

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

X Transfer Course X A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: ECHT 160 Electronics for Everyone

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: None

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Overview course designed and taught so anyone can understand the basic concepts and applications of electronics. Topics covered are direct and alternating current, Ohm's Law, magnetism, transformers, capacitance, inductance, turned circuits, diodes, transistors, amplifiers, oscillators, power supplies and computers.

SPECIFIC COURSE OBJECTIVES:

Upon completing this course of study, the successful students will be able to:

1. Discuss basic and intermediate electronics theory and techniques
2. Trace through basic electronic circuits using only a schematic diagram as a guide.
3. Describe how a multimeter and oscilloscope are used to measure electronic parameters.
4. Draw and perform calculations on basic and intermediate electronic circuits using resistors, capacitors, inductors diodes, transistors, and integrated circuits.
5. Explain the operation of power supplies, amplifiers, and oscillators.
6. Analyze digital electronic circuits.
7. Describe computer concepts and principles.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Science of Electricity and Electronics
- II. Conductors, Insulators, and Semiconductors
- III. Sources of Electricity
- IV. Basic Series, Parallel and Combination Circuits
- V. Magnetism and Generators
- VI. Instruments and Measurements
- VII. Alternating Current
- VIII. Capacitors and Inductors
- IX. Tuned Circuits
- X. Semiconductors Diodes and Transistors
- XI. Integrated Circuits
- XII. Power Supplies and Amplifiers
- XIII. Oscillators
- XIV. Radio Wave Transmission and Receivers
- XV. Digital Circuits and Computers

REQUIRED READING:

Petruzella, Frank D. Essentials in Electronics. Columbus, OH: Glencoe McGraw-Hill Publishing Co., 2001

SUGGESTED READING:

Floyd, Thomas L. Electronics Fundamentals; Circuits, Devices, and Applications. 5th ed. Columbus, OH: Merrill Publishing Company, 1998

Boylestad, Robert L. Introduction to Circuit Analysis. 5th ed. Columbus OH: Merrill Publishing Co., 1991.

Malvino, Albert P. Electronic Principles. 6th ed. Westerville, OH: McGraw-Hill Publishing Co., 1999.

Floyd, Thomas L. Electronic Principles. 4th ed. Columbus, OH: Merrill Publishing Co., 1992.

Dugger, William E., and Howard H. Gerrish. Electricity and Electronics. South Holland, IL: Goodheart/Wilcox, 1989.

Berlin, Howard M. The Illustrated Electronics Dictionary. Columbus, OH: Merrill Publishing Co., 1986

Selected hand-outs from the instructor.

REQUIRED WRITING:

1. At least one essay (design/analysis explanations requiring critical thinking) is required in evaluation testing of approximately one to three paragraphs.
2. Problem solving exercises used in evaluation testing of approximately one to three paragraphs in length.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

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Reading assignments are from the text and handouts. Approximately 870 pages in the textbook are required readings for the course.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
 laboratory
 lecture-laboratory combination
 directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
 Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
 Two-Way Video Conferencing (Two-way interactive video and audio)
 One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
 Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

Quizzes:	25%	A=90-100%
Homework:	25%	B=80-89%
Midterm:	25%	C=70-79%
Final:	25%	D=60-69%

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes ____ No X Number of times course may be taken for credit: 4

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: George Hershman ext. 2563

SIGNATURES ON FILE