Course Title : Circuits and Electronics
Course code : CSE 231
Level: Undergrad
Year/ Semester: 2/4 , Fall
Instructor: Erkan ZERGEROĞLU, Prof., Computer Engineering Depatment,Room 202
e.zerger@gtu.edu.tr

This main aim of the course is to introduce the basic knowledge and understanding of electrical circuits, and components used in electrical circuits to computer engineering undergrad students. At the end of the semester, students are expected to obtain the basic skills required to analyze and design introductory level electrical circuits.

Prerequest : MATH 101, MATH102 (Basic knowledge of linear algebra and differential equations)

Course Content:

- Circuit variables, Units and dimensions: Voltage, Current, Power and Energy
- Basic Circuit Elements : Sources and resistors, Kirchhoff's current and voltage law
- Node and Mesh analysis, current and voltage division circuits, Basic source transformation
- Thevenin and Norton theorems, Linearity and Superposition
- Inductors and Capacitors
- First order RC circuits
- RLC circuits
- Semi conductor devices and ideal diodes
- Transistors (BJT and FET)
- Operational amplifiers

References:

1. The essentials of electric circuits / M. Fogiel. Fogiel, ISBN. 0-87891-585-0
2. Introduction to PSpice. Supplement to Electric circuits, 8th edition / James W. Nilsson, Susan A. Riedel. 2008 ISBN. 975786045X
3. Electric circuits fundamentals / Thomas L. Floyd. 1998 ISBN. 013835166X
4. Introduction to electric circuits / Richard C. Dorf. 2001 ISBN.0471386898
5. Principles of electric circuits / Thomas L. Floyd. 2000 ISBN.0130959979
6. Electric circuits / James W. Nilsson, Susan A. Riedel. 2001 ISBN.0130321206
7. Fundamentals of electric circuits / Charles K. Alexander, Matthew N.O. Sadiku. 2000 ISBN.0071160426

Grading: (tentative) Quizes %10, Homework %10, Midterm %30 Final Exam %50