SAM HOUSTON STATE UNIVERSITY

Department of Engineering Technology ETDD 4369 (session 03) Manufacturing Processes and Systems Fall 2017

Instructor:	Junkun Ma		
Office Location:	Room 400J, Pirkle Building		
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Lecture Time:	10:00 – 11:50 Monday & Wednesday		
Lecture Location:	WETL 101		
Office Hours:	13:00 ~ 15:00 Monday & Wednesday; 09:00 ~ 12:00 Tuesday		
	Other time by appointment only		

The instructor reserves the right to make changes to the schedule, policies, assignments, and grading scale described in the syllabus in the event of extenuating circumstances or by mutual agreement between the instructor and the students.

Course Description:

This course serves as an introduction to a broad range of traditional and non-traditional manufacturing processes. Topics include casting and solidification processes, forming and shaping processes, material removal processes, joining processes, special processing and assembly technologies, engineering metrology and instrumentation, and other aspects of manufacturing. The purpose of this course is to provide students with an understanding of common manufacturing processes and systems. Empahsis is placed on understanding of the procedures associated with various manufacturing processes and changes of physical properties of materials during these processes.

Required Textbook:

<u>Fundamentals of Modern Manufacturing: materials, processes, and systems (6th edition)</u> Mikell P. Groover Wiley Publications (www.wiley.com) ISBN-13 978-1-118-98764-3 Copyright 2016

Course Objectives:

This course provides a thorough introduction to modern manufacturing processes commonly used in various industries for different materials. Students are given comprehensive coverage of material properties, common engineering materials, solidification processes, metal forming, material removal processes, property enhancing and surface processing operations, joining and assembly process, special processing and assembly technologies, and manufacturing systems. By the end of this course, students should be able to apply the following principles to solve practical problems:

• Fundamental concepts involved in manufacturing engineering

- Outline and broad perspective of modern manufacturing methods involving metals, ceramics, polymers, and other materials
- Quantitative analysis in important areas such as metal-forming, solidification processing, sheet metal working, and machining technologies
- Fundamentals of a few special manufacturing technologies such as rapid prototyping, electronics assembly and packaging

Lecture/Demonstrations:

The scheduled class meeting time is used for instructional lectures, demonstrations, discussion and evaluation. Lectures will focus upon the essential procedures, techniques, and other information needed to understand manufacturing processes and related systems.

Attendance Policy:

1. Attendance: Every student is expected to be present and *on time* for every lecture. You are tardy whether you come in late or leave early. Roll will be taken at the beginning of each lecture. In case you are absent, whether excused or unexcused, you are still responsible for the material covered.

Attendance Grade

0 - 3 absents	10%
4 absents	5%
5 absents	0%

- 2. Each student should be prepared for class by having carefully read and studied all assigned textbook readings and/or handouts. Each assignment is to be completed on an individual basis. Any assignment turned in late will be penalized. Absences <u>do not</u> exempt you from the responsibility of turning material/assignment in on time and they <u>do not</u> extend the due date of the assignment schedule.
- 3. There will be no makeup exams, quizzes, or assignments except for special events (documented illness and business trip on behalf of SHSU etc.) or by mutual agreement prior to the absences between the instructor and the student.

****(Exempt attendance notification is the responsibility of the student and all info referring to the absent must be presented to the instructor prior to or within one week from the date in question. Therefore, the student should call or e-mail the instructor as soon as possible when becoming aware of the absence.)

Exam:

Comprehensive mid-term and final examinations will be given. The date and content for the mid-term exam will be discussed as the semester proceeds. The final exam schedule will follow university academic calendar. Examinations are a part of the overall learning experience, and will contribute to the mastery of the body of knowledge you gain from the course. Content of examinations will be taken from assigned text readings, quizzes, and assignments.

Quizzes:

The instructor reserves the right to schedule a quiz at any time that he/she feels it may be necessary. These can be planned and the instructor will notify the students one week in advance or they can be "pop" quizzes given without notice. Any students using a cell phone during these quizzes will receive a "zero" on the quiz (please refer to the cell phone policy listed below).

