

Cover Sheet

EMA4623C Process Metallurgy

Info

Process	Course Modify Ugrad/Pro
Status	Pending
Submitter	Nunez,Julissa jnunez@ufl.edu
Created	10/28/2014 3:39:53 PM
Updated	12/1/2014 11:09:28 AM
Description	Engineering aspects of mineral processing, including unit operations and flow sheets. Science and technology of metal extraction with applications to specific ferrous and non-ferrous metals.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Materials Science and Engineering 011909000	Xue, Jiangeng		10/28/2014
College	Approved	ENG - College of Engineering	Caple, Elizabeth		11/24/2014
University Curriculum Committee	Comment	PV - University Curriculum Committee (UCC)	Gebhardt, Susan	Added to the December agenda	12/1/2014
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			12/1/2014
Statewide Course Numbering System					
Office of the Registrar					
Student Academic Support System					
Catalog					
College Notified					

Fall 2014 Syllabus: EMA 4623
Process Metallurgy

1. **Course Description:** (3 credit hours) – Engineering aspects of mineral processing, including unit operations and flow sheets. Science and technology of metal extraction with applications to specific ferrous and non-ferrous metals.
2. **Co-requisites:** EMA 4120 – Physical Metallurgy 1
3. **Course Objectives:**
To introduce the student to processing of structural metallurgical materials and materials selection for structural applications
4. **Contribution of course to meeting the professional component:**
This is a 3 credits course. It provides 2 credits towards engineering sciences and 1 credits towards design.
5. **Relationship of course to program outcomes:** This course addresses the following MSE Program outcomes (Note: Numbers refer to the list of MSE Program Outcomes)
 - 4) Ability to apply and integrate knowledge of structure, properties, processing, and performance to solve materials selection and design problems within realistic constraints. The problems involve designing/selecting a process to produce a part or a product. The effort includes several steps (but not limited to) defining the product application, materials selection, comparison between different processing options based on the product specifications, material selected, the process parameters, and environmental impact, as well as cost analysis. The course also includes field trips to materials processing facilities in the area. (High Coverage)
 - 6) Ability to identify, formulate and solve engineering problems. The course lectures include examples of various processing technologies and their applications in different practical situations. The project involves identifying the product specifications needed to meet its application requirements. The students select the processing methodology. They ask themselves several questions such as: What is the most appropriate casting process? What is the most appropriate alloy to use in the casting, considering both the performance and the manufacturability (castability and machinability)? Thus, they learn how to formulate the problem and how to solve it. (High coverage)
 - 9) Understanding of the economic impact of engineering solutions.(low coverage) As part of the design project, students are asked to consider economic factors, such as production costs and marketing.
6. **Instructor:** Dr. G.E. Fuchs
 - Office location: Rhines Hall 116
 - Telephone: 352-846-3317
 - E-mail address: gfuch@mse.ufl.edu
 - Class Web site: The course website can be found on the Canvas system <http://lss.at.ufl.edu>. There you can find the course syllabus, lecture notes, grades, and announcements. Check it frequently.
7. **Teaching Assistant:** TBD
8. **Office hours:** TBD
9. **Meeting Times:** TBD

10. **Meeting Location:** TBD

11. **Material and Supply Fees:** Not applicable

12. **Textbooks and Software Required:**

Title: Manufacturing Processes for Engineering Materials – 5th Edition
Author: S. Kalpakjian and S.R. Schmid
Publisher: Addison-Welsey Publishing, Co., Reading, PA

13. **Course Outline:**

Week	Topic
1	Design considerations in manufacturing
2	Mechanical properties for design
3	Test techniques for design
4	Solidification and casting
5-6	Wrought processing
7-8	Sheet metal forming
9-10	Powder metallurgy processing
11	Joining
12	Coating
13	Comparison to other structural materials
14	Economics of design
15-16	Repair and rejuvenation

14. **Attendance and Expectations:** Lecture attendance is highly recommended. While attendance is not mandatory, experience has shown that those who attend lectures earn higher grades in the course. Arrival on time is expected. Please turn off all cell phones upon entering class. Reading of newspapers, work on assignments for this or other classes, or other activities that are not part of the class are not allowed during lecture. Students who do not comply with these requirements or who behave disorderly or disrespectfully may be asked to leave the classroom.

