**RCET 0251 – Sys Analog and Digital Theory**

6 Cr M, T, Th, F 1:00-2:50 PM T&T Room 333

**Instructor** Tim Leishman **E-Mail** [leistimo@isu.edu](mailto:leistimo@isu.edu)

**Office** T&T Room 323 **Phone** 208‐282‐2886

**Office Hours** M – F, 3:00pm – 4:00pm

**Books: (Second Semester Book)** Electronic Devices, 9th Edition Thomas L. Floyd

**Other supplies:** Laptop, Notebook for theory notes

**Attendance**

Department attendance policy will be enforced, refer to student handbook for more information.

**Course Description** RCET Program Required Course

*Analog circuit analysis applied to amplifiers, power supplies, op-amps, and discrete switching circuits, with an emphasis on frequency limitations of discreet components and circuitry. Introduction to actuator, motor, and transducer control circuitry.* COREQ: [RCET 0253](http://coursecat.isu.edu/search/?P=RCET%200253).

**Goals**

At the completion of this course, students will be able to demonstrate:

* An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge
* An ability to identify, analyze, and solve narrowly defined engineering technology problems
* The ability to calculate and predict the outcome of a binary, octal, or hexadecimal mathematical function
* The ability to accurately create schematics, connection diagrams, block diagrams, and timing diagrams for a given circuit or system
* A commitment to quality, timeliness, and continuous improvement

**Major Topics**

1. Review first-year content
2. Pulse Fundamentals
3. Time Constants and Phase Shift
4. Switching Diode Characteristics
5. Transistors, amplifiers, and frequency response
6. Push‐Pull Amplifiers
7. Power Amplifiers
8. Differential Amplifiers
9. Operational Amplifiers and Filters
10. Switching Transistors
11. JFET and MOSFET Transistors
12. Multivibrators and Timing Circuits
13. Linear and SMPS Fundamentals
14. Motor and Motor Control
15. Sensors
16. Digital Circuits
17. D/A and A/D Conversion

**Grading**

Tests 55%

(Homework/Quizzes) & Review 20% (10% + 10%)

Final Test 25%

Total 100%

Homework due dates/times are listed on Moodle, and will not be accepted late without 24-hour prior approval from the instructor. Missed quizzes and tests will not be made up, regardless of reason.

*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*](https://www.isu.edu/disabilityservices/)*, or by contacting Disabilities Services at:*

Disability Services - Main Office

Rendezvous Complex, Room 125

921 South 8th Avenue

Pocatello, ID 83209-8121

Stop 8121

Phone: 208-282-3599 Fax: 208-282-4617

VP for ASL: 208-417-0620 Email: disabilityservices@health.isu.edu