Course Syllabus: EET 1015C - Fundamentals of DC Circuits - (3 Credits hours)

Professor's Information

Instructor: Fred Mawudzro Office: West Campus, Bldg. 9 – Room 210 Cell-phone: 407-449-6507 (Cell); Mobile: 321-418-0744 E-mail: fmawudzro@mail.valenciacollege.edu Website: Class Room Venue: West Campus; Room 9-210 Class Time: Thursday 5:30PM -9:50 PM

Office Hours

| Day | Class Time | Location | Office Hours | Location |
|-----------|---------------|----------|--------------|----------------------------------|
| Monday | | | 2PM -3PM | Virtual: e-mail & Canvas message |
| Tuesday | | | | |
| Wednesday | | | 2PM-3PM | Virtual: E-mail & Canvas message |
| Thursday | 5:30 -9:50 PM | 9-210 | 12-1:00 PM | Virtual: E-mail & Canvas message |
| Friday | | | | |

Textbook: Principles of Electric Circuits, Conventional Current Version, Floyd, 9th Ed. ISBN: 9780135073094, Publisher: Pearson.

Lab Manual: Fundamentals of DC & AC Circuits Laboratory Manual, by Hedayat, Nasser Prerequisite: MTB 1329C and EET 1214C

Grading System:

| Laboratory Exams | 25% |
|------------------|-----|
| Attendance | 5% |
| Home Work | 10% |
| Exam 1 | 15% |
| Mid-Term Exam | 20% |
| Final Exam | 25% |

| Score | Final Grade |
|--------|-------------|
| 90-100 | Α |
| 80-90 | В |
| 70-80 | C |
| 60-70 | D |
| <60 | F |

The final exams is comprehensive. No late reports will be accepted. There are no provisions for makeup quizzes, tests or exams.

Class Time and Location:

Lecture: Thursday 5:30 – 9:50 PM, Bldg. 9– Room 210 Laboratory: Bldg. 9 – Room 210

Catalog Course Description: Fundamental course in DC electric circuits. Prepares student for EET 1025C and subsequent advanced courses. Classroom lectures supplemented with laboratory projects to provide student with hands-on experience in use of electronic test equipment and in proper techniques for data measurements/interpretation, trouble-shooting and orderly documentation of test results and conclusions. (Special Fee: \$67.00)

Note:

□ It is the student's responsibility to be in class and take notes. Exams will cover all material covered *in class*, homework, and labs.

L Each lab report has performance grade (50 points) and writing grade (50 points).

□ No hand-written material will be accepted in the lab reports unless permitted by the instructor in advance. You can scan the circuits for the lab reports if you cannot reproduce them in Multisim.

□ All labs must be finished during class time else you will lose performance points.

□ Labs performed in the open lab will not be accepted unless prior permission from the instructor.

- **Given Students MUST** finish all the pre-labs before they come to the class.
- □ No Late report will be accepted.
- □ Homework should be turned in at the beginning of the class meeting.

Important Dates:

| Monday, May 14 | Drop/Refund Deadline | |
|------------------------|---------------------------------------|--|
| Wed - Fri, May 15 - 24 | No Show Reporting Period | |
| Friday, July 06 | Withdrawal deadline for "W" Grade | |
| Mon - Sun, July 31 | Final Exam Week | |
| Tuesday, August 02 | Final Grades Viewable on DASHBOARD or | |
| Tuesday, August 03 | Canvas | |

Course Objectives – This course will prepare the student to demonstrate the following:

- Understand basic concept of electrical charge, voltage, current, resistance, and Ohm's law.
- Understand the basic units, power of ten notations, scientific notation, engineering notation, metric prefixes, and unit conversions
- Understand power, energy, resistors power ratings, voltage drop in a resistance Study resistors in series, KVL, Ohm's Law for a series circuit, voltage dividers, power in a series circuit, circuit ground, and troubleshooting series circuits.
- Study resistors in parallel, KCL, Ohm's Law for a parallel circuit, circuit dividers, power, and troubleshooting parallel circuits.
- Identify, analyze and trouble-shoot Series-Parallel circuits and Ladder networks.
- Study source transformation, the Superposition theorem, Thevenin & Norton theorems, Maximum Power theorem, and Delta-Wye conversions.
- Study the Branch, Mesh, and Node Analysis using the Substitution method and the Determinant Method.
- Use CAD Simulations (Multisim, OrCAD, Cadence) to study the behavior of passive circuit networks

