

ESE 211 Electronic Laboratory A

Spring 2018

The goal of the course is to develop skills of theoretical and experimental circuit analysis and circuit design.

Credits: 2

Prerequisites: MAT 127 or 132 or 142; PHY 126 or 132 or 142; ESE 271

Instructor: *Sergey Suchalkin Room 253 Light Eng., sergey.suchalkin@stonybrook.edu*

Office hours:

Tuesdays: 10a.m. to 12p.m.

Thursdays: 10a.m. to 12p.m.

Laboratory experiments (Rm. 283, except Labs 1 and 6):

Lab 1. Analysis of DC and AC circuits using PSPICE (Rm. 281, anytime during the CADLAB open hours)

Lab 2. Measurement of DC voltages and currents

Lab 3. Measurement of AC signals

Lab 4. Transient analysis RC and LR circuits

Lab 5. Frequency response of RC and LR circuits

Lab 6. Frequency response of high-order circuits (Rm 281, anytime during the CADLAB open hours)

Lab 7. Transformers

Lab 8. Semiconductor diodes

Lab 9. Diodes in rectifier circuits

Lab 10. Bipolar Junction Transistor

Lab 11. BJT Common Emitter Amplifier

Lab 12. MOSFET differential stage

Lab 13. Operational Amplifiers

Text Books:

D. Johnson et al., “Basic Electronic Circuit Analysis” (**ESE211** weeks 1-7).

Chapters covered: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, and 15

D. Neamen, “Electronic Circuit Analysis and Design” (**ESE211** weeks 8-15).

Chapters (paragraphs) covered by:

1 (1.1-1.5), 2 (2.1-2.2), 3 (3.1-3.6), 4 (4.1-4.5), (5.1-5.2), 7 (7.1-7.3),

9 (9.1-9.5), 11 (11.1-11.2, 11.6-11.8), 12 (12.1-12.10), 14 (14.1 -14.5)

Alternate/Additional Text Books:

J.A. Svoboda, "PSpice for linear circuits".

A.S. Sedra, K.C. Smith, "Microelectronic circuits", *Part 1*.

Grading:

Laboratory works - 50%; Test#1 -15%; Test #2 -15%; Final-20%.

Class/laboratory Schedule:

Lectures: 53 min/1 day per week. The lectures provide theoretical material necessary for the laboratory experiments.

Laboratory experiments: You will select a laboratory partner at the first meeting of your laboratory section. Groups of more than two students are not permitted. You must be registered for one of the following **laboratory sections:**

Lab. Sec. 1 WE 10:00AM – 1:00PM Lt. Eng. Rm283

Lab. Sec. 2 WE 7:00PM – 10:00PM Lt. Eng. Rm283

Lab. Sec. 2 TH 2:00PM – 5:00PM Lt. Eng. Rm283

- Laboratory section changes will be permitted during the first two weeks of class, if space is available in the section to which you wish to change. To change sections you must talk to Mrs. Huggins in Room 267 of the Light Engineering Building.
- Laboratory assignments are generally provided one week before they must be performed in the laboratory. Your completed laboratory report must be submitted to your TA by the end of your laboratory session. It will not be possible for you to make up missed laboratory work.
- Any questions regarding the grading of exams or laboratory work must be resolved within one week after the work is graded.

Disability Support Services (DSS) Statement:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website:

<http://www.stonybrook.edu/ehs/fire/disabilities>]

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website:

http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management Statement:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.