

From These Roots...A Foundation for Life: Scholarship, Leadership, and Service

HAMPTON UNIVERSITY
Department of Mathematics
MAT 117-08 (CRN: 21736)
Fall 2016

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OFFICE HOURS: MWF 9:00-11:00 AM, TR 1:00-3:00 PM

COURSE CREDIT HOURS: 3.0
CLASSROOM: DU 109
TIME: TR 8:00-9:15 AM

COURSE WEB SITES:

Blackboard: <https://courses.hamptonu.edu/webapps/portal/frameset.jsp>
MyMathLab: <http://www.pearsonmylabandmastering.com>

ACADEMIC CATALOG COURSE DESCRIPTION: Functions and their graphs. Polynomial and rational functions, exponential and logarithmic functions. Systems of linear and nonlinear equations. Sequences and series.

PREREQUISITE: MAT 105 or by placement.

TEXTBOOK WITH MyMathLab STUDENT ACCESS CODE: Each student is required to purchase his/her own textbook with MML Student Access Code: *Pre-calculus: a right triangle approach*, 2nd Ed., Ratti and McWaters, Addison-Wesley, ISBN: 10-0321644700 or ISBN-13–9780321644701. The textbook with MML Student Access Code can be purchased from www.ecampus.com/hamptonu or www.coursecompass.com. Do not buy a book without a valid MML Student Access Code. Students are authorized only one temporary code use for a limited time, if available. The textbook is available in two forms: traditional textbook (hard-cover) form or the “MAT 117 Custom Text for Hampton University” (soft-cover) form. If you are planning to take Pre-calculus II (MAT 118), purchase the traditional hard-cover form of the textbook. Otherwise, purchase the custom soft-cover form of the textbook.

COMMUNICATION: E-mail is my primary and preferred method of communication outside of class or office hours.

TOPICAL OUTLINE/TEXTBOOK REFERENCE:

Unit I: Functions and Their Graphs : (section 2.4 to section 2.9)

Functions and their graphs: characteristics of functions, lines, graphing techniques (transformations); operations on functions, composite functions; One-to-one functions and inverse functions.

- 2.4: Relations and Functions
- 2.5: Properties of Functions
- 2.6: A Library of Functions
- 2.7: Transformation of Functions
- 2.8: Combining Functions; Composite Functions
- 2.9: Inverse Functions

Unit II: Polynomial And Rational Functions: (section 3.1 to section 3.6)

Analysis of Polynomial functions: quadratic (vertex, symmetry, intercepts and applications), real zeros of polynomial functions, complex zeros of quadratic functions, and rational functions (intercepts, asymptotes).

- 3.1: Quadratic Function
- 3.2: Polynomial Functions
- 3.3: Dividing Polynomials
- 3.4: The Real Zeros of Polynomial Functions
- 3.5: The Complex Zeros of Polynomial Functions
- 3.6: Rational Functions

Unit III: Exponential And Logarithmic Functions: (section 4.1 to section 4.5)

Exponential and logarithmic functions, properties of logarithms, logarithmic and exponential equations and applications

- 4.1: Exponential Functions
- 4.2: The Natural Exponential Function
- 4.3: Logarithmic Functions
- 4.4: Rules of Logarithms
- 4.5: Exponential and Logarithmic Equations

Unit IV: Systems of Equations: (section 8.1 and section 8.3) Systems of linear and nonlinear equations and applications

- 8.1: Systems of Equations in Two Variables
- 8.3: Systems of Nonlinear Equations

Unit V: Introduction to Sequences and Series: (section 11.1 to section 11.3)

Sequences, arithmetic and geometric sequences, arithmetic and geometric series

- 11.1: Sequences and Series
- 11.2: Arithmetic Sequences; Partial Sums
- 11.3: Geometric Sequences and Series

ESSENTIAL COMPETENCIES:

1. Functions and their Graphs
2. Excogitate the properties of functions using algebraic and graphical methods that encompass the plotting of points, determining symmetries and making horizontal and vertical shifts. Measured by Test 1.
3. Polynomials and Rational functions
4. Sketching graphs and finding the zeros of these basic functions and discussing the results useful for obtaining this information. Applications of simple and rational functions. Measured by Test 2.
5. Inverse, Exponential and Logarithmic Functions
6. Study the close relationship between specific exponential and logarithmic functions. Measured by Test 3.
7. Systems of Equations
8. Develop methods of finding solutions that are common to all equations in the system. Measured by Test 4.
9. Introduction to Sequences and Series
10. Demonstrate sequences and summation notation in advanced mathematical applications. Measured by Test 4.

