RCET 2251 – System Analog and Digital Theory Syllabus

6 Cr M, T, TH, F. 1:00 pm – 2:50 pm T&T Room 333

Asst. Professor: Timothy Leishman, timothyleishman@isu.edu **Office:** T&T Room 323
Office Hours: M-F 3:00pm - 4:00pm. An alternative meeting time may be scheduled with the instructor.

Course Description RCET Program Required Course
Analog circuit analysis applied to amplifiers, power supplies, operational amplifiers, and discrete switching circuits, with an emphasis on frequency limitations of discreet components and circuitry. Introduction to actuators, motors, and transducer control circuitry.
PREREQ: RCET 1154, COREQ: RCET 2253

Books: RCET 2251 course content will be provide by the instructor via Moodle. Personal laboratory notebooks, lecture notes, and books from previous RCET courses are strongly recommended for use as reference material.

Other supplies: A TI-30 calculator or equivalent. Programmable or solve function calculators are strictly prohibited on quizzes or tests.

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

Goal: Successful students will demonstrate an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems related to the discipline of electronic analog and digital technology in support of COREQ RCET 2253.

Student Learning Outcomes Addressed:

1. *Review of first year content,* throughout semester
2. *Linear Regulated Power Supplies,* Weeks 1-2
3. *RC Circuits,* Weeks 3-4
4. *BJT Amplifiers & Frequency Response,* Weeks 5-6
5. *Differential & Push-Pull Amplifiers,* Weeks 7-8
6. *Operational Amplifiers – Integration, Differentiation, Filtering,* Weeks 9-10
7. *Switching Transistors & Multivibrators,* Weeks 11-12
8. *Linear Regulators & Switch Mode Power Supplies,* Week 13
9. *Motors – DC, Steppers, Servos, Solenoids,* Week 14
10. *Semester Review,* Week 15
11. *Final Test,* Week 16

Grading

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

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. The course schedule and or specific homework assignments may be modified by the instructor to enhance student learning objectives or to accommodate for program activities.

Material from prerequisite courses will be investigated throughout this course. Students are required to demonstrate adequate knowledge, and the ability to apply prerequisite information to the topics covered in the class. It is the student's responsibility to be prepared with the information covered in prerequisite courses. Each unit test may contain random information from prerequisite courses to verify the student's fundamental electronics knowledge.

Disabilities 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, Stop 8121
Pocatello, ID 83209-8121

Phone: 208-282-3599
Fax: 208-282-4617
VP for ASL: 208-417-0620
Email: disabilityservices@health.isu.edu