RCET 2253 – System Analog and Digital Laboratory Syllabus

5 Cr Monday through Friday 8 am – 10:50 am T&T Room 336

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
Students will design, construct, test, and troubleshoot electronic circuits using proper test equipment. Experiments and circuit designs will align with subjects taught in RCET 2251 Systems Analog and Digital Theory and RCET 2271 Introduction to Lab Simulation Software.
PREREQ: RCET 1156, COREQ: RCET 2251

Books: RCET 2253 Laboratory Instructions will be provided by the instructor via Moodle. Personal laboratory notebooks from previous RCET lab courses are strongly recommended for use as reference material. Equipment manuals will be provided as needed.

Other supplies: Laptop computer, bound grid paper notebook with numbered pages, safety glasses, and tools as required in first semester. 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 apply knowledge, techniques, and skills from mathematics, science, engineering, and technology to solve well-defined engineering problems in electronic analog and digital technology, supporting the corequisite course RCET 2251.

Student Learning Outcomes Addressed:

1. Adherence to lab safety protocols.
2. Ability to apply knowledge, techniques, skills, and tools from mathematics, science, engineering, and technology to solve well-defined engineering problems relevant to the discipline.
3. Ability to analyze and predict the behavior of analog and digital circuits.
4. Proficiency in creating accurate schematics and block diagrams.
5. Ability to document predicted waveforms and timing diagrams.
6. Competence in proper circuit construction.
7. Proficiency in performing circuit measurements and using test equipment correctly.
8. Ability to accurately document measured values.
9. Capability to explain circuit operation effectively.
10. Skill in troubleshooting and resolving circuit issues.
11. Demonstration of commitment to quality, time management, and continuous improvement.

Grading

Lab Checkoffs and Reports	60%
Power Supply Project	30%
Professionalism	10%
Total	100%

Course Structure

All laboratory experiments must be successfully completed in the assigned order. Labs will be assigned and submitted electronically via Moodle. Late Labs will not be accepted without 24-hour prior approval from the instructor, if approved late labs will be subject to a 10% per day penalty. Safety violations and excessive parts damage will, at a minimum, result in a loss of professionalism points. Egregious safety violations and or egregious parts damage may result in program dismissal. The Lab schedule and or specific Laboratory experiments 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