CORE COMPETENCIES: Information and Technology Literacy is the ability to use electronic media to support research activities to locate, evaluate, and use effectively the needed information and its sources. Measured by Test 1, 2, 3, and 4.

Quantitative Reasoning is the ability to use numeral, geometric, and measurement data and concepts, mathematical skills and principles of mathematical reasoning to draw logical conclusions and to make well-reasoned decisions in professional, financial, and/or real world situations. Measured by Test 1, 2, 3, and 4.

Scientific Reasoning is the ability to describe, understand, predict, and control natural phenomena by adherence to a self-correcting system of inquiry, the scientific method, and reliance on empirical evidence. Measured by Test 1, 2, 3, and 4.

MINIMUM COMPETENCY: To be able to define and identify a function.

Disclaimer: Minimum competencies may not be directly associated with your final grade in this course. Successful accomplishments of the minimum competencies will demonstrate your basic knowledge of selected Specific Intended Student Learning Outcomes.

MINIMUM GRADE REQUIREMENTS FOR SCHOOL OF SCIENCE MAJORS: The following information applies to all students in the School of Science: *“In addition to the minimum grade requirements established by Hampton University, all majors within the School of Science must pass in all required courses offered within the School of Science with a grade of “C” or better in order to satisfy degree requirements. The minimum grade requirement is in effect for all science courses taken during fall 2001 and beyond.”*

TEACHING AND LEARNING STRATEGIES: Lecture, cooperative learning and or group activities will be infused throughout the semester. Each lecture class will cover the theory and related problems from the exercise. Students are required to solve enough number of problems until they are comfortable with the methods and or techniques introduced in class. Difficulties with the material will be discussed on –one-to-one basis during the office hours. Students are expected to devote a minimum of 5 hours per week outside of class time on the materials covered.

WRITING-ACROSS-THE-CURRICULUM: Writing across the curriculum objectives will be achieved through the following course assignment:

ATTENDANCE POLICY: All students are expected to be present and on time for all classes. Attendance will be taken at each class meeting. All requests for excused absences must be made in writing with supporting documentation. Information provided should include the following; date of absence, reason for absence, date of submission and signature. An absence must be verified and supported by a written statement from the proper authority. *Students are responsible for any missed materials that are covered in the class.*

STATEMENT ON AUDIO AND VIDEO RECORDING

Law and the Board of Regent Policy do not allow covert videotaping of class or unauthorized audio recording of class. This class may be videotaped or audio recorded **ONLY WITH THE WRITTEN PERMISSION** of the Instructor. In order to accommodate students with disabilities, some students may be given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

USE OF TECHNOLOGY: Online educational software via MyMathLab (MML) will be used in this course. Homework and quizzes will be assigned on MyMathLab. Homework and quizzes are **mandatory** and must be completed online and on time. Students are also encouraged to use other learning aids available on MyMathLab.

CALCULATOR USAGE: A graphing calculator with TI-83/84 PLUS or equivalent capabilities will be required for this course. Calculators with symbolic computation capabilities are prohibited. During final examination and in class test(s), the passing of calculators, storing of memos, formulas or notes in the calculator memory or written/taped to the inside cover is considered cheating and therefore they are considered as a violation of the Honor Code. The instructor reserves the right to reset the calculators during the tests/examination or during the class meetings if needed. The instructor may require students to show the algebraic steps required even when the results can be obtained from the graphing calculator.

COURSE EVALUATIONS/GRADING POLICY: Students learning evaluations will be done throughout the semester at regular intervals, and the graded evaluations will be returned to the students as feedback of their performance. Evaluations will include: four in-class tests, MML homework and quizzes, writing-across-the-curriculum (WAC) project, and a comprehensive final examination.

EXAM SCHEDULE: Exam dates are **NON-CHANGEABLE** unless inclement weather or unforeseen emergency (by the instructor) occurs. In the event of inclement weather the exam will be administered the *NEXT CLASS* period. Within **2 class periods** you are allowed to submit a test to be reviewed by the instructor once it is returned.

Test 1	Tuesday, September 20
Test 2	Tuesday, October 11
Test 3	Tuesday, November 1
Test 4	Tuesday, December 6
Homework	Due dates are given online
Quizzes	Please see Course Calendar
WAC Project	Due on Thursday, December 8
Final Examination	Monday Dec. 12 @ 1:00-2:50PM, room TBA. No one is exempted from the final exam.

Midterm Grade: The mid-term grade will be based on the total accumulated before October 22.

Final Course Grade: The student's final course grade will be determined as follows using the University Standard Grading scale:

Test 1 to Test 4	40%
Homework	15%
Quizzes	10%
WAC Project	5%
Final Examination	30%
TOTAL	100%

UNIVERSITY STANDARD GRADING SCALE:

A+(98-100)	B+(88-89)	C+(78-79)	D+ (68-69)	F(Below 60)
A(94-97)	B(84-87)	C(74-77)	D(64-67)	
A-(90-93)	B-(80-83)	C-(70-73)	D-(60-63)	

MAKE-UP/LATE WORK POLICY: ABSOLUTELY NO make-up exams and quizzes except in cases of DOCUMENTED emergencies. If such an emergency occurs, you MUST contact me AS SOON AS POSSIBLE in order to arrange for a make up with in seven days from the day the missed quiz or exam is given.

USE OF ELECTRONIC DEVICES/CHIT-CHATting: Students are not allowed to use any electronic device inside the classroom unless permission to do so is granted by the instructor. Students must set the ringer of their cell/mobile phones to off/vibrate while in classroom. Actions such as (but not limited) using cell phones (including text-messaging activities), listening to music, surfing the net, leaving the ringer of cell phone on, chit-chatting, and alike during classroom activities are not permitted. These actions are considered disturbance of the classroom environment. Students who fail to adhere to these requirements will be asked to leave the classroom for the first offense. Further appropriate disciplinary action will be taken for repeat offenders.

FINAL EXAMINATION POLICY: The examination schedule is printed by the office of the Registrar and should not be altered without approval by the department chairperson and school dean, in collaboration with the Registrar and the Provost. Each course shall be terminated with a final examination or evaluation. The examination grade, combined with the class record for the semester, will constitute the student's final grade. Students who are absent from the final examinations for reasons beyond their control may apply to the appropriate dean of women or men for official verification. Students must also confer with the instructor of the course. It is the responsibility of the instructor to accept, reject, or make individual adjustments for students missing examinations. Detailed rules governing examinations can be found in the Official Student Handbook.

INTERNATIONAL STUDENTS: All non-U.S. citizens are required to see me in person at the earliest or contact the International Student Advisor for further advice to complete the Federal Requirements.

SECTION 504 OF THE AMERICANS WITH DISABILITIES ACT COMPLIANCE: University is fully committed to complying with all requirements of the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. In class accommodations may be provided to students with a documented physical or learning disability. It is in the student's best interest to request accommodations within the first week of classes, understanding that accommodations are not retroactive. To obtain accommodations or to receive more information please contact the Office of the Director of Compliance and Disability Services at 757-727-5493 or visit the office located in Wigwam Building, Room 212.

POLICY ON ACADEMIC DISHONESTY: The Honor Policy in this course is in accordance with the University Honor Code of Conduct and the Official Student Handbook.

PENALTIES FOR ACADEMIC DISHONESTY: A student caught plagiarizing a paper and/or cheating on an exam which forms a part of a course grade, shall be given an "F" for the assignment and/or class and will be subject to dismissal from the University.

A student is considered cheating if, in the opinion of the instructor, the student gives, seeks, or receives aid during a test, quiz, or any other graded assignment. All cases of cheating will be reported by the professor to the chair of the Mathematics Department, to the Dean of School of Science. and to the Provost.

BIBLIOGRAPHY: Not Applicable.

OTHER IMPORTANT DATES:

August 29	Class Start.
September 2	End of Add and Drop Period.
September 5	Labor day.
October 17-21	Mid-Semester Evaluations.
October 10-November 4	Early Registration for Spring Semester.
November 4	End of period to withdraw from a class with records showing “withdrew passing” or “withdrew failing.”
November 23	Thanksgiving Break Begins-No Class.
November 28	Class resume from Thanksgiving Break.
December 9	End of classes.
December 10	Reading Day.

DISCLAIMER: This syllabus is intended to give the student guidance in what may be covered during the semester and will be followed as closely as possible. However, the professor reserves the right to modify, supplement and make changes as the course needs arise."

MATHEMATICS DEPARTMENT RULES FOR THE COMMON FINAL EXAMINATION:

1. University's honor code applies during the examination period.
2. Students must bring their HU student (picture) ID and keep it displayed during the examination period.
3. Students must adhere to the seating assignment.
4. No student will be allowed to enter the examination room 30 minutes after the scheduled starting time of the exam.
5. Students should bring only items that are essential and must avoid bringing large pocket books, large purses, books, book bags, notes, etc. Books and book bags will not be allowed at your desk in the exam room. If you bring any of these things, you will be asked to leave them in the front of the room.
6. Students must keep all answer sheets flat on the writing surface.
7. Students must avoid all behaviors that may be regarded as transferring information; this includes “thinking aloud,” moving of the lips and gazing at another's paper.
8. Students should satisfy their physiological needs before the examination period begins.
9. Students should indicate a question or need during the examination by raising a hand.
10. Students will not be allowed to transfer calculators, pens, pencils, etc. during the exam period.
11. Students are expected to follow the direction of the proctors during the exam. For example, do not begin the exam until directed to do so, stop when time is called.
12. Graphing calculators may be used in those sections designated graphing calculators. All sections of Math 117, 118, 130 and 205 are graphing calculator sections. However, TI 89/92/92 plus or calculators with similar functionality are not permitted on this examination. All allowable calculators (basic, scientific and graphing) must have the covers removed and put away prior to the start of the exam.
13. Use of cell phones, pagers, digital/electronic recording, or playing devices is prohibited during the final. The use of any texting or web capable device is prohibited during the exam. Only paper provided by the instructor is to be used during the exam.
14. Don't bring food, water bottles, etc. to the exam!
15. All allowable calculators (basic, scientific and graphing) must have the covers removed and put away prior to the start of the exam.
16. The use of any texting or web capable device is prohibited during the exam.
17. Only paper provided by the instructor is to be used during the exam.
18. TI 89/92/92 plus or calculators with similar functionality are not permitted on this examination.

THE HAMPTON UNIVERSITY CODE OF CONDUCT: Joining the Hampton Family is an honor and requires each individual to uphold the policies, regulations, and guidelines established for students, faculty, administration, professional and other employees, and the laws of the Commonwealth of Virginia. Each member is required to adhere to and conform to the instructions and guidance of the leadership of his/her respective area. Therefore, the following are expected of each member of the Hampton Family.

1. To respect himself or herself.
2. To respect the dignity, feeling, worth, and values of others.
3. To respect the rights and property of others and to discourage vandalism and theft.
4. To prohibit discrimination, while striving to learn from differences in people, ideas, and opinions.
5. To practice personal, professional, and academic integrity, and to discourage all forms of dishonesty, plagiarism, deceit, and disloyalty to the Code Conduct.
6. To foster a personal professional work ethic within the Hampton University Family.
7. To foster an open, fair, and caring environment.
8. To be fully responsible for upholding the Hampton University Code.