Richmond COMMUNITY COLLEGE

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www.richmondcc.edu

INSTRUCTOR'S COURSE REQUIREMENTS

COURSE: **ELN 229** **Industrial Electronics**

SEMESTER & YEAR: Fall 2015

INSTRUCTOR'S NAME	SECTION #	CLASS MEETING TIME	OFFICE HOURS AND OTHER CONTACT INFORMATION
Billie Adeimy	01	T TH 8:10-9:25 am F 8:10-11:00	Office Hours: M W 4:30-6:00 pm T TH 9:30-10:00 am F 11:05 am-12:05 pm Office: Forte 327 Office Phone: 410-1901 Email Address: bladeimy@richmondcc.edu

METHODS OF INSTRUCTION AND EVALUATION:

STUDENT LEARNING OUTCOMES	METHODS OF INSTRUCTION	SUCCESSFUL PERFORMANCE/BEHAVIORAL INDICATORS	METHODS OF EVALUATION
1. Discuss the differences between the atomic structure of conductors, insulators, and semiconductors.	▪ Lecture ▪ Lab	▪ Give an explanation of how P- and N-type materials are made. ▪ Describe a lattice structure ▪ Describe conduction through conductors, Insulators and semiconductors.	▪ Exam ▪ Lab
2. Explain uses of Resistors in Semiconductor circuits.	▪ Lecture	• Describe the different types of Resistors. • Explain the power rating of Resistors. • Be able to Identify resistors by their color code. • Be able to draw and identify the electrical symbols used for Resistors.	▪ Exam

STUDENT LEARNING OUTCOMES	METHODS OF INSTRUCTION	SUCCESSFUL PERFORMANCE/BEHAVIORAL INDICATORS	METHODS OF EVALUATION
3. Discuss Power Rating and Heat Sinking Components	▪ Lecture ▪ Lab	▪ Discuss why heat sinks are necessary in electronic circuits. ▪ Discuss the use of thermal compound. ▪ Explain how thermal compound aids in the transfer of heat from the component to the heat sink.	▪ Exam ▪ Lab
4. Select and properly use electronic test equipment.	▪ Lecture ▪ Lab	▪ Correctly set up and use Analog and Digital millimeters for the measurement of voltage, current and resistance. ▪ Correctly set up and use a Oscilloscope.	▪ Lab
5. Discuss the operation of a junction diode.	▪ Lecture ▪ Lab	• Explain forward and reverse bias. • Draw the schematic symbol for a junction diode. • Test a diode with an Ohmmeter.	▪ Exam ▪ Lab
6. Discuss the operation of an Light Emitting Diode (LED)	▪ Lecture ▪ Lab	▪ Compute the resistance need for connecting an LED into a circuit. ▪ Connect an LED into a Circuit. ▪ Discuss the differences between LED's and Photodiodes.	▪ Exam ▪ Lab
7. Discuss the operation of Single-phase rectifiers	▪ Lecture ▪ Lab	• Discuss the operation of single-phase rectifiers. • Construct a half-wave full-wave and bridge rectifier circuit. • Compute the output voltage for different types of rectifiers.	▪ Exam ▪ Lab
9. Discuss the operation of a three- phase rectifier.	▪ Lecture ▪ Lab	• Discuss the operation of a three-phase rectifier. • Compute the average DC output voltage for three-phase rectifier circuits.	▪ Exam ▪ Lab
10. Discuss the operation of filters in an electronic circuit.	▪ Lecture ▪ Lab	• Discuss the difference between capacitive and inductive filters.	▪ Exam ▪ Lab

