Hagerstown Community College

Master Syllabus

COURSE: **MAT115 – Quantitative Reasoning**

DATE: **Fall 2019**

INSTRUCTOR: **T. Crawford**

COURSE DESCRIPTION: This is a college-level mathematics course designed for career programs, non-transfer degree, and transfer degree students who do not expect to need any additional mathematics coursework to achieve their education or career goals. Emphasis is placed on quantitative methods and the associated reasoning skills essential for efficient and effective personal and professional decision making. The course will be covered in 5 modules. Three of these modules; Personal Finance, Mathematical Modeling, and Probabilistic Reasoning are prescribed. The remaining two modules are chosen by the section instructor from; Logic, Set, Graph, or Voting Theories. This is a terminal course and does not provide a pathway into any other mathematics course.

TEXTBOOK: **ISBN 978-1-63545-052-1**

STUDENT LEARNING OUTCOMES**:** Gen Ed Outcomes: 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 Outcomes: Upon successful completion of this course, students will have demonstrated the capacity to effectively employ G1, G2, and G3 above to; C1 - Evaluate alternative investment/financing options and effectively communicate a rationale for, and implications of, making a particular choice. C2 - Develop models for situational analysis/prediction and to use those models to develop courses of action that can be clearly and convincingly communicated. C3 - Communicate professionally regarding certainty/risk in decision making, proof (with statistical significance) of change within a system/procedure, and identification of questions/procedures necessary for further inquiry. Additionally, two of the following four course outcomes will be covered. C4 - Effectively communicate one's own thought process and problem solving strategy, create sets from context, perform operations on those sets, and solve practical application problems using the techniques of set theory. C5 - Critically evaluate the text of a logical argument/presentation for deficiencies, correct those deficiencies, and to construct substantive logical arguments that can withstand critical evaluation. C6 - Identify opportunities and professionally communicate ways to improve upon operational inefficiencies using the techniques of graphing theory. C7 - Present a justification for the use of a particular voting/apportionment method, identify shortcomings, and devise plans/systems to address/avert those shortcomings.

MINIMUM CLOCK HOURS REQUIRED FOR THIS COURSE

Activity	Direct Faculty Instruction In-Class 37.5 Hours Required	Student Work outside of the Classroom 75 hours required
Lecture & Classwork	37.5 hours	
Reading & Content (~50)		45 hours
Module Quizzes (5)	Included in lecture time	5 hours preparation
Module Exams (5) (Academic Testing Center)		15 hours exam preparation 10 hours exam completion
Total Hours	**37.5 hours**	**75 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.