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Course web site: http://www.pages.drexel.edu/~changbc/course_dspcntrl.htm
Drexel Learn Bb MEM380-006/MEM800-005 Web Page

**Tentative Catalog Data:**
/MEM800-005/MEM380-006: Control Application of DSP (Prerequisite: MEM255 or Graduate standing) Code Composer Studio; Microprocessor C programming; Pulse width modulation (PWM); Quadrature encoder pulse (QEP) Circuit, DSP system control and interrupts, Digital data acquisition, processing, and control; Time and frequency domain analysis of discrete closed-loop systems; Design of PID digital controllers; Design of digital controllers in state space; Microcomputer controller implementation; Sensors and actuators; Implementation of digital controllers in microprocessors. (3-0-3)

**Text:** B.C. Chang, Class notes in Control Application of DSP

**References:**
1. Texas Instruments, Data sheets, manuals, and technical reports related to TMS320C28xxx.

**Topics:**
- Code Composer Studio Version 5
- DSP microprocessor C programming
- F28335 DSK board and Arduino microcontroller
- Timers, PWM and QEP
- DSP system control and interrupts
- Discrete-time closed-loop system models
- Time response characteristics and digital simulations
- Frequency-domain analysis and stability analysis
- Digital controller design
- Closed loop digital controller design
- DSP microcomputer implementation of digital controllers
- Position and speed control of DC motors

Lab Assignments 60-70%
Projects 40-30%

All the reports need to be submitted electronically; no hard copy will be accepted.