STUDENT LEARNING OUTCOMES	METHODS OF INSTRUCTION	SUCCESSFUL PERFORMANCE/BEHAVIORAL INDICATORS	METHODS OF EVALUATION
11.Discuss the operation of Special diodes	▪ Lecture ▪ Lab	• Discuss the operation and draw the schematic symbols for the zener, tunnel, varactor, Shockley, Schottky, IMPATT, gunn, and PIN diodes.	▪ Exam
12. Discuss the operation of the Transistor	▪ Lecture ▪ Lab	• Name the two types of bipolar transistors. • Test a transistor with a multimeter. • Connect a transistor into a circuit. • Draw the schematic symbols for transistors.	▪ Exam ▪ Lab
13. Discuss the operation of Thyristors.	▪ Lecture ▪ Lab	• Discuss the operation and draw the schematic symbols for the SCR, GTO, Diac, and Triacs.	▪ Exam ▪ Lab
14. Discuss the impact that electronics is having in Industrial applications around the world.	▪ Lecture	• Explain various Electronics applications used in industry throughout different countries and the United States.	▪ Exam

TENTATIVE CLASS SCHEDULE AND ASSIGNMENTS:

Semiconductors
Power and Heat Sinking
Test #1
Junction Diodes
LED's
Test #2
Single and Poly-phase Rectifiers
Filters
Test #3
Transistors
Thysistors
Test #4
Solid-state Relays
Number Systems

Digital Logic
Final Exam

CLASS GUIDELINES AND OTHER REQUIREMENTS:

****Missed assignments, including quizzes and tests, must be made up no later than one week after an absence or zero credit will be awarded for those missed tests, quizzes, and other assignments.** For more information about the RCC attendance policy, please see the *RCC Catalog and Student Handbook.*

Materials
Flash drive
Scientific calculator
Notebook/loose-leaf paper/typing paper
Pen or pencil

Evaluation The final grade will be based on the following criteria:
(SEE CATALOG FOR PLAGIARISM AND CHEATING STATEMENT)

Written Test	40%
Lab Assignments	30%
Final Exam	20%
Homework	10%

Policies and Important Information

1. **Instructor:** Billie Adeimy
2. **Email:** bladeimy@richmondcc.edu

3. **Attendance Policy:** Regular attendance is considered essential to realize course objectives. Students are expected to attend all scheduled meetings of classes for which they register. The College has determined that excessive absence (absences which exceed 10% of the scheduled class meetings) is detrimental to academic success. 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 class(es).

If a student has absences exceeding 10% of scheduled class time, Students will be deducted 7 points from their final grade resulting in a drop in letter grade for the course.

If a student decides to continue attending the class and has absences exceeding 20% will receive an F as a letter grade for the class. It is advisable that you voluntary drop yourself due to absenteeism and receive a W than fail the class.

ALL Students will be notified by e-mail and told verbally if they are about to reach the 10% or 20% points.

4. **Grading Scale:** The RCC grading scale: **93-100 (A), 85-92 (B), 78-84 (C), 70-77 (D), below 70 (F)**. Students in health related curricula must obtain a minimum grade of C in each major course in order to progress to the next semester. All students must obtain a grade of C in core curriculum courses in order to graduate.

5. **Withdrawal:** If you are going to drop one or more classes, you should follow the school's procedure. See a counselor or your instructor and obtain a drop form. This form should be signed by your instructor and returned to Student Development. You may also withdraw over the telephone by calling Student Development.

NOTE: If an Instructor advises you to drop the class due to attendance and you continue in the class pass the 20% point, you will receive an F as a letter grade for the class. It is advisable that you voluntary drop yourself due to absenteeism an receive a W than fail the class.
Students who withdraw after the 75% point of the semester will receive a grade of WU, which will negatively impact the student's GPA. ***Nov. 12, 2015 is the 75% point

6. **Withdrawal and Financial Aid:** A new Federal Return of Title IV Funds policy took effect August 1, 2000. This policy affects any student receiving federal financial aid (Pell, FSEOG, NCSIG) who withdraws from all classes. Under the new

policy, every student who withdraws or is withdrawn by the instructor completely on or before the 60% point of the semester will be required to repay funds.

7. **Responsibility for Work:** The student is responsible for all material, assignments, and announcements in class. If you miss class, you should get class notes and assignments from another student or contact the instructor.