15. **Make-up exams:** Make up exams will be provided only with the ***approval of the instructor in accordance with university policies.***

(<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) In general, acceptable reasons for excused absence from an exam include illness, serious family emergencies, special curricular requirements, military obligation, court-imposed legal obligations, and religious holidays. In all cases, you will be required to provide written documentation, and obtain instructor approval. You will not be excused from any exam without following the policy above, with no exceptions. Students not in attendance for the scheduled exam will receive a score of zero. Make-up exams for excused absences as well as exam conflicts must occur within 1 week of the missed exam, and may occur before the missed exam.

16. **Homework Exercises:** Homework exercises will be assigned regularly. These homework questions are essential to your study and some exam and quiz questions will be adapted from them. **No late homework assignments will be accepted.** Please see the TA during his office hours to discuss homework problems.

17. **Quizzes:** You will be given short quizzes throughout the semester; and the lowest quiz grade will be dropped. Make up quizzes will be provided only with the **approval of the instructor in accordance with university policies.**

18. **Grading:**

1) Homework given approximately bi-weekly, due within 1 week of assignment. Late homework accepted until solutions handed-out, but penalized 10% per day after due date. All work must be shown for full/partial credit.

2) Exams: 3 mid-terms tentatively schedule for: TBA

Optional final – Tues., December 16th, 5:30-7:30pm

All work must be shown for full/partial credit.

Questions require thought/common-sense.

	Without Optional Final	With Optional Final
3 Midterm Exams	25% each	20% each
Bi-weekly Homework	25%	20%
Optional Final Exam	N/A	20%
Total	100%	100%

19. **Grading Scale:**

Percentage	≥92	≥88	≥84	≥80	≥76	≥72	≥68	≥65	≥62	≥59	≥56	<56
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Grade Points	4.00	3.67	3.33	3.00	2.67	2.33	2.00	1.67	1.33	1.00	0.67	0.00

20. **Honesty Policy:** All students admitted to the University of Florida have signed a statement of academic honesty committing them to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others. Note that failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures.

See <http://www.dso.ufl.edu/sccr/procedures/honorcode.php>

21. **Accommodation for Students with Disabilities:** Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

22. **UF Counseling Services:** Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
- Career Resource Center, Reitz Union, 392-1601, career and job search services.

23. **Software Use:** All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

24. **Students are expected to provide feedback** on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

Syllabus Requirements Checklist

The University's complete Syllabus Policy can be found at:

http://www.aa.ufl.edu/Data/Sites/18/media/policies/syllabi_policy.pdf

The syllabus of the proposed course **must** include the following:

- Course title
- Instructor contact information (if applicable, TA information may be listed as TBA)
- Office hours during which students may meet with the instructor and TA (if applicable)
- Course objectives and/or goals
- A weekly course schedule of topics and assignments.
- Methods by which students will be evaluated and their grades determined
- Information on current UF grading policies for assigning grade points. This may be achieved by including a link to the appropriate undergraduate catalog web page:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.
- List of all required and recommended textbooks
- Materials and Supplies Fees, if any
- A statement related to class attendance, make-up exams and other work such as: *"Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>."*
- A statement related to accommodations for students with disabilities such as: *"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation."*
- A statement informing students of the online course evaluation process such as: *"Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>."*

It is **recommended** that the syllabus contain the following:

- Critical dates for exams or other work
- Class demeanor expected by the professor (e.g. tardiness, cell phone usage)
- The university's honesty policy regarding cheating, plagiarism, etc.

Suggested wording: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

- Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies