

# ME-215

## ENGINEERING MATERIALS AND PROCESSES

**TEXT:** E. Paul DeGarmo, J. Temple Black, Ronald A. Kohser, Materials & Processes in Manufacturing, 9<sup>th</sup> Ed., John Wiley & Sons Inc., 2003, ISBN # 0-471-65677-1

**REF:** A guide to writing as an Engineer, by D. Beer, 2<sup>nd</sup> Ed., Wiley ISBN 0-471-43074-9

**LAB MANUAL:** ME 215A: R. Dubrovsky, Engineering Materials and Processes,

WK	TOPIC	PAGES	REVIEW QUESTIONS
1	Introduction.	1-23	Ch.1;Q-S: 1,3,6,23, 28,33
2	Nature of Metals and Alloys.	52-65	Ch.3;Q-S: 1,2,5,11,12,15,16,18,26,28
3	Production & Properties of Common Engineering Metals.	27-51	Ch.2;Q-S: 1,3,6,7,10,11,12,14,24,25
4	Fundamentals of Metal Alloys, Equilibrium Diagrams.,	66-81,	Ch.4;Q-S: 1,3,8,9,10,11,12,13,14,15
5	<b><u>TEST #1</u></b>		
6	Iron-Iron Carbide Equilibrium Diagram, Steels & Cast Irons.	73-79	Ch.4;Q-S:18,23,24,26,27,28,29,30, 37, 38
7.	Heat Treatment of Metals.	82-103	Ch.5;Q-S: 1,5,6,7,8,10,20,21,26,46
8	Cast Irons and Steels, Non-ferrous Alloys, Non-metallic Materials. Materials selection for designed product.	106-124 126-144 145-171 174-188-	Ch.6;Q-S: 2,13,15,17,20,36,43 Ch.7;Q-S: 4 Ch.8;Q-S:2 Ch.9;Q-S:3
9	The Fundamentals of Metal Forming, Hot and Cold Working Processes.	365-381 382-406 407-453	Ch.17;Q-S:3,20,29,36 Ch.18;Q-S:3,33 Ch.19;Q-S:1,17,29,35
10	Casting, Powder Metallurgy and Joining Process. Processes and Their Influence on the Design Aspects of Machine Components.	276-295 296-324 325-343 344-364 920-930 933-940 941-960 961-988	Ch.13;Q-S-2,7,9 Ch.14;Q-S:1,34 Ch.15;Q-S:1,3,4,22 Ch.16;Q-S:1,2,3,9,14 Ch.35;Q-S:3,7 Ch.36;Q-S:1,8,10 Ch.37;Q-S:7 Ch.38;Q-S:1,5,11,12,28
11	<b><u>TEST #2</u></b>		
12	Measurement & Inspection, Process Capability & Quality Control.	189-231 232-245	Ch.10;Q-S:1,9,10,11,21,23,40 Ch.11;Q-S:5,9,10
13	Metal Cutting, Chip-type Machining Processes, Tool Geometry.	480-512 515-543	Ch.21;Q-S:3,4,6,15,20 Ch.22;Q-S:1,6,8,13,17
14	Machining Processes.	548-582 583-610 611-630 632-655 808-859	Ch.23;Q-S:2,4,8,21 Ch.24;Q-S:8,21,23 Ch.25;Q-S:1,12 Ch.26;Q-S:33 Ch.32;Q-S:no questions
15	<b>FINAL EXAM</b>		

**Home work assignment is due on a next week after lecture.**

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