

IME 1500 Introduction to Manufacturing

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Course Description

Analysis and application of a broad range of modern manufacturing techniques utilized in industry. Exploration of production methods as influenced by historical impact, materials, processes, productivity, ethics and social/environmental concerns. The global challenges to product design, performance, quality, and economic considerations will be investigated.

Prerequisites

None. Students should have basic science and mathematics and a natural curiosity about manufacturing as it relates to their field of study.

Requirements

(see course plan for details)

9 lessons

6 homework assignments

2 **proctored** examinations

NOTE: In the introductory lecture, Professor Sitkins says, "there will be three examinations and one final exam". After careful consideration of having the student arrange for 4 off-site examinations, Professor Sitkins has revised the schedule from 4 exams to 2 exams.

3 credit hours

Performance Objectives

Students who successfully complete this course will:

1. Understand the scientific principles behind the processes and materials employed in product manufacturing.
2. Understand the basic elements of manufacturing organization.

3. Understand the fundamentals of advanced technology systems as they apply to product manufacturing and the associated cost challenges and benefits.
4. Be able to analyze material and process choices during and after the product design cycle.
5. Be familiar with current literature and Internet sources concerning the social and environmental impact of manufacturing.
6. Understand the historical significance of science and technology as it currently applies to global manufacturing economies.
7. Be able to make ethical choices about rights and responsibilities.

Performance Expectations

1. Display a mastery of related research, readings and exam preparation.
2. Complete all written assignments according to prescribed instructions and due dates
3. Conduct your work to high ethical standards.

To the student:

In this course, it is suggested that you read the IME 1500 course introduction prior to beginning any of the lessons. This will help orient you to the purpose and procedures of the course. Please prepare and forward only one lesson at a time in order to allow the instructor adequate time to fairly evaluate each assignment. Students with unusual self - imposed deadlines must seek permission of the instructor before turning in multiple lessons otherwise, the lessons will be evaluated and returned one at a time regardless on the number turned in. It is wise to wait for instructor comments prior to completing the next lesson. WebCT records the receipt of each lesson, the grade and return dates of each lesson therefore; lessons must be submitted through the drop box. In rare cases, some lessons may be accepted via email, but that doesn't guarantee that they will be graded and returned any faster. There are many students enrolled in this course consequently, lessons are graded, usually within a few days of their receipt and, in the order of their receipt.

You are encouraged to use resources besides the textbook in this course. The Internet and library are two of these recommended resources. Although you may not have direct experience with manufacturing, you should always attempt to apply as appropriate, practical associated examples and experience as a way to illustrate your understanding of the topic or concept being presented. You may refer to recent articles or additional research that demonstrates your understanding. It does little good to simply reiterate the textbook as your only answer to a homework question. There are many questions that do not lend themselves to real world experiences. They simply deserve a simple and direct answer. When to apply examples and personal experiences is left to your discretion. If you demonstrate your grasp of some difficult topics in a creative way, you will both impress the instructor and do much better on the homework and examinations.

The intent of this course is to broaden your perspective of the value manufacturing brings to society. You should gain a better understanding of the materials, techniques and processing choices that are employed in the production of consumer goods. You will also become more informed about the environmental, safety and, social issues surrounding manufacturing. Hopefully this course will be a meaningful experience for you. Best wishes toward your success.

The Course Plan

1. There are nine lessons, six homework assignments, two **proctored** examinations.
2. The first exam is after lesson #4 exam #2 following lesson #9. The final grade is calculated as follows:

Exam # 1 (Proctored) Available after lessons 1–4 are complete.	200 points
Exam # 2 (Proctored) Available after lessons 1–9 are complete.	200 points
Homework	600 points
Total	1000 points

NOTE: You must pass each of the proctored exams by a minimum of 60% in order to pass the course.

3. Examinations are closed book but you are allowed to bring one 8-½ x 11 in. page of notes (both sides) to use during the examinations.
Please read [How to Schedule a Proctor and Request an Exam](#) before attempting to take exams #1 or #2.
Points earned for homework assignments differ and are indicated at the beginning of each assignment

4. Homework schedule:

Homework	Due	Points
#1	after lesson #2	120
#2	after lesson #3	100
#3	after lesson #4	80
#4	after lesson #5	100
#5	after lesson #7	110
#6	after lesson #9	90
Total		600

4. Make a personal copy of each homework assignment you submit as a backup.
5. Your graded homework will be returned to you with or without comments depending on the necessity for comment.
6. Grading scale:

920 – 1000	A
870 – 919	BA
820 – 869	B
770 – 819	CB
720 – 769	C
670 – 719	DC
620 – 669	D
Below 620	E

Textbook Reading and Course Format

Manufacturing Processes & Materials

George F Schrader

Society of Manufacturing Engineers, Dearborn, Michigan

ISBN 0-87263-517-1 (any edition)

You will notice that specific reading assignments are not listed for any lesson. This is by design. Each lesson deals with specific topics including: techniques, materials, methods and processes. All of these can be found in the textbook. Every item that appears on the examinations will come from the lecture, augmented by the textbook and other recommended resources. Each lesson has its own study guide and may include a homework assignment. We recommend that when possible, you review each lesson topic by reading about it in your textbook prior to viewing the electronic lecture materials. The combined lecture and study guide specify what are considered the important topics. You will be tested on the depth of your understanding of these aforementioned topics.

Academic Integrity

You are responsible for making yourself aware of and understanding the policies and procedures in the undergraduate catalog that pertain to academic integrity. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the office of student judicial affairs. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will be given the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test. **NOTE:** Homework assignments are periodically scanned, filed and retained.