

IET 457 –Advanced Casting Processes, Course Syllabus

Catalog Description: (4) Prerequisite MET 257, or permission of instructor. Advanced casting processes and design problems. Laboratory Individual Study.

Course Content and Objectives: In this course, advanced aspects of casting processes are studied and practiced. These processes are presented in an applied technology setting. Students will master the operation of a small foundry and deal with process problems such as sand quality, melting procedures and operational safety. Access to and use of various casting materials, systems, and commercial software is encouraged. The objective is to have the student develop the ability to use the foundry and to solve many practical problems in the casting process.

Student Learning Outcomes and Assessments: The student will show their ability at a professional level to:
evaluate appropriate use of casting process techniques for given casting scenarios by documenting solutions.
model and analyze casting processes using available methods to design and acquire valid parts by
documenting solutions (both manual and computer based methods) in homework, labs, and exams.
assess the success of the process(es) through experimental comparisons, benchmark quality, and good engineering judgment by documenting solutions in homework, labs, and exams.
apply commercial software as appropriate (to support process development) using portfolios and presentations.

Resources: Technology of Metalcasting, by Schleg; American Foundry Society Publ., 2003. ISBN#0-87433-257-5
Software: Calculator, net access, word processing, and spreadsheets may be required. SolidCast™ provided.

Instructor: Dr. Craig Johnson, Hogue Technology Rm. 304, 963-1118 (Dept. 1756) cjohnson@cwu.edu
Hours: as posted on the office door, or set up an appointment.

Grading Policy:

Individual Reports (10)	20%
Individual Project	50%
Participation	30% (weightings are approximate)

A(92-100), A-(90-92), B+(88-90), B(82-88), B-(80-82), C+(78-80), C(72-78), C-(70-72), D+(68-70), D(62-68), D-(60-62), F(<60)

NOTE: Extended absence is grounds for a failing grade. Late work may be refused or penalized.

Homework/Labwork:

All individual work should be appropriately labeled with a title, name, date, etc. Each student will have personal FEPC software and is encouraged to use it both in the class and at home. Retain all data on personal disks. Use back-up disks! Commercial software is unavailable at this time, but can be purchased.

Project: An individual project is required. Graduate students have a heavy project weighting for their grades. The project should support their graduate endeavors with a professional analysis using commercial software. More information will be handed out in class, but they are oriented toward using the course content in a subject of your interest and will be orally presented in class. Please support your portfolio, and professional development. Students have created relationships off-campus that lead to employment!

Conduct: Role of the instructor vs. role of the student.

The instructor is a facilitator. This role is two-fold. First, to facilitate the accomplishment of the course objectives. Do not expect to have the text read to you. Class time will be used for discussion of the assigned and any supplementary material, as well as reviewing homework, taking exams, etc. Second, you will be assessed on your progress in accomplishing course objectives, and be given timely feedback.

The student is an active learner. This role demands personal responsibility for your learning. Strive to optimize your learning skills, and keep track of your outcomes. Be prepared to participate in all activities.

ADA: Students who have special needs or disabilities that may affect their ability to access information and/or material presented in this course are encouraged to contact me or the ADA Compliance Officer, ADA Affairs and Student Assistance on campus at 963-2171, for additional disability related educational accommodations.

ETHICS: Plagiarism is considered a serious offense and will not be tolerated. Anyone not familiar with how to paraphrase, quote, or cite is encouraged to seek assistance from the Writing Lab on campus. Papers containing plagiarized material shall receive an "F." Cheating on exams will be dealt with in the same manner as cheating on an FAA test - the score for the exam will be a "0". CWU Policy is enforced.

IET 457 –Advanced Casting Processes; Class Schedule

NOTE: Individual Study students will meet once a week with the instructor (by arrangement).

WEEK 1		<u>DUE</u>
Register (co-time w/MET257: TR at 1-4PM in HT111), schedule Introduction – description of resources and interests.	Memo: Time and Activity	
WEEK 2 Review of safety and available casting processes.	Memo: Time and Activity Discuss process improvements	
WEEK 3 Discussion of Projects, Interests, and Scope	Memo: Time and Activity Discuss project interests	
WEEK 4 Discuss Project Proposal	Memo: Time and Activity Submit Project Proposal Draft	
WEEK 5 Finalize Project Proposal	Memo: Time and Activity Submit Project Proposal	
WEEK 6 Discuss Project Issues	Memo: Time and Activity, Project Update	
WEEK 7 Discuss Project Issues	Memo: Time and Activity, Project Update	
WEEK 8 Discuss Project Report	Memo: Time and Activity Project Report Draft	
WEEK 9 Discuss Project Report	Memo: Time and Activity REVIEW Project Report Draft	
WEEK 10 Present Project to class	Memo: Time and Activity Turn in Project Report.	

MEMO

Name: _____ Date: _____

Week # _____

Day: Hours: Comment:
Time Log: _____

Description of Task, Results and Time spent:

Total Time: _____

TASK# _____ TIME: _____ COMMENTS:

TASK# _____ TIME: _____ COMMENTS:

TASK# _____ TIME: _____ COMMENTS:

TASK# _____ TIME: _____ COMMENTS:

TASK# _____ TIME: _____ COMMENTS:

ACTIONS TO BE TAKEN: (describe your plans for next week).

SUMMARY OF PROGRESS: