HAGERSTOWN COMMUNITY COLLEGE
COURSE SYLLABUS DOCUMENT

COURSE: EGR 208 Systems and Circuits (4 Credits)

INSTRUCTOR: **SEMESTER/YEAR:** 17/FA

SEMESTER/YEAR:

TEXTBOOK: Introduction to Electric Circuits, Ninth Edition, Svoboda and Dorf, Wiley, ISBN 978-1-118-47750-2

COURSE DESCRIPTION: A calculus and differential equation based introductory electric circuits course is presented, including coverage of active and passive components, resistive network, kirchoff laws, equivalent circuits, operational amplifiers, resistor-inductor-capacitor networks, circuit responses, steady-state analysis, frequency response, Laplace Transform, Fourier Transform. Laboratory assignments include resistive networks, DC and AC circuits, Operational Amplifier circuits, Frequency response and filters.

COREQUISITE: MAT 206

STUDENT LEARNING OUTCOMES:
The student will demonstrate the following:

1. Apply knowledge of mathematics, science, and engineering.
2. Apply calculus and differential equation techniques to circuit analysis
3. Identify, formulate and solve basic resistive and RLC circuit problems.
4. Use the techniques, skills, and modern engineering tools necessary for successful practice.
5. Design and conduct experiments and interpret analysis results

TOTAL HOURS OF COURSEWORK

To earn three academic credits at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute "academic" hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit. For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework.

Direct Faculty Instruction: 1 hour/week/credit for 15 weeks; 50 min = 1 classroom hour
(50 min x 3 credits x 15 weeks) = 2250 minutes = 37.5 hours

Student Work Outside the Classroom: 3 hours/week/credit for 15 weeks
(3 hrs x 3 credits x 15 weeks) = 135 hours

	Direct Faculty Instruction	Student Work (Out of Class)
In Class Lectures (3 Credits)	**37.5 Hours**	
2 Exams (2 Tests and Final Exam)		**40 Hrs.**
Homework Assignments		**95 Hrs.**
"Lab" Time (1 Credit)	**37.5 Hours**	
Lab Exam	**Included in Lab Time**	
Lab Prep and Reports		**25 Hours**
TOTAL	**75 Hours**	**150 Hours**

COURSE POLICIES:

THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THE COURSE CONTENT AND/OR THE EVALUATION (TESTING) PROCEDURES AS DEEMED NECESSARY.

Hagerstown Community College's Attendance Policy: Students are expected to attend all classes. In the case of absence due to emergency, or participation in Official College functions, it is the student's responsibility to confer with the instructor about the absence and missed course work. Further, **it is the student's responsibility to withdraw officially from any class, which he/she ceases to attend**. Failure to do so will result in the recording of an "F" grade. Students absent from an announced test or exam, unless authorized, may be given an equivalent exam at a later date at the discretion of the instructor.

Emergency/Inclement Weather: Listen to your local news for cancellations or delays. You may also call the college at 301-790-2800 or log onto the website at www.hagerstowncc.edu.

Honor Code: Upon admission to HCC all students sign a pledge to uphold an honor system which holds the qualities of honesty and integrity in highest regard for the duration of their educational experience. The HCC Honor Code Policy and Procedures, also referred to as Academic Integrity, is published in the Student Handbook and may be obtained in the Student Activities Office.

1. AC-Steady State Analysis
    a. Power
    b. Complex Power
    c. Power Factor
    d. Maximum Power Transfer Theorem
    e. Ideal Transformers
2. Frequency Response
    a. Gain, Phase Shift and Network Function
    b. Bode Plots
    c. Filters
        i. RLC
        ii. Operational Amplifier

COURSE CONTENT OBJECTIVES:

1. Perform a thorough analysis of resistive networks
2. Compute Thevenin and Norton equivalent circuits
3. Analyze circuits with operational amplifiers
4. Analyze resistive and active component networks and determine frequency response
5. Analyze AC circuits and determine frequency response
6. Analyze 1st and 2nd order filter responses
7. Analyze Transformers
8. Analyze low-pass, high-pass and band-pass filters
9. Laboratory experiments in resistive, LC, RLC, operation amplifiers transformers and filter networks.

CONTACT INFORMATION:

Office Hours:

SERVICES FOR STUDENTS WITH DISABILITIES:

Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at dss@hagerstowncc.edu or at 240-500-2530.