

**HAGERSTOWN COMMUNITY COLLEGE
MASTER COURSE SYLLABUS**

COURSE: MAT164 – Calculus with Applications (3 Credits)

SEMESTER/YEAR: Spring 2018

INSTRUCTORS: T. Crawford

COURSE DESCRIPTION:

This course is an applications-oriented approach to differential and integral calculus for the science, business, or social science student who desires a course more intuitive than MAT 203. Total of 45 hours of lecture.

Prerequisite: MAT 101, MAT 131 or MAT 161 or equivalent score on placement exam. Semesters offered: Fall, Spring, Summer. 3 Credits

TEXTBOOK: *Calculus with Applications* – Calaway, Hoffman, and Lippman – **OER Creative Commons Attribution 3.0**

STUDENT LEARNING OUTCOMES:

General Education: Upon successful completion of this course, students will have demonstrated the capacity to effectively...

- G1 Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.
- G2 Represent mathematical information and communicate mathematical reasoning symbolically and verbally.
- G3 Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning.

Course: Upon successful completion of this course, students will have demonstrated Calculus Literacy (CL), and Calculus Reasoning (CR).

CL - Calculus Literacy involves understanding and using the basic language and tools of calculus: knowing what calculus terms mean, understanding the use of calculus symbols, and being able to express (in calculus terms) graphical representations, and perform basic calculus computations.

CR - Calculus Reasoning is the way people process with calculus ideas, make sense of calculus applications, and interpret calculus solutions. Calculus reasoning may involve connecting one concept to another (e.g., derivative and relative min/max) or may combine ideas about rate of change and practical implication. Reasoning means understanding and being able to explain calculus processes, and being able to fully interpret calculus results.

These skills/abilities will be applied to the follow course concepts generating 6 distinct course outcomes: CL1, CR1, CL2, CR2, CL3, CR3.

- 1 – Functions
- 2 – Derivatives
- 3 – Integrals

CREDIT HOUR TO CLOCK HOUR CALCULATION:

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.

Credit Hour to Clock Hour Calculation:

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: 2 hours/week/credit for 15 weeks
(100 min x 3 credits x 15 weeks) = 75 hours

LECTURE SECTIONS	Direct Faculty Instruction (In Class) 37.5 Hrs. Required	Student Work (Out of Class) 75 Hrs. Expected
Lecture/Class Exercises	37.5 Hours	
Final Exam		3 Hrs. Prep/2 Hrs. Completion
3 Exams		9 Hrs. Prep/6 Hrs. Completion
28 Homework Assignments		30 Hrs.
Class Preparation		25 Hrs.

A NOTE ON TESTING:

All testing exam will be administered in a proctored setting, either in the HCC Academic Testing Center (or an approved accredited testing facility) or by the instructor.

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

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