

RCET2251: Systems Analog and Digital Theory Syllabus

Asst. Professor, Timothy Leishman

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Office Hours: M-F, 3-4 pm
Office: T&T 323

Class Hours: M,T,Th,F 1:00-3:00 pm
Class Room: T&T 333

Course Description

Analog circuit analysis applied to amplifiers, power supplies, op-amps, and discrete switching circuits, with an emphasis on frequency limitations of discrete components and circuitry. Introduction to actuators, motors, and transducer control circuitry.

Prerequisites/Corequisites

- *PREREQ*: RCET 1154 Analog & Digital Control Devices Theory
- *COREQ*: RCET 2253 Systems Analog & Digital Lab

Recommended Materials

- First & Semester Lab Book/Notes
- *Electronic Devices*, Thomas L Floyd

Course Objectives

Successful students will demonstrate an ability to solve narrowly defined technical problems using applied mathematics and scientific/engineering/technology principles. Additionally, successful students will apply methods, processes, and operations, particularly those necessary for the understanding of electrical phenomena and circuit analysis in support of COREQ RCET 2253.

Course Outline

- ☐ *Review of first year content, throughout semester*
- ☐ *Linear Regulated Power Supplies, Weeks 1-2*
- ☐ *RC Circuits, Weeks 3-4*
- ☐ *BJT Amplifiers & Frequency Response, Weeks 5-6*
- ☐ *Differential & Push-Pull Amplifiers, Weeks 7-8*
- ☐ *Op Amps - Integration, Differentiation, & Active Filtering, Weeks 9-10*
- ☐ *Switching Transistors & Multivibrators, Week 11-12*
- ☐ *Linear Regulators & SMPS, Week 13*
- ☐ *Motors, Week 14*
- ☐ *Review, Weeks 15*
- ☐ *Final Test, Week 16*

Course Structure

Homework will be assigned and submitted electronically via Moodle. Late homework will not be accepted without 24-hour prior approval from the instructor. Students may be randomly selected to demonstrate their understanding and process of solving course problems during class. Tests will be announced and scheduled in Moodle.

Grading

55%	Tests
20%	Homework/Class Participation
<u>25%</u>	Final
100%	Total

Disability Services

The RCET program is committed to providing an accessible learning environment for students with documented disabilities. If there are aspects of the instruction or design of this course that result in disability-related barriers to your participation, please contact Disability Services to engage in a confidential conversation about the process for requesting accommodations. Students are encouraged to register with Disability Services as soon as they begin this course or in the timeliest manner possible as accommodations are not provided retroactively. More information can be found online at isu.edu/disabilityservices, or by contacting Disabilities Services at:

Disability Services - Main Office
Rendezvous Complex, Room 125
921 South 8th Avenue
Pocatello Id. 83209

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