Course Syllabus	**EECS 4260 – Control Systems Design**
Credits/Contact Hours	3 credit hours & three 50-minute lecture contact hours per week.
Instructor's Name	Dr. Richard G. Molyet
Textbook	R.C. Dorf and R.H. Bishop, "Modern Control Systems," Pearson Prentice Hall, 12th edition, 2011.
Course Information	A general study of computer-aided design of control systems. Topics include: stability, compensation, pole placement, nonlinear systems and digital systems. Prerequisite: EECS 4200 Elective for EE majors
Specific Goals-Student Learning Objectives	The student will be able to

The student will be able to
1. determine the stability of control systems using the Nyquist criterion.
2. determine frequency response characteristics and stability of closed loop systems using the Nichols chart.
3. design first and second order compensators using the Bode method.
4. design first and second order compensators using the Root Locus method.
5. determine the controllability and observability of control systems.
6. design feedback controllers in the time domain using pole placement methods.
7. design a state observer for a feedback control system.
8. design an optimal control system using the Lyapunov equation.
9. analyze and design digital control systems.
10. understand the control of nonlinear systems.
11. use MATLAB and Simulink to design open and closed loop control systems

Topics
1. Frequency response method
2. Compensation
3. Controllability and observability
4. Pole placement using state feedback
5. Design of observers
6. Optimal control systems
7. Digital control systems
8. Nonlinear control systems