

MEC 325 – Manufacturing Processes

The State University of New York, Korea

Fall 2021

Course Title: Manufacturing Processes

Instructor: Prof. Yang, Min Yang

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Lectures: MW @ 3:30-4:50 PM

Office Hours: MW @ 1:30-3:30 PM

Textbook: Mikell P. Groover, "Principles of Modern Manufacturing" 5th Edition in SI Version, Wiley

Course Description:

Understanding the relationship between product design and manufacturing. Knowing the traditional and nontraditional manufacturing processes of engineering materials and their capabilities and limitations. The fundamentals of various manufacturing processes including machining, metal forming, powder processing, casting, welding, polymer processing, additive manufacturing, quality control, manufacturing automation, and manufacturing system will be studied. Manufacturing knowledge will be practiced through 2 term projects

Topics:

Week	Date	Topic (Subject to change)	Reading
1	8/30	Introduction	Ch1
	9/1	History of manufacturing	Ch1
2	9/6	Metal cutting	Ch17
	9/8	Machine tools	Ch18
3	9/13	Grinding	Ch21
	9/15	Nontraditional machining	Ch22
4	9/20	Chuseok	

	9/22	Chuseok	
5	9/27	Bulk forming	Ch14
	9/29	Sheet metal forming	Ch16
6	10/4	Quiz#1	
	10/6	Casting	Ch7
7	10/11	Casting	Ch8
	10/13	Powder processing	Ch12
8	10/18	Project#1 demo	
	10/20	Welding	Ch25
9	10/25	Polymer processing	Ch10
	10/27	Composite	Ch11
10	11/1	Additive manufacturing-3D Printing	Ch29
	11/3	Additive manufacturing-3D Printing	
11	11/8	Quiz#2	
	11/10	Measurement & inspection	Ch37
12	11/15	Quality control, HW#2	Ch37
	11/17	Heat treatment	Ch23
13	11/22	Surface processing	Ch24
	11/24	IC fabrication	Ch30
14	11/29	IC fabrication	Ch31
	12/1	Manufacturing automation	Ch34
15	12/6	Computer integrated manufacturing	Ch35
	12/8	Discussion & Feedback	
16	12/13	(10-16) Finals	
	12/15	Final presentation	Project#2

Assignments & Deadlines: Home works are due in class. Home works will not be accepted after the class on the day they are due, and will receive zero in grade.

Examinations: 3 Quizzes.

Grading:

2 Homework	20%
3 Quiz	30%

Term project #1	20%
Term project #2	20%
Attendance	10%

Grading Scale: The grading distribution will be converted to the point with the given weight percentage, and the total point (sum of each point) is to be normalized to 100. Then, the final grade will be given based the following point range. A: 95-100, A-: 90-95 B+: 85-90, B: 80-85, B-: 75-80 C+: 70-75, C: 65-70, C-: 60-65 D+: 55-60, D: 50-55 F: below 50

Policies:

- Homework assignments will be posted on the Blackboard.
- The Blackboard can be accessed at <http://blackboard.stonybrook.edu/>
- The time and details about exams will be announced in the class (and also posted on the Blackboard).
- It is the responsibility of students to make sure that they can access the Blackboard and they have a working email registered with it. The blackboard should be checked frequently for new materials.
- Quiz will be closed book and note.