

Western Kentucky University
School of Engineering and Applied Sciences
MFGE 342: Manufacturing Operations (Spring 2024 – ONLINE)

Instructor: Bryan Reaka

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Office Hours: Tues 8:00-9:00AM and 2-3:30PM, Wed 2:00PM-4:00PM, Thur 8:15am-9am, or by appointment

Phone: 270-745-7032

Pre-requisites: Math 116 with a grade of "C" or better, or Math 117 or higher

Credit: 3 credit hours

Course Description: Survey of methods for designing products for improved quality and manufacturability in industry, and designing manufacturing processes for improved reliability. Course Fee

General Course Goals:

- Match manufacturing terms to appropriate process needed to improve quality of products
- Compare manufacturing processes involved to make products more reliable.

Major Topics to be covered in the course:

Introduction to Manufacturing
World Class Manufacturing
Ferrous Materials (ch 5)
Nonferrous Metals (ch 6)
Polymers (ch 7)
Composite Materials (ch 9)
Metal casting (ch 10 and 11)
Metal rolling (ch 13)
Metal forging (ch 14)
Extrusion and Drawing (ch 15)
Sheet-metal Forming (ch 16)
Powder Metal (ch 17)
Ceramics, Glasses (ch 18)
Plastics and Composite Materials (ch 19)
Nontraditional machining / Laser/ DMD
Additive Manufacturing (ch 20)
Waterjet machining
Machining (ch 21)
Cutting Fluids (ch 22)
Machining: Turning (ch 23)
Machining Processes: Milling (ch 24)
Fusion Welding (ch 30)
Solid State Welding (ch 31)
Surface Treatments (ch 34)
Manufacturing Systems

Required Text: **Please read this before purchasing anything**

eBook: Kalpakjian, Serope and Schmid, Steven Manufacturing Engineering and Technology (2020) (8th edition). Pearson Publishers

The e-book for this course can be accessed through Blackboard and is being provided by the Big Red Backpack program.

ATTENDANCE: Class attendance is important, even though this is an online course offering you will need to check Blackboard on a regular basis for, assignments. Basically everything that is discussed, assigned and presented is important to your learning experience and success in the course.

Grading: The factors to be considered in determining grades and the specific weight to be assigned to each of these is as follows:

Quizzes – 100%

Quizzes – will include material from lectures, videos for the section and homework on the topic. All will be timed.

GRADES:

A – 100%-92%

B – Less than 92-84%

C – Less than 84-74%

D – Less than 74%-70%

F – Less than 70%

Title IX Misconduct/Assault Statement

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's [Sex and Gender-Based Discrimination, Harassment, and Retaliation](#) (#0.070) and [Discrimination and Harassment Policy](#) (#0.2040). Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Executive Director, Office of Institutional Equity/Title IX Coordinator, Ena Demir, 270-745-6867 or Title IX Investigators or Michael Crowe, 270-745-5429. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's [Counseling and Testing Center](#) at 270-745-3159.

ADA Accommodation Statement

In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, Room 1074. The SARC can be reached by phone number at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

EMAIL

All correspondence for this course will be to your WKU student e-mail account. Email will be one of our methods of communication for this class. Remember that anything you write could be read by others. Each email should deal with one subject or one assignment. Each email or assignment should be concise but include all requested information. For email SUBJECT, please use the following: **Course Last Name <short title>**. As an example, if your name is James Alorabi, you are taking MFGE 342, and you want to write me and ask me a question about lecture on ferrous metals, then your email SUBJECT should be: MFGE 342 Alorabi <Ferrous Metals Lecture question>

MISSED QUIZZES/ TESTS WILL NOT BE ABLE TO BE MADE UP.

Review questions/ homework questions: These will not be collected or graded. The answers will be available after the "due date" and upon your submission of theses as an assignment. These are suggestions for material that you as the student will be responsible for during the semester. The information from these questions will be included in quizzes and exams.

Academic Dishonesty

"Students who commit any act of academic dishonesty may receive from the instructor a failing grade in that portion of the coursework in which the act is detected or a failing grade in the course without possibility of withdrawal."

The students involved with the dishonest act will be notified, they will fail the course, referred to the Office of Student Conduct and have an academic hold placed on their record.

Substantial Feedback:

The U.S. Department of Education requires that distance education courses must include regular and substantive interaction between students and faculty. For more information about Regular and Substantive Interaction at WKU, please visit the [Regular and Substantive Interaction in Online and Distance Learning webpage](#).

In this course, regular and substantive interaction will take place in the following ways:

Weekly synchronous sessions with faculty and students,- **THESE ARE NOT REQUIRED** by the student

I will be on a standing **Zoom meeting from 8:00 am-9:00 am the following dates:**

Meeting Link: <https://wku.zoom.us/j/93944571993>

Tues Jan 16, 2024

Tues Jan 23, 2024

Tues Jan 30, 2024

Tues Feb 6, 2024

Tues Feb 13, 2024