

## 6.3100: Dynamic System Modeling and Control Design

### Retrospective

Please give us feedback on 6.3100/2.

Spring 2024 subject evaluations are open until Friday, May 17th at 9 am.

→ <http://registrar.mit.edu/subjectevaluation>

Provide specific feedback on 6.3100:

→ “Survey” tab on 6.3100 website

*May 13, 2024*

# What Comes Next?

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## In EECS

**6.3000: Signal Processing**

Fourier methods to analyze and process signals

**6.3010: Signals, Systems, and Inference**

time- and transform-domain methods for estimation problems

**6.7100[J]: Dynamic Systems and Control**

in-depth follow-on to topics in 6.3100

**6.7110: Multivariable Control Systems**

in-depth consideration of multi-input multi-output systems

**6.7120: Modeling, Computing and Control for Decarbonized Systems**

application of dynamics and control in electrical energy systems

**6.8200: Sensorimotor Learning**

application of learning methods for control

**6.8210: Underactuated Robotics**

nonlinear dynamics and control of robotic manipulators

# What Comes Next?

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## In MechE

### **2.004: Dynamics and Control**

dynamic system modeling and control (similar to 6.3100)

### **2.14: Analysis and Design of Feedback Control Systems**

fundamentals of feedback control using linear transfer function models

### **2.151: Advanced System Dynamics and Control**

analytical descriptions of state-determined dynamic physical systems

### **2.152: Nonlinear Control**

nonlinear stability theory, nonlinear observers, emphasizes applications

### **2.153: Adaptive Control and Connections to Machine Learning**

parameter estimation, recursive algorithms, stability properties, convergence

### **2.171: Analysis and Design of Digital Control Systems**

This course by Dave Trumper is a good follow-on to 6.3100:

A comprehensive introduction to digital control system design, reinforced with hands-on laboratory experiences. Major topics include discrete-time system theory and analytical tools; design of digital control systems via approximation from continuous time; direct discrete-time design; loop-shaping design for performance and robustness; state-space design; observers and state-feedback; quantization and other nonlinear effects; implementation issues. Laboratory experiences and design projects connect theory with practice.

# What Comes Next?

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## In Aero/Astro

**16.002: Unified Engineering: Signals and Systems**

fundamental principles and methods of signals and systems

**16.06: Principles of Automatic Control**

introduction to the design of feedback control systems

**16.30: Feedback Control Systems**

state-space representation of dynamic systems

**16.32: Principles of Optimal Control and Estimation**

dynamic programming, variational calculus, numerical algorithms

**16.338: Dynamic Systems and Control**

multi-input-output systems in control

## In ChemE

**10.352: Modern Control Design**

state estimation and controller design

**10.353: Model Predictive Control**

multivariable control of dynamical systems with constraints

## Please Tell Us How To Improve 6.310

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We want to present course material in a way that encourages a deep **technical understanding** while also being **fun and engaging**.

We need your help and your feedback in order to make that happen.

Please use the next **15 minutes** to fill out the Registrar's Subject Evaluation and the 6.3100 End-of-Semester Survey.

- Fill out the MIT Subject Evaluation:

<http://registrar.mit.edu/subjectevaluation>

- Provide specific feedback on 6.3100:

go to "Survey" tab on 6.3100 website

**Remember to **Submit** your responses**

After you have finished, we will have an open discussion.