

**ELEI 220**  
**ELECTRONIC CIRCUITS**  
**3 Semester Hours**

**The Community College of Baltimore County**

**Description**

Electronic Circuits

Studies solid state devices emphasizing complete circuits and systems; discusses topics such as limiters, clampers, filters, transistor biasing circuits, small and large signal amplifiers, oscillators, voltage multipliers, regulated power supplies, feedback, and operational amplifier circuits with emphasis on troubleshooting of these circuits. One two hour lecture and one two hour lab a week one semester.

Prerequisite: MATH 108; ELEN 111

**Overall Course Objectives.**

Upon completion of this course the student will be able to:

Demonstrate in written and oral presentations an understanding of electronic circuits including amplifiers, voltage regulators, and oscillators. Demonstrate a working knowledge of electronic circuits through a laboratory setting; demonstrating theory as it is applied to work situations.

**Major Topics**

Transistor biasing circuits, base bias, emitter-feedback bias, collector-feedback bias, voltage divider bias, emitter bias. Common Emitter Amplifier, Common Collector Amplifier, Common Base Amplifier. Power Amplifiers, class A, class B, class C, and other classes of amplifiers. JFET, gate bias, self bias, voltage divider bias, source bias, JFET Amplifier Circuits, Common source, Common drain, Common gate, JFET applications. MOSFET, biasing the MOSFET, MOSFET applications, frequency effects, Lead-Lag networks, High Frequency FET analysis, High Frequency bipolar analysis. OP-AMP Theory, negative feedback, Inverting and non-inverting amplifiers, Linear OP-AMP circuits, Nonlinear OP-AMP circuits. Regulated Power Supplies, Oscillators.

**Course Requirements**

The Instructor will administer Tests (60%), Laboratory work (30%), Assignments (10%).

**Other Course Information**

**Additional Information about this course or any other Industrial electricity/electronics course can be obtained by contacting the IEE/Telecommunications Program Director.**