

Florida International University
Department of Mechanical and Materials Engineering
EIN 3390 Manufacturing Processes
Summer A 2018
(5/7/2018 – 6/15/2018)

Catalog description: *Study of interrelationships between materials, design and processing and their impact on workplace design, productivity and process analysis. (2 credits; Lab: 1 Credit)*

Textbook: Kalpakjian, S. Manufacturing Engineering and Technology, 7th Edition, Pearson

Instructor: Mario Sanchez, P.E.

Office: (EC 2620); Phone 305-348-3723; email: sanchem@fiu.edu

Class Hours: Tue, Thur: 2:40 - 6:00 (3h 40')

Classroom: EC 1115 **Office Hours:** TBA

Webpage: <http://web.eng.fiu.edu/mario/>

Course Outline

Wk.	Date	Day	Topic	Chap.
1	May 8	Tue	0. Lab Information; Introduction; 1. Fundamentals of Casting	10, 11
	10	Thur	2. Metal Casting Processes, Economics 3. Metal Forming Principles: Rolling, Forging, Extrusion	11, 12 14
2	May 15	Tue	4. Metal Forming Principles: Rolling, Forging, Extrusion 5. Sheet Metal Forming	14, 15 16
	17	Thur	6. Sheet Metal Forming 7. Fundamentals of Machining	16 21
3	May 22	Tue	Exam 1 8. Fundamentals of Machining 9. Round Shape Machining: Turning, Boring, Drilling	21 23
	24	Thur	10. Prismatic Shape Machining: Milling, Broaching, Sawing	24
4	May 29	Tue	11. Advanced Machining Processes	27
	31	Thur	12. Rapid Prototyping 13. Polymers and Plastic Forming	20 7, 19
5	June 5	Tue	14. Plastic Forming Processes	19
	7	Thur	15. Measurement & Inspection 16. Quality Assurance, Testing	35 36
6	June 12	Tue	17. Lean Manufacturing 18. Intro. to MasterCam	
	14	Thur	Exam 2	

Grading Policy:

From	To	Exam #1	50%
92.0%	100.0%	Exam #2	50%
	A-		100%
90.0%	91.9%		
88.0%	89.9%		
82.0%	87.9%		
80.0%	81.9%		
78.0%	79.9%		
70.0%	77.9%		
60.0%	69.9%		
0.0%	59.9%		

Comments: Actual material covered in each session may vary. Specific material and chapters to be covered in each test will be discussed in the lecture before the test. Regular class attendance is expected. No extra work for additional credit. No make up tests for early departures will be arranged. Please check your email regularly for announcements involving class schedule. Exam 1 date may change depending on how material is covered.

Guidelines for the class: we will have a couple of 10-15' breaks during the lecture for bathroom and coffee breaks. Once the break is over it is expected that you will remain in class until the next break or until the end of the lecture. Cell phones are to be turned off.

Honor Policy: The term Academic misconduct is academic dishonesty and shall include the following intentional acts and/or omissions: a. Cheating, which is the unauthorized use of books, notes, aids or assistance from another person with respect to examinations, course assignments, field service reports, class recitations, or possession of examination papers or course materials, whether originally authorized or not. Any student helping another cheat may be found guilty of academic misconduct. From the FIU Student Handbook. No collaboration in any assignment or examination is permitted unless specifically stated by the instructor on an assignment by assignment basis.

If you work for a manufacturing company and can help arrange for a tour of your facility, let me know as soon as possible.

References:

1. Materials and Processes in Manufacturing, E. Paul DeGarmo et.al., 8th Ed., Prentice Hall.
2. SME, Tool and Manufacturing Engineers Handbook, Thomas Drozda- Editor, SME 1983.
3. SME, Fundamentals of Manufacturing, SME, 1993.
4. American Society for Metals, Metals Handbook, 9th Edition, ASM Press, 1989.