

Course Number: EGR 2650

Course Title: Manufacturing Processes

Course Description:

An introduction to the many processes used in manufacturing. Credit(s): 3 (3 plus 0)

Prerequisites: CH 1000 or CH 1220, PH 1100 or PH 1300.

Credit hours: 3

Learning Outcomes:

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

1. Define metal casting methods (Sand Casting, Die Casting, etc.. and describe the processes and mold types for each.
2. Describe Glass part production processes and reasons for Heat Treating.
3. Describe and differentiate between Compression, Transfer, Injection, and Blow Molding and Thermoforming in the production of plastic parts.
4. Discuss the key steps in Rubber Processing.
5. Describe the raw material manufacturing of Polymer Matrix Composites and its importance in open and closed molding techniques.
6. Describe the powder creation methods and molding processes in Powder Metallurgy.
7. Differentiate between Ceramics and Cermet's and their processing methods.
8. Understand the fundamentals of Metal Forming and Bulk Deformation Processes such as: Rolling, Forging, Extruding and Drawing.
9. Discuss Cutting, Bending and Drawing in reference to Sheet-Metalworking.
10. Describe Turning, Drilling, and Milling in Metal Machining processes and how to economically choose the best methods for production.
11. Describe the process of Grinding and grading of Grinding Wheels.
12. Discuss the purposes and importance of Heat Treatment for metals.
13. Describe methods for Coating and Deposition processes of Metals.
14. Describe and differentiate between Welding, Brazing, and Soldering.
15. Discuss the types of Mechanical Assembly processes and their benefits.

Indiana Tech
College of Professional Studies
EGR 2650 Manufacturing Processes
Online Syllabus Course Content

Instructor Information

Please see Professor Profile at the Blackboard instructional site.

Course Schedule

Please see Course Schedule in the Course Syllabus area of the Blackboard instructional site.

Online Course Policies

All of the online courses taken by students are required to follow the policies posted online at <http://online.indianatech.edu/tech-policies/policies/>. Please review the posted policies carefully. If you are unable to abide by the policies listed, please contact the Warrior Information Network (WIN) at 888.832.4742 and request to withdraw from this course.

Textbook

Groover, M. P. (2007). *Fundamentals of modern manufacturing: Materials, processes, and systems* (3rd ed.). Hoboken, NJ: John Wiley & Sons.

Grading Events & Grading Criteria

Unless otherwise specified, all assignments must be submitted via Blackboard.

Assignment	Points
Course Preparation Quiz	5
Quiz #1	25
Midterm	50
Quiz #2	20
Quiz #3	25
Quiz #4	25
Final	60
Total	210

Grading Scale

The following grading scale will be used to assign a grade at the end of the course:

Percentage Achieved	Grade	Percentage Achieved	Grade	Percentage Achieved	Grade
93% or above	A	80% or above	B-	70% or above	C-
90% or above	A-	77% or above	C+	60% or above	D
87% or above	B+	73% or above	C	Below 60%	F
83% or above	B				

Late Assignments

All assignments and required online activities are due according to the deadline listed in the course schedule. Granting deadline extension is the course instructor's autonomy.

Incompletes

If you are unable to complete the requirements for this course due to extenuating circumstances, an Incomplete grade (I) may be granted if you meet the general guidelines stated below.

General Guidelines for submitting a course incomplete request:

- More than 50% of the course session has elapsed.
- The student has encountered an unexpected situation that is beyond his or her control.
- The student is
 - in good academic standing -- up-to-date on all of the course assignments and has at least an overall passing grade,
 - able to complete all of the remaining coursework within a session (5 weeks for a undergraduate course and 6 weeks for a graduate course) that immediately follows the session the student is currently enrolled, and
 - able to provide support documentations to substantiate the need for extra time should a session is not enough to complete the course requirements.

If an Incomplete is granted, the instructor will set a deadline for all work to be completed. **The deadline cannot go past one (1) session.** All incomplete grades and deadlines are subject to approval by the designated University authority.

Course Related Communication

Online courses are conducted in an accelerated format. Timely communication is very important. When receiving emails from your classmates or instructor, please respond as soon as you can.

Students are REQUIRED to use their Indiana Tech email account for all course related communication. The most direct, and effective, way to email your course instructor and classmates, is by using the Send Email function within the Blackboard course site. When you use the Send Email function, you automatically receive a carbon copy of the email you sent. In the event when you need to substantiate your claim that you did email your classmates or instructor, you can show that carbon copy to the person(s) who requested it.

Please note that Blackboard only permits you to send email, it does not provide you with the check email function. All of the emails your classmates and instructor send to you will be delivered to your Indiana Tech email account. You are strongly encouraged to check your Indiana Tech email account regularly, preferably several times a week, to minimize the likelihood of miscommunication.

The University policy requires each online course instructor to respond to a student's email within 24 hours. Unless there is an extraneous situation that prevents the instructor from following this rule, you can expect to hear from the instructor within 24 hours. If you don't receive a reply within 24 hours, please do not hesitate to follow up with another email or forward the carbon copy of the email you sent to OnlineSupport@IndianaTech.edu with a note "Please help. It's been 24 hours and I have not heard from my instructor" and the University support staff will act on your behalf to contact your course instructor.