COURSE OBJECTIVE: To give the student a comprehensive overview of the study of metal casting technology.

COURSE TIME SCHEDULE: LECTURE - TUESDAY 8:00 AM to 10:00 AM
LAB - THURSDAY 8:00 AM to 11:00 AM

INSTRUCTOR: Scott Brogden EMAIL: sbrogden@csuchico.edu
TELEPHONE: Office 898-5097, Cell 680-2521, MMEM Office 898-5346
OFFICE HOURS: M-TH 1:00 PM to 2:00 PM and TH 11:00 AM to Noon, Plumas 114C

See course schedule for reading assignments on the following sources:

TEXT: Manufacturing Engineering and Technology, Kalpakjian, 5th ed.

OTHER REFERENCES:
- Aluminum Casting Technology, AFS, Inc. (Library Reserve)
- Exploring Patternmaking and Foundry, Miner (Library Reserve)
- Iron Casting Handbook, (Library Reserve)
- Steel Casting Handbook, (Library Reserve)
- Matched Tool and Die Steel Manual, Carpenter Steel Co.
- ASM Handbook, Vol. #15, General reference (Library Reserve)
- Forming, Vol. #2, SME, General reference (Library Reserve)
- Cost-Effective Casting Design, AFS, Inc. (CD-ROM)

EVALUATION PROCEDURES

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LAB REQUIREMENTS - Safety glasses required

Metal Casting: (All castings and cores must be assigned by the instructor)
______2 each Sand Molds (resulting castings must be salable)
______2 each H/W Drum Shell Molds (resulting castings must be usable)
______8 each Hoist/Winch Drum Cores (for Shell Molds)
______1 each Sand Testing Series (teams of two)

Pattern Drawings:
______1 each Part Design (hand-drawn sketch)
______1 each Pattern Working CAD Drawing (part portion only, with dim’s)
______1 each Match Plate Layout (hand sketch of part with gating system)
______1 each Match Plate Layout CAD Drawing (part with gating system, dim’s)

Pattern Making:
______1 each Pattern
______1 each Match Plate (using above pattern)
______1 each Core Box (optional)

Heat Treating: (teams of four)
______1 each Aluminum Heating Treating Experiment

Clean-up Assignment:
______1 each Clean-up Area (______________________)

FIELD TRIP (BAY AREA) - 2 page typed report (If you cannot attend the field trip, an eight page paper on an assigned topic will be an acceptable substitute.)

ADDITIONAL ASSIGNMENTS
Text and reserved book readings as assigned
Oral Presentation: (______________, 2010)
Technical Paper: 8-10 pages of text (due at time of oral presentation)
       Provide electronic file of paper and test questions for posting on Web CT/Vista.
       Test Questions: 5 T/F & 5 Multiple Choice (due at time of oral presentation and
drawn from your technical report material.)
Article Reviews (2): Casting-related article 2 years old or less, 2 pages, double-
spaced with copy of article attached.

TESTS
MID-TERM: Thursday 3/25 9:00 – 11:00 AM
FINAL EXAM: Tuesday 5/18 10:00 AM – 11:50 AM
Name: ___________________________  E-mail: ___________________________
Lab #: ______  Local Phone #: ____________  Permanent Phone #: ___________
Report Topic: ___________________________

Castings (cleaned-up)
1. ___________________________  Pattern Design Sketch _______________________
2. ___________________________  Match Plate Design Sketch ___________________
3. ___________________________  Match Plate Working CAD Drawing ____________
4. ___________________________  Match Plate (with casting) ___________________

NOTE: Only assigned castings will be accepted.

Cores _____  Aluminum H.T. Experiment _______________________
Sand Test Series _____  Reference List ___________________________
Return Olivine Sand Handbook _____  Presentation Outline ___________________
Return PetroBond Sand Handbook _____  Technical Paper ______________________
Return Pattern Hardware _____  Test Questions ___________________________
Oral Presentation Evaluations ________  Oral Presentation ________ /
Article Review #1 __________  Field Trip Report ___________________________
Article Review #2 _________
Clean-up Assignment ______

In case of emergency notify:  Name: ___________________________
   Phone #: ___________________________