

## COURSE DESCRIPTION EDMM 3520

CATALOG DATA: Principles of pattern design, molding, melting, filling and process analysis using a variety of materials and production techniques. Solidification of metals and alloys as a nucleation and grain growth process. Formation of inclusions and other casting defects will be discussed. Theory and practice in metal casting principles using sand, shell, investment, die, and non-traditional processes. (3 Credits hours)

TEXT: Technology of Metal casting, Fred P. Schleg, American Foundry Society  
REFERENCE: Metal Handbook, Volume 15 Casting, ASM International

PREREQUISITE: Understanding of mechanical, physical, thermal, and chemical properties of industrial materials.

### **Special Instructions:**

1. Much of the laboratory material is covered in this book. Information presented in class is referenced in the text and your professor if necessary can provide additional information.
2. Work Groups of four students will be organized for each lab.
3. You must summarize either a Journal Article or an Article from a Metal Casting Web Site. The article must come from "Modern Casting" or <http://www.moderncasting.com/>. The summary must be a well written, typed, double-spaced, and error-free (do not copy the author's work except for short quotations). The summary is due on date of Exam 1. Further description of this assignment and an evaluation form is provided on page 6.
4. Class attendance is expected, and absences will result in a grade reduction (-1% per class & -2% per tour). Please be attentive and refrain from any unnecessary private conversations. We will listen to you when you are speaking, so please listen to us when we speak.
5. If you anticipate missing a test or meeting an assignment due date, or if an emergency arises which causes you to miss either, please discuss the matter with your professor. Approval for making up a missed test or submitting late written work is not automatic.
6. All students are welcome to discuss any aspect of the course, at any time, with the professor. Do not delay such discussions until the last few weeks of class. There is little that can be done at that late date.
7. Incomplete grades can be given only for reasons "beyond the control of the student," and not for failing work.
8. The only email address that should be used by WMU students and WMU faculty and staff is the email address that typically takes the form [firstname.middleinitial.lastname@wmich.edu](mailto:firstname.middleinitial.lastname@wmich.edu). Email users cannot automatically forward email from this address to other addresses.
9. A Comprehensive Final Exam will be given during finals week. The time and the room will be announced.

**Evaluation:**

90 - 100% = A  
85 - 89.9% = BA  
80 - 84.9% = B  
75 - 79.9% = CB  
70 - 74.9% = C  
65 - 69.9% = DC  
60 - 64.9% = D  
BELOW 60% = E

- EXAM 1	15%
- EXAM 2	15%
- EXAM 3	15%
- EXAM 4 (Comprehensive Final)	20%
- Summary	2%
- Lab #1	5%
- Lab #2	5%
- Lab #3	5%
- Lab #4	5%
- Lab #5 (Final Project)	8%
- Attendance	5%