Tentative Schedule

| Class Dates | Topics | Lab Exercise | Chapter |
|-------------|---|---------------------------------|---------|
| May 10 | Units/Voltage, Current, Resistance and Ohm's law | Tour of the Laboratory | 1, 2, 3 |
| May 17 | Energy, Power Dissipation and Efficiency | 2Ohm's Law | 4 |
| May 24 | Series Circuit, Open Circuit, Short Circuit, Power in Series Circuit. | 3—DC Series Circuit | 5 |
| | Kirchhoff's Voltage Law, Voltage Sources in Series | | |
| May 31 | Exam 1—Chapters 1-5 & Labs | Lab 1 Exam—Multisim/Bench | |
| June 7 | Parallel Circuits, Kirchoff's Current Law, Current sources in | 4—DC Parallel Circuits | 6 |
| | Parallel; Power in Parallel Circuits | | |
| June 14 | Series-Parallel Circuits; Wheatstone Bridge; Voltage and Current | 5—DC series / Parallel Circuits | 7; 8-8 |
| | dividers; Wye-Delta and Delta-Wye Conversion. | | |
| June 21 | Source Conversion, Thevenin and Norton's Theorem, | 6—Superposition Theorem | 8 |
| | Superposition, Maximum Power Transfer Theorem; | | |
| June 28 | Exam 2—Chapters 6-8 & Labs | Lab 2 Exam—Multisim/Bench | |
| July 5 | Branch, Node and Loop Analysis | 7-Thevenin / Norton's Theorems | 9 |
| July 12 | Branch, Node and Loop Analysis | | 9 |
| July 19 | Lab Final—Multisim/Bench | | |
| July 26 | Comprehensive Final Exam | | |

Homework Assignments

| Chapter | Homework |
|---------|-----------------------|
| 1 | 11, 17, 29 |
| 2 | 3, 9, 13, 25 |
| 3 | 1, 7, 15, 25, 31 |
| 4 | 11,12, 23, 27, 39 |
| 5 | 11, 21, 31, 39 |
| 6 | 8, 11,17, 29, 35, 41 |
| 7 | 3, 13, 23, 29, 45 |
| 8 | 5, 11, 19, 23, 25, 35 |
| 9 | 8, 22, 29, 32 |

DISCLAIMER: Any Changes in the policy and/or schedule of this syllabus may be made at anytime during the semester at the discretion of the instructor.

Rules and Comments:

□ Absolutely No food or drinks in the classroom or laboratory

No make-up exams are permitted unless *prior arrangement* with the instructor has been made and *approved*.

No Lab will be accepted if performed in the open lab unless prior approval by the instructor

□ There are no "dropped" exam scores. Each student is responsible for his or her own work. All exams and graded assignments are to be exclusively your own work, unless you receive instructions to collaborate. Using any human, written, electronic, or other resource in any manner not explicitly authorized by the instructor will result in a grade of zero on the exam(s) or assignment(s) involved.

□ You are expected to be in class **on time**, and to remain in class for the entire period unless permission to leave early has been granted by the instructor. It is disruptive to arrive or depart while class is in session.

□ Absences are excused solely at the discretion of the instructor, who may require that you prove the existence of extenuating circumstances before excusing any absence(s).

More than **two unexcused** lecture absences could result in a grade of **"F"** for the course. It is *your responsibility to withdraw from the course*. Any withdrawal request after the withdraw deadline may not be granted.

It is the student's responsibility to keep track of their status and performance (i.e., quizzes, and exam grades) in class. Student should be able to average their grades based upon the grading policy stated in this syllabus.

You are encouraged to ask relevant questions during class.

□ Your attitude will greatly affect your ability to succeed in this course. It will also affect your classmates' attitudes should you choose to participate in class discussions. Always consider this fact carefully before you speak or act. If your comments or actions in class are deemed by the instructor to adversely affect other students' attitudes, they are considered disruptive.

Grades will not be disclosed over the telephone or via e-mail, except through your Canvas account.

Cheating or *any act of academic dishonesty* **is prohibited**. Any student caught cheating, the instructor has the right to withdraw the student from the class or result in a failing grade.

If you want to record any lecture using audio or video devices, you must take permission from the instructor and fellow students

Mobile phones, tablets must be turned OFF or put on silent mode during class.

Disruptive Behavior: Any student engaging in disruptive behavior will be advised on the first offense and will be **dropped** from the course on the second offense.

Student Core Competencies:

The faculty of Valencia College has established four Core Competencies that describe the learning outcomes for a Valencia graduate. They are: THINK, VALUE, COMMUNICATE, and ACT. These general competencies can be applied in many contexts and must be developed over a lifetime. They specify how learning can be expressed and assessed in practice. They enable students and faculty to set learning goals and assess learning within and across the many disciplines of human inquiry. Use the descriptions and examples of academic work for each to measure your own learning outcomes. Samples of the academic work are great additions to your Learning Portfolio. For further information on student core competencies please go to www.valenciacollege.edu/competencies.

Expected Student Conduct:

Valencia College is dedicated not only to the advancement of knowledge and learning but is concerned with the development of responsible personal and social conduct. By enrolling at Valencia College, a student assumes the responsibility for becoming familiar with and abiding by the general rules of conduct. The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in the disruption of a class may be directed by the faculty member to leave the class. Violation of any classroom or Valencia's rules may lead to disciplinary action up to and including expulsion from Valencia. Disciplinary action could include being withdrawn from class, disciplinary warning, probation, suspension, expulsion, or other appropriate and authorized actions. You will find the Student Code of Conduct in the current Valencia Student Handbook

Students with disabilities

Students who qualify for academic accommodations must provide a letter from the Office for Students with Disabilities (OSD) and discuss specific needs with the professor, preferably during the first two weeks of class. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities (West Campus SSB 102, ext. 1523).