HAGERSTOWN COMMUNITY COLLEGE
COURSE SYLLABUS DOCUMENT

COURSE: EGR 211 Discrete Signal Analysis (4 Credits)
INSTRUCTOR: Ed Sigler

CONTACT INFORMATION:
240-500-2610
cesigler1@hagerstowncc.edu
STEM 424
Office Hours: TBD

SEMESTER/YEAR: 15 Fall

TEXTBOOKS USED: A. Papamarcou, A New Sequence in Signals and Linear Systems Part 1 (2007) [To be determined]

COURSE DESCRIPTION: This course introduces basic tools for the analysis of continuous and discrete time signals, including linear transformations and linear systems, solutions to linear simultaneous systems via Gaussian elimination, Fourier Transforms (continuous and discrete), finite impulse response filters and the z transform. The course also includes a lab module emphasizing MATLAB applications to signal and image processing.

PREREQUISITE: EGR 103, MAT 204

STUDENT LEARNING OUTCOMES:
The student will demonstrate the following:
1. Apply knowledge of calculus and linear algebra to analysis of signals.
2. Understanding of discrete sampling of continuous time signals.
3. Learn and apply Fourier Transforms to the analysis of continuous and sampled signals.
4. Analyze the frequency and time responses of Finite Impulse Response filters.

COURSE CONTENT OBJECTIVES:
1. Review real and complex valued continuous sinusoids.
2. Understand and apply mechanisms for sampling continuous signals and aliasing.
3. Understand and apply linear transformations .
4. Solve simultaneous linear equations using Gaussian elimination.
5. Understand and apply Fourier Transforms to detection and analysis of signals.
6. Apply Finite Impulse Response filters to signal analysis and processing.
7. MATLAB experiments and analysis of signals using concepts from lecture.

TOTAL HOURS OF COURSEWORK

To earn four academic credits at HCC, students are required to complete a minimum of 50 clock hours (60 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 50 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 4 credits x 15 weeks) = 2250 minutes = 50 hours

Student Work Outside the Classroom: 3 hours/week/credit for 15 weeks
(2.5 hrs x 4 credits x 15 weeks) = 150 hours

	Direct Faculty Instruction	Student Work (Out of Class)
In Class Lectures (4 Credits)	**50 Hours**	
2 Exams (2 Tests and Final Exam)		**40 Hrs.**
Homework Assignments & Projects		**150 Hrs.**
TOTAL	**50 Hours**	**190 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.