzes, examinations, etc.) by the instructor remains the intellectual property of the instructor. This means that the student may not distribute, publish, or provide such intellectual property to any person or entity for any reason, commercial or otherwise without the express written permission of the instructor.