

Fall 2019

# ME 316-003: Machine Design

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## ME 316 MACHINE DESIGN

### COURSE SYLLABUS - 2019 Fall Semester

TEXT: R. L. Norton, Machine Design - An Intergrated Approach, 5<sup>th</sup> Edition  
ISBN 0-13-33567, Prentice Hall 2014

WEEK	TOPICS	SECTIONS	ASSIGNMENTS
1	Course Intoduction Chapter 1 Introduction To Design Chapter 2 - Materials and Processes	Instructor Notes 1-1 -1.4, 1-6 - 1.10 2.0 -2.4	Instructor Questions, 1-1, 1-4, 1-5, 1-6, 1-11
2	Chapter 2 - Materials and Proceses - continued Chapter 3 - Kinematics And Load Determination	2.5 - 2.8 3.0 - 3.3, 3.8 - 3.3.15 - 3.18	2-1, 2-4, 2-5, 2-13, 2-15 3.1, 3-4, 3-5, 3-10, 3-17
3	Extra Credit Projects Introduced - 09/19/19 Chapter 4 - Stress, Strain and Deflection	Instructor Notes 4.0 - 4.4, 4.6 - 4.10, 4.13 - 4.17, 4.19	4-9, 4-10, 4-17, 4-19, 4-62
4	Chapter 5 - Static Failure Theories Chapter 6 - Fatigue Failure Theories	5.0 - 5.4, 5.6 6.0 - 6.7	5-3, 5-4, 5-7, 5-8, 5-11
5	Chapter 6 - Fatigue Failure Theories - continued	6.8 - 6.13	6-1, 6-3, 6-4, 6-7, 6-20
6	EXAM No.1 - 10/10/19 Chapter 7 -Surface Failure	7.0 - 7.14	7-1, 7-2, 7-7, 7-13, 7-16
7	Chapter 8- Finite Eelement Analysis Chapter 9 - Design Case Studies	8.0 - 8.7, 8.9 9.0, 9.4 - 9.8	8-1, 8-5, 8-6, 8-16, 8-22
8	Chapter 10 - Shafts, Keys and Couplings	10.0 -10.15, 10.17	10-1, 10-9, 10-11, 10-36
9	Chapter 11 - Bearings and Lubrication	11.0 - 11.13, 11.14	11-3, 11-5, 11-25, 11-48
10	Chapter 12 - Spur Gears Chapter 13 - Helical, Bevel and Worm Gears	12.0 - 12.12.11, 12.13 13.0 - 13.2	12-1, 12-3, 12-44,12-51

11	<b>EXAM No. 2 - 11/14/19</b> Chapter 13 - Helical, Bevel and Worm Gears - continued	13.3 - 13.5	13-1, 13-3, 13-9, 13-26, 13-32
12	<b>Extra Credit Projects due - 11/22/19</b> Chapter 14- Spring Design	14.0 - 14.9, 14,10	14-1, 14-3, 14-6, 14-43, 14-59
13	Chapter 15 - Screws and Fasteners	15.0 - 15.10, 15.12	15-1, 15-7, 15-9, 15-47, 15-54
14	Chapter 16 - Weldments	16.0 - 16.10	16-2, 16-3, 16-13, 16-16
15	Chapter 17 - Clutches and Brakes - continued <b>FINAL EXAM - 12/19/19</b>	17.0 - 17.7	17.1, 17-3, 17-7, 17-31

**Note: Exam dates are tentative and subject to change.**