COURSE SYLLABUS

COURSE: ELN 229  INDUSTRIAL ELECTRONICS

HOURS:  Lecture: 3  Lab/Shop: 3  Work Exp/Clinical: 0  Credits: 4

COURSE DESCRIPTION:

This course covers semiconductor devices used in industrial applications. Topics include the basic theory, application, and operating characteristics of semiconductor devices. Upon completion, students should be able to install and/or troubleshoot these devices for proper operation in an industrial electronic circuit.

PREREQUISITE(S):  ELC 112 or ELC 131

COREQUISITE(S):  NONE

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

ISBN # 97811111127800

STUDENT LEARNING OUTCOMES:

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

1. Discuss the differences between the atomic structure of conductors, insulators and semiconductors.
2. Explain uses of resistors in Semiconductor Circuits.
3. Discuss Power Rating and Heat Sinking Components.
4. Select and properly use electronic test equipment.
5. Discuss the operation of a junction diode.
6. Discuss the operation of a Light Emitting Diode (LED).
7. Discuss the operation of single-phase rectifiers.
8. Discuss the operation of a three-phase rectifier.
9. Discuss the operation of filters in an electronic circuit.
10. Discuss the operation of special diodes.
11. Discuss the operation of the Transistor.
12. Discuss the operation of Thyristors.
13. Discuss the impact that electronics is having in industrial applications around the world.

EXPLANATION OF SYLLABUS:

The Student Learning Outcomes listed in this syllabus are those required actions that a student who successfully completes the course must be able to perform or exhibit. The educational experience, however, is a two-way, interactive process involving both the student and his/her instructor. The student must play an active role in the learning process in order to
be successful. Each Instructor will provide an Instructor’s Course Requirements document at
the first class meeting explaining how he/she measures each of the Student Learning
Outcomes listed in the syllabus. A student who is unable to accomplish the outcomes will not
receive a passing grade in the course.

The information in this RCC Syllabus may not be accurate beyond the current semester.
Textbooks and other course materials are subject to change. Students should verify the
textbooks at the first class meeting with their instructor prior to purchasing.

RCC ATTENDANCE POLICY:

Regular attendance is considered essential to realize course outcomes. Students are
expected to attend all scheduled meetings of classes for which they register. Rules on
tardiness and leaving class early are addressed in each Instructor’s Course Requirements
document.

No matter the basis for absence, students are held accountable for academic activities, and
faculty may require special work or tests to make up for missed classes.

When courses are delivered through online instruction (DL or Distance Learning) or through a
combination of traditional classroom and online instruction (hybrid), class participation is no
less important, though its measurement may be somewhat different.

The Nursing Department’s requirement related to attendance exceeds the college policy.
Nursing students are required to attend 90% of classes, labs, and clinicals. At the discretion
of the instructor, a written assignment or makeup clinical may be given for hours missed
determined to be unavoidable.

RCC GRADING SYSTEM:

Richmond Community College employs a system of letter grades and corresponding quality
points per grade to evaluate a student’s performance in meeting the stated goals and
objectives for each course. **

SECURITY AND SAFETY PROCEDURES:

RCC’s upgraded security procedures require all doors to be locked at class start-time.

All students, faculty, staff, and visitors must wear visible identification (ID) badges.
Identification badges should be worn on the front of clothing. RCC employees can stop,
restrict, and remove from any school-related activity or function anyone who does not display
an ID badge.

STUDENTS WITH DISABILITIES:

Richmond Community College complies with the Americans with Disabilities Act and Section
504 of the Rehabilitation Act, which require that no qualified student with a disability be
excluded from participation in or be denied the benefits of any services, programs or activities
on the basis of his or her disability. If accommodations in the classroom and/or in
extracurricular activities are required, the student is encouraged to contact the Disability
Services Counselor in Student Services prior to the start of the semester; however, a student may request accommodations at any time. Reasonable accommodations may take up to three (3) weeks to implement. Richmond Community College is committed to providing support and services to students with disabilities to help them obtain a quality education and to reach their goals. Assistance is provided, as necessary, and is intended to help students participate in and benefit from the programs and activities enjoyed by all students.

WITHDRAWAL:

In order to officially drop or withdraw from one or more courses without academic penalty, students must complete the “Change in Registration Status” form and submit it to the Registrar’s Office before the 75% Point of the Term. Students may obtain the “Change in Registration Status” form from Student Services or from an instructor. Students are responsible for obtaining the course instructor(s) signature(s) and returning the “Change in Registration Status” form to the Registrar.

Students who withdraw before the 75% Point of the Term will receive a grade of “W.” Students who withdraw after the 75 % Point of the Term will receive a grade of “WF” or “WP.” The Registrar will inform the students by mail of their withdrawal and the right to appeal.

WITHDRAWAL AND FINANCIAL AID:
The Return of Title IV Funds policy affects any student who receives Federal Financial Aid (for example, Pell Grants) and who withdraws from all classes. Under this policy, any student who withdraws or is withdrawn by the instructor completely from classes on or before the 60 percent point of the term will be required to repay all or a portion of his/her Federal Financial Aid.

**Please refer to the online version of RCC’s Catalog & Student Handbook for current academic and general policies.