

Nontraditional Manufacturing

EML 6323 Sections 127H, 1271, 1272, 157B

Class Period: MWF, 6th period, 12:50 pm-1:40 pm

Location: CSE E118, UF EDGE Online

Academic Term: Spring 2019

Instructor:

Hitomi Greenslet

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352-392-0812

Office Hours: MWF, 1:55 pm-2:45 pm, MAE-B 226

Teaching Assistant:

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Office Hours: Th, 10:00 am- 12:00 pm, NSC 205

Course Description

Focusing on nontraditional additive and subtractive manufacturing processes using electrical, chemical, ultrasonic, magnetic, and photonic energy—including processes and equipment.

Course Pre-Requisites / Co-Requisites

Pre-req: Graduate standing

Co-req: N/A

Course Objectives

Upon completion of this course, students should be able to demonstrate the following:

- A descriptive and qualitative understanding of advanced (nontraditional) manufacturing processes
- The ability to rapidly and accurately perform manufacturing engineering evaluations and analyses
- The ability to survey, understand, and present advanced knowledge and information relevant to the current trends in nontraditional manufacturing

Materials and Supply Fees

N/A

Textbooks and Software

Advanced Machining Processes–Nontraditional and Hybrid Machining Processes

Hassan El-Hofy

McGraw-Hill, 2005

ISBN 0-07-145334-2

Recommended Materials

- *Intelligent Energy Field Manufacturing: Interdisciplinary Process Innovations*
Wenwu Zhang
CRC Press, 2010
ISBN 978-1-4200710-1-6
- *Manufacturing Processes for Engineering Materials* (6th Edition)
Serope Kalpakjian and Steven Schmid
Pearson Education, Inc., 2017
ISBN number 978-0-13-429055-3
- *Fundamentals of Modern Manufacturing* (6th Edition)
Mikell P. Groover
John Wiley & Sons, Inc., 2013

ISBN 978-1-119-12879-3

- *Manufacturing Processes and Equipment*
George Tlusty
Prentice-Hall, 2000
ISBN 0-201-49865-0
- Journals including *ASME Journal of Manufacturing Science and Engineering*, *Annals of the CIRP*, *Precision Engineering*, etc.

Course Schedule

See the attached course schedule for more detail. (Dates are subject to change—this is to serve as a guideline only.)

Exam schedule

[On-campus students]

Midterm exam: March 1, 2019 (12:50 pm – 1:40 pm)

Final exam: April 29, 2019 (10:00 am – 12:00 pm)

[Off-campus students]

Midterm exam: March 1, 2019 – March 7, 2019 (5 pm)

Final exam: April 29, 2019 – May 2, 2019 (5 pm)

Attendance Policy, Class Expectations, and Make-Up Policy

Class policies

- Attendance is expected and encouraged for all students, but it will not be recorded. If you need to miss a class, please make appropriate arrangements with a classmate for class notes.
- Cheating or any other form of academic dishonesty will result in failure and prosecution according to University policies.
- Students are expected to conduct themselves in a manner that does not interfere with other students' learning. Disruptive or distracting behavior is prohibited, and Prof. Greenslet reserves the right to temporarily or permanently dismiss distracting students from the classroom.
- Students are responsible for all announcements, assignments, etc., made during lectures, including changes in the scheduling of lecture topics, homework assignments, and exams. Class absence is not a valid excuse for being unprepared.
- Any changes in the schedule or assignments will be communicated to the class via e-mail using your Gatorlink (@ufl.edu) e-mail address and the course website. You are responsible for monitoring your mailbox and the website regularly for any class notices.

Homework policies

- Homework must be neat and legible and show all major steps.
- Homework must be on 8.5" x 11" paper. Multiple sheets must be stapled in the proper order. Homework must have the assignment number, your name, and the date of submission in the upper right-hand corner of the first sheet.
- Homework must have the page number in the bottom right corner of every page.
- Failure to adhere to the formatting requirements could result in loss of points.
- You may discuss the homework with your classmates; however, all students must provide the solutions themselves. Copying of homework will be treated as academic dishonesty. Use of a solution manual or any online answer source is also considered dishonest.
- Excused absences are consistent with University policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

[On-campus students]

Homework must be turned in at the **start** of class on the due date. Do NOT slip it under Prof. Greenslet's door. In general, late homework will not be accepted.

[Off-campus students]

Homework must be turned in by e-mail through the UF e-learning system **by 12:50 pm** on the due date. In general, late homework will not be accepted.

