

Sample Syllabus

ME 355 – DYNAMIC SYSTEMS LABORATORY

www.mne.psu.edu/chang/me355

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Office Hours:	By appointment		By appointment

TEXT: ME 355 Lab instruction sheets

PREREQUISITES: ME 345, ME370, and ME450 (concurrent).

COURSE OBJECTIVES:

The main objective of the course is to develop and enjoy some hand-on experience and working knowledge of basic dynamic and control systems. Specifically,

1. *Identify the actuators, sensors, plants, and controllers of physical control systems.*
2. *Calibrate sensors.*
3. *Measure steady state, step, and frequency response of various systems.*
4. *Compare theory and experiment.*
5. *Design simple controllers for various systems.*
6. *Implement controllers and test control performance.*
7. *Enjoy the hands-on learning.*

GRADING: Grades are based on attendance, active participation and group lab reports. Each lab report is due before the start of a new lab assignment. **No late report will be accepted.**

The report must be type-written into a pdf file and submitted as an email attachment to the TA (yxf118@psu.edu) with a title such as “me355 L2TuMG4”, where L2=Lab session 2, TuM=Tuesday Morning section, and G4=Group 4.

Lab Sessions	No. of weeks to complete
1. Torsion System	1 or 2
2. Control Moment Gyroscope	1 or 2
3. Magnetic Levitation System	1
4. Industrial Servo System	1 or 2
5. Rectilinear System	2
6. Inverted Pendulum Experiment	1 or 2
7. Servo Robot System	1