Course Evaluation:

Each student should be prepared for lecture by having carefully read and studied all assigned textbook readings and/or handouts. Each assignment is to be done on an individual basis, and penalties will be accessed for work turned in past due date. The final grade for the course is based on the following grading scale:

Grading Scale:

Assignments	20%
Quizzes	20%
Attendance	10%
Mid-term Exam	20%
Final Exam	30%

Percentage range	Grade
90 - 100	А
80 - 89	В
70 - 79	С
60–69	D
0-59	F

Tentative Schedule:

Week 1	Date 08/23	Wednesday	Assignment Review Course Syllabus Introduction to Manufacturing Processes & Systems
2	08/28	Monday	Structure of Materials
	08/30	Wednesday	Mechanical Properties of Materials
3	09/04	Monday	***Labor Day Holiday***
	09/06	Wednesday	Mechanical Properties of Materials
4	09/11	Monday	Physical Properties of Materials
	09/13	Wednesday	Dimensions and Surfaces
5	09/18	Monday	Common Engineering Materials
	09/20	Wednesday	Metal Casting Process
6	09/25	Monday	Other Solidification Processes
	09/27	Wednesday	Powder Material Processing
7	10/02	Monday	Fundamental of Metal Forming
	10/04	Wednesday	Rolling, Forging, and Extrusion
8	10/09	Monday	Wire/Bar Drawing
	10/11	Wednesday	Sheet Metalworking
9	10/16	Monday	***Mid-term exam***
	10/18	Wednesday	Fundamentals of Metal Machining
10	10/23	Monday	Machining Operations
	10/25	Wednesday	Cutting Tools

11	10/30	Monday	Other Metal Cutting Methods
	11/01	Wednesday	Heat Treatment of Metals
12	11/06	Monday	Surface Treatment
	11/08	Wednesday	Fundamental of Welding
13	11/13	Monday	Welding Processes
	11/15	Wednesday	Other Joining and Assembly Processes
14	11/20	Monday	Rapid Prototyping
	11/22	Wednesday	***Thanksgiving Holiday***
15	11/27	Monday	Manufacturing Systems
	11/29	Wednesday	Planning, Production Control, and QC
	12/01	Friday	All Reports and Assignments Due
*** <u>All</u>	Assign	ments DUE*** **	***** No Assignments accepted after this date******

12/04 - 12/08 FINAL WEEK

Academic Dishonesty:

When under the pressure of deadlines, some students may be tempted to copy another student's drawing and hand it in as their own. Before yielding to such temptation, the student should be aware of the University's policy statement on academic ethics, and that the instructor would consider failure for the course a more appropriate punishment. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating, plagiarism, collusion, and abusing resource materials on an examination or other academic work, which is to be submitted.

Classroom Rules of Conduct:

Students will avoid doing behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, obstructs the mission of the university. <u>Cellular telephones</u>, <u>earphones and pagers must be turned off before class begins.</u> Students are prohibited from eating and drinking in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Student Absences on Religious Holy Days Policy:

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the students and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.

Tobacco Policy:

In order to promote a healthy, safe, and aesthetically pleasing work, educational, and living environment, Sam Houston State University (SHSU) will endorse a smoke free and tobacco free environment. The primary purpose of this policy is to establish guidelines prohibiting smoking and the use of all tobacco products. Tobacco products include cigarettes, cigars, pipes, smokeless tobacco, and all other tobacco products.

Cell Phone Policy:

The use by students of electronic devices that perform the function of a telephone or text messages during class-time may be prohibited if deemed disruptive by the instructor to the conduct of the class. Arrangements for handling potential emergencies may be granted at the discretion of the instructor. Failure to comply with the instructor's policy could result in expulsion from the classroom or with multiple offenses, failure of the course.

Any use of a telephone or text messages or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these devices during a test is considered evidence of cheating and could result in a charge of academic dishonesty.

Disabled Student Policy:

It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request help with academically related problems stemming from individual disabilities from their instructors, school/department chair, or by contacting the Chair of the Committee for Continuing Assistance for Disabled Students and Director of the Counseling Center, Lee Drain Annex, or by calling (936) 294-1720.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Counseling Center and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. **NOTE: no accommodation can be made until you register with the Counseling Center**

No assignments will be accepted after the last day of lecture on Friday, Dec. 01, 2017