Exam policies

- It is the students' responsibility to demonstrate their knowledge on exams. In order to be able to grade your work, it must be neat, be legible, and follow logical steps with all work shown. Partial credit may be given for work that can be followed and where the nature and magnitude of the mistake can be identified. No credit will be given for correct answers with insufficient indication of how they were obtained.
- Students should be aware that their work is submitted under the honor code pledge taken by UF students. The pledge is *On my honor, I have neither given nor received unauthorized aid in doing this assignment*. Students can learn more about the UF honor code at the UF Student Government website. (<https://sccr.dso.ufl.edu/>)
- Excused absences are consistent with University policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

[On-campus students]

The midterm exam will be held during the regular class period on date that will be announced later. The final exam will be held at the time assigned by the Registrar. All exams will be held in the regular classroom. You must be present for all exams when they are given.

[Off-campus students]

All exams will follow UF EDGE regulations.

Project (written report and presentation) policies

[On-campus students]

Each team of **three** students must choose a subject relevant to nontraditional manufacturing processes, survey the relevant literature, and summarize the chosen processes.

[Off-campus students]

Each student must choose a subject relevant to nontraditional manufacturing processes, survey the relevant literature, and summarize the chosen processes.

Written report:

- The report must be on 8.5" x 11" paper.
- Use the given template. The report must follow the guidelines described in the template. The page number must be in the bottom right corner of each page.
- The report must have the date of submission in the upper-right-hand corner of the first sheet.
- The report must include the title, your name, abstract, introduction, main body of the report, conclusions, and at least ten (10) references.
- The report must be no longer than six (6) pages overall.
- The project progress will be checked step by step: (1) title and abstract, (2) outline, (3) list of references, (4) introduction, and (5) figures and tables. Each document (PDF file) must be submitted by the group leader by e-mail through the UF e-learning system by 12:50 pm on the due date. In general, late submissions will not be accepted.
- Each student must submit the complete final report with his/her own *Performance Evaluation Form* (PDF file) by e-mail through the UF e-learning system by 12:50 pm on the due date. In general, late submissions will not be accepted.
- **Plagiarism is not acceptable.** To learn how to prevent misconduct related to plagiarism, refer to <http://flexible.dce.ufl.edu/policies/#plagiarism>.

Written presentation:

- The presentation must be prepared on PowerPoint slides (8.5" x 11" size).
- The presentation slides must be numbered and must include the title, your name, main body of the presentation, and date of submission.
- The presentation must indicate sources as needed.

- **Plagiarism is not acceptable.** To learn how to prevent misconduct related to plagiarism, refer to <http://flexible.dce.ufl.edu/policies/#plagiarism>.
- The presentation slides (PowerPoint file) must be submitted by the group leader by e-mail through the UF e-learning system by 12:50 pm on the due date. In general, late submissions will not be accepted.

Oral presentation [**On-campus students only**]:

- Use PowerPoint slides (8.5" x 11" size).
- Each group must give a presentation in class. The presentation schedule will be determined later.

Feedback on written report policies

Feedback is required for both on-campus and off-campus students.

- Each student must choose another students' project and write comments and suggestions about it.
- Feedback must be on a single 8.5" x 11" page.
- Feedback must have the date of submission in the upper right-hand corner of the sheet.
- Feedback must include your name and the title of the project you chose.
- Use 10 pt. black Arial font.
- Use single spacing between lines.
- Use top, bottom, right, and left margins of 1".
- Feedback (PDF file) must be submitted by e-mail through the UF e-learning system by 12:50 pm on the due date. In general, late submissions will not be accepted.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework	15	15%
Project (report and presentation)	25	25%
Feedback	5	5%
Exam 1	25	25%
Final Exam	30	30%
		100%

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on the UF grading policy may be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

UF Graduate School Policy

Letter grades of C-, D+, D, D- or E are not considered passing at the graduate level. Although the grade points associated with these letter grades are included in grade point average calculations, courses with these grades will not be credited towards graduation. Also, grades of B-, C+ or C count toward a graduate degree if an equal number of credits in courses numbered 5000 or higher have been earned with grades of B+, A- and A, respectively. Further

explanation of graduate grading policies can be found at <http://gradcatalog.ufl.edu/content.php?catoid=12&navoid=2750#grades>.

Students Requiring Accommodations

Students requesting accommodations for disabilities should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) and provide appropriate documentation. Once registered, students will receive an accommodation letter, which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. 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/>.

University Honesty Policy

UF students are bound by the Honor Pledge: "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 website (<https://sccr.dso.ufl.edu/>) 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 the TA in this class.

Commitment to a safe and inclusive learning environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. If you feel like your performance in class is being impacted by discrimination or harassment of any kind please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@ufl.edu

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the Office of Title IX Compliance, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu.

Campus Resources:

Health and Wellness

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or (352) 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 911 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 911 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
<https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.