MECHANICAL ENGINEERING GRADUATE COURSES
COMMON COURSE SYLLABI

The following is a listing of all common course syllabi for graduate courses in the Mechanical Engineering Department. Courses with an (*) contain projects. Students in the Master of Science without thesis degree program must take four (4) courses that contain projects. These projects must be kept in a portfolio that is presented to the advisory committee for evaluation in the final semester.

Controls:
1. EEL 6672 Optimal Control Systems
2. EML 6311 Systems Control

Helicopter Dynamics:
1. EAS 6155 Helicopter Dynamics
2. EAS 6156 Aeroelasticity

Manufacturing:
1. EIN 5603C Industrial Automation *
2. EIN 6392 Manufacturing Systems *
3. ESI 6222 Inspection, Quality Control and Reliability *
4. ESI 6247 Design of Experiments/Regression Analysis *
5. ESI 6306 Operations Research for Engineering
6. ESI 6524 Modeling of Manufacturing Systems *

Materials:
1. EGM 6562 Mechanics of Composite Materials *
2. EML 6233 Failure Prevention *
3. EML 6235 Mechanical Properties of Polymers *
4. EML 6239 Fracture Mechanics *

Solid Body Mechanics:
1. BME 6222 Molecular, Cellular and Tissue Biomechanics
2. BME 6572 Nanotechnology
3. BME 6638 Fields, Forces, and Flows in Biological Systems
4. EGM 5351 Introduction to Finite Element Methods *
5. EGM 5653 Introduction to Elasticity *
6. EGM 6533 Advanced Strength of Materials *
7. EGM 6736 Theory of Elastic Stability
8. EML 6043 Computer Simulation of Dynamical Systems
9. EML 6223 Mechanical Vibrations *
10. EML 6228 Applied Structural Reliability and Random Vibrations *
11. EML 6229 Advanced Random Vibrations

12. EML 6271 Advanced Engineering Dynamics *
13. EML 6319 Micro Electromechanical Systems
14. EML 6529 Methods of Analysis in Mechanical Engineering
15. EML 6532 Computer-Aided Design *
16. EML 6835 Advanced Robotics and Automation
17. EOC 6155 Finite Element Methods

Thermal/Fluids:
1. EML 6154 Conduction Heat Transfer
2. EML 6155 Convection Heat Transfer
3. EML 6402 Turbomachinery *
4. EML 6417C Solar Energy Engineering
5. EML 6709 Intermediate Fluid Mechanics *
6. EML 6715 Fluid Dynamics I
7. EML 6716 Fluid Dynamics II
8. EML 6726 Computational Gas Dynamics
9. EML 6735C Experimental Fluid Mechanics and Heat Transfer
10. EOC 6190 Turbulent Flow