

Course number: 04025240

Course name: Communication Electronics

Prerequisites by course: Electronics II (04023140) and Analog Communications (04024150)

Prerequisites by topic: Students are required to have solid background in electronic circuits. This is also besides a good knowledge communication systems and modulation techniques.

Credit hours: 3 credit hours

Contact hours: 3 contact hours

Textbook: [Electronics Communications Techniques], [Paul H. Young], [Prentice Hall, latest edition]

References:

Microelectronic circuits, A. Sedra, Oxford press, Latest Edition.

Electronic devices, Floyd, Pearson, Latest Edition.

Course website:

Schedule and duration: 15 Weeks, 45 Lectures, 50 minutes each (including exams)

Minimum student material: Textbook, lecture handouts, and scientific calculator

Minimum college facilities: Classroom with whiteboard and projection display facility. Library.

Course objectives:

1.	Fully characterize class A, class B, class AB and class C power amplifiers.
2.	Fully characterize Oscillator circuits and decide their applications.
3.	Apply basic circuit techniques to design Mixers, Modulator and Demodulator circuits.

Course outcomes and relation to ABET student outcomes: (matrix)

After completing the course successfully students are expected to be able to

1. Fully characterize class A, class B, class AB and class C power amplifiers. [1]
2. Fully characterize Oscillator circuits and decide their applications. [1]
3. Apply basic circuit techniques to design Mixers, Modulator and Demodulator circuits. [1, 7]

Course topics:

Power Amplifiers

Oscillators

Filters

Mixers

Modulators and Demodulators

Computer usage: Simulation part of this course is covered within tutorial

Attendance: Attendance is mandatory. Students are required to attend all lectures, attendance rules and regulations will be strictly applied.

Assessments: Quizzes and exams

Grading policy:

Midterm	30%
Participation and Quizzes	20%
Final (comprehensive)	50%

Instructors: Dr. Osama Oglah Fares

Class time and location: Sun, Tue, Thu 12:00 – 01:00, Programming Lab

Student Outcomes (SOs)

- 1 An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- 2 An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- 3 An ability to communicate effectively with a range of audiences
- 4 An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- 5 An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- 6 An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- 7 An ability to acquire and apply new knowledge as needed, using appropriate learning strategies