8. **Discipline Policy:** The school has a discipline policy which will be enforced. Under it, the college has the right to decline admission, to reprimand, to place on probation, to suspend, to expel, or to require the withdrawal of a student for just cause when it is deemed in the best interest of the college. A list of offenses is found in the College Catalog.

9. **Grievance Procedure:** If you have a complaint, try to work it out with the instructor. If this is not possible, talk to the department chair. If you can't work out the problem with the department chair, talk to the division chair for the department. If the issue still cannot be resolved, then talk to the Vice-President for Instruction.

10. **Other Notes:** It is against school policy for children to accompany adults to class. It is against school policy to have food or drinks in classrooms.

11. **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.

12. **Weather Delay:** If the College is on a two-hour delayed schedule, this class will **Follow the two-hour delay schedule unless canceled.** Note: If the College is on a 2-hour delayed schedule on any exam day, the exam schedule will be moved forward two hours for all exams during the day, with no exam time being shortened.

13. **Final Exam:** The final exam for this course is scheduled for **Last Day of Class.**
Note: If the college is closed during any of the exam days, the exam schedule will resume on the next day the college is open, completing the remaining exams.

14. **Academic Freedom:** Students' rights to express dissenting opinions from that held by the instructor are upheld. No student will be penalized for disagreeing with the instructor's opinion. However, students should know the difference between opinion and fact, as factual information is not subject to debate.

15. **Internet Use in the Classroom:** Connecting classrooms to the Internet and college computing resources opens immense possibilities for learning—but it also opens the risk of **losing student attention** to e-mail, instant messaging, web surfing, MP3 downloads, and even network hacking. Due to the increasing demands in technology and education, the internet is deemed necessary but should not be abused or accessed while in the classroom for these purposes. While in the classroom, Internet access is **prohibited while the instructor is lecturing** or when the class in involved in classroom exercises that do not include the internet. Internet activity will only be permitted when authorized by the instructor. There are **NO** exceptions to this classroom Policy.

16. **Late Work:** Assignments submitted late will be accessed a penalty of **-5 points** per school day late. Monday-Friday is counted 1 day each (weekends are counted as one day). The late penalty policy does **NOT** apply to the final term project, simply because late final projects will **NOT** be accepted due to end-of-the-semester grading constraints.

17. **Makeup Tests:**
When students have missed a test, the student may be allowed to make up the test **ONLY** if the instructor permits. Otherwise **ALL** test should be taken at the appropriated times.

18. **Cell Phones and Electronic Devices**: Classroom disruption by cell phones or other electronic devices is prohibited. All cell phones and similar electronic devices must remain turned off and out of sight for the duration of class. This includes headphones and Bluetooth devices. Personal Laptops, Net-books, I-pads, etc. are also prohibited without prior permission from your instructor. **If a student violates this policy, they will be asked to leave the classroom and be counted absent for the remainder of the class period or surrender their cell phone to the instructor for the remainder of the class. If a cell phone or an electronic device is used for cheating during a test, a student will be given a zero and given a failing grade for the class**. Cheating at RCC is not tolerated and may

result in further disciplinary action. Exceptions to this policy, needs prior approval from the instructor before the class starts.

19. **Classroom and Campus Security requirements: Student IDs:** It is **required** that Student IDs be worn at **ALL** times while on Campus. All IDs must be clearly displayed on the front of an individual. Failure to display your Student ID on an on going basis will be Reported to the VP of Student Development and may result in disciplinary action.
Classroom Doors: The door will remain **locked** at all times while class is in session. (This is according to college policy.)

20. **RCC's Dress Code**
Appearance: You are expected to dress appropriately for the classroom environment. Sagging pants, clothing/jewelry with drug related signs, low cut tops, see through garments, too-short shorts, short skirts, leggings worn alone, halter tops, short midriff tops are not acceptable. No hats or head gear are allowed in the classroom. No gang affiliation is to be displayed. The instructor will notify any student if he/she is inappropriately dressed. If a student is found in violation of the above dress code, the garment error will be immediately corrected and the student can remain in class; or the student will be sent home to correct the garment error; or failure to comply with garment error will result in the student being referred to the Discipline Committee.