Course Syllabus

ELCT 837 – Modern Control Theory

<table>
<thead>
<tr>
<th>Course Coordinator:</th>
<th>Dr. Enrico Santi</th>
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<tbody>
<tr>
<td>Catalog Description:</td>
<td>The analysis and synthesis of linear, non-linear, and discrete control systems employing the state space approach.</td>
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<td>Credit Hours</td>
<td>3</td>
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<td>Prerequisite(s) by course</td>
<td>ELCT 331 or any introductory feedback control class</td>
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<tr>
<td>Prerequisite by topics</td>
<td>Control Systems</td>
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Course Outcomes:
Students who successfully complete the course will be able to:

- Describe continuous-time systems in the discrete-time domain
- Design digital controller using a state space approach
- Use CAD tools to support the control design
- Design observers to support the control in a state space approach

Course Topics:
- State space description of systems
- Sampling of systems
- Stability, robustness
- Controllability and Observability, simple feedback-loops
- State space design
- Pole placement
- Process oriented models
- Translation of analog design
- Implementation issues
- Identification
- CAD tool for control design

General Course Policies

Academic Integrity
Unless otherwise stated, assignments and examination work are expected to be the sole effort of the student submitting the work. Students are expected to follow the University of South Carolina Honor Code and they should expect that...
every instance of a suspected violation will be reported. Students found responsible for violations of the Code will be subject to academic penalties under the Code in addition to whatever disciplinary sanctions are applied.

Accommodating Disabilities
Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, contact the Office of Student Disability Services: 777-6142, TDD 777-6744, email sasds@mailbox.sc.edu, or stop by LeConte College Room 112A. All accommodations must be approved through the Office of Student Disability Services.

Diversity
When scheduling exams, I have attempted to avoid conflicts with major religious holidays. If, however, I have inadvertently scheduled an exam or major deadline that creates a conflict with your religious observances, please let me know as soon as possible so that we can make other arrangements.

Deviations
Minor deviations from the syllabus are a normal part of any adaptive teaching and learning process.