

Hagerstown Community College
COURSE GUIDELINES

COURSE: MAT 206 Differential Equations, 4 credits

INSTRUCTOR: Jennifer Szczesniak

SEMESTER/YEAR: Fall 2017

COURSE DESCRIPTION:

Classification of differential equations, solutions of equations of order one, solutions of linear equations, differential operators, systems of equations, solution of certain non-linear equations, solution in series, Laplace transforms, partial differential equations with variables separable, and existence and uniqueness theorem are among the topics covered in this course. Prerequisite: MAT 204 Semesters offered: Spring, 4 Credits.

TEXTBOOK: Differential Equations with MATLAB, 3rd edition by Hunt et al, ISBN 97811188376805

LEARNING OUTCOMES:

GENERAL EDUCATION

Upon successful completion of this course, a student should be able to:

1. Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.
2. Represent mathematical information and communicate mathematical reasoning symbolically and verbally.
3. Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, students will learn:

1. To solve linear differential equations.
2. To solve given types of non-linear differential equations.
3. To use Laplace transformations to solve differential equations.
4. To use differential equations to solve application problems.
5. To classify a given equation and determine a method to use to solve that equation.
6. To work effectively in groups.
7. To use technology, in the form of a computer algebra package, the graphing calculator and other programs, to assist in the problem-solving process.
8. To effectively communicate results and the thought process that led to those results.

Total Hours of Coursework: 150 hours

To earn one academic credit 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.

Credit Hour to Clock Hour Calculation:

Direct Faculty Instruction: 1 hour/week/credit for 15 weeks; 50 min = 1 classroom hour
 (50 min x 4 credits x 15 weeks) = 3000 minutes = 50 hours

Student Work Outside the Classroom:
 (2 hrs x 50 hours in class) = 100 hours

Total Time Needed: 150 hours

Activity	Time Needed
Outside of the Classroom	
MATLAB Assignments	45 hours
Written Assignments	30 hours
Test Preparation	24 hours
Subtotal	99 hours
Inside of the Classroom	
	55 hours
Total	154 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.