

MATH 108: University Mathematics I-B

Summer 2022 Course Syllabus

NJIT Academic Integrity Code: All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: Linear functions, equations, inequalities, systems of linear equations, quadratic equations, polynomials, rational expressions, expressions involving radicals, partial fraction decomposition, conic sections. Effective From: Summer 2013

Number of Credits: 4

Prerequisites: None.

Course-Section and Instructors:

| Course-Section | Instructor |
|----------------|----------------------|
| Math 108-FTF | Professor J. Arnette |

Office Hours for All Math Instructors: [Office Hours and Emails](#)

Required:

| | |
|-----------|--|
| Title | <i>Precalculus: A Right Triangle Approach</i> *must have online access for required homework |
| Author | Ratti and McWaters |
| Edition | 4th |
| Publisher | Pearson |
| ISBN # | 978-0134851013 |

University-wide Withdrawal Date: Please see the [Summer 2022 Academic Calendar](#) for the last day to withdraw based on the summer session you are registered for.

POLICIES

DMS Course Policies: All DMS students must familiarize themselves with, and adhere to, the **Department of Mathematical Sciences Course Policies**, in addition to official **university-wide policies**. DMS takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

| | |
|-----------------------|-----|
| Exam 1 | 20% |
| Exam 2 | 20% |
| Quizzes | 15% |
| Online Homework | 15% |
| Final Cumulative Exam | 30% |

Your final letter grade will be based on the following tentative curve.

| | | | |
|----|----------|---|---------|
| A | 90 - 100 | C | 70 - 74 |
| B+ | 85 - 89 | D | 60 - 69 |
| B | 80 - 84 | F | 0 - 59 |
| C+ | 75 - 79 | | |

Attendance Policy: Attendance at all classes will be recorded and is **mandatory**. Please make sure you read and fully understand the **Math Department's Attendance Policy**. This policy will be strictly enforced.

Homework: Students will be expected to complete online homework for each section.

Exams: There will be three exams during the semester and a cumulative final exam:

| | |
|-----------------|-----------------|
| Midterm Exam I | July 20, 2022 |
| Midterm Exam II | August 3, 2022 |
| Final Exam | August 15, 2022 |

The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the **Math Department's Examination Policy**. This policy will be strictly enforced.

Makeup Exam Policy: There will be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam will be missed.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: [Summer 2022 Hours](#))

Accommodation of Disabilities: The Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Scott Janz, Associate Director of Disability Support Services at [973-596-5417](tel:973-596-5417) or via email at scott.p.janz@njit.edu. The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources and Services office authorizing your accommodations will be required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Office of Accessibility Resources and Services (OARS) website at:

<https://www.njit.edu/studentsuccess/accessibility/>

Important Dates (See: [Summer 2022 Academic Calendar](#), [Registrar](#))

| Date | Day | Event |
|-----------------|-----------|--|
| July 4, 2022 | Monday | Independence Day - Holiday Observance/No Classes |
| July 5, 2022 | Tuesday | FTF Session Begins |
| July 6, 2022 | Wednesday | Last Day to Add/Drop for FTF Session |
| August 15, 2022 | Monday | Last Day of FTF Session |

Course Outline

| Day | Sections | Topic | Assignment |
|-----|----------|--|---|
| 1 | | Introduction to Math108 | |
| | P1 | Real Numbers & Their Properties (During Rec.) | P1: ex. 82, 84, 86, 116, 122, 126, 128, 130, 140 |
| | P2 | Integer Exponents | P2: ex. 18 20, 24, 28, 32, 36, 38, 42, 48, 50, 58, 66, 72, 76 |
| | 1.1 | Linear Equations in One Variable | 1.1: ex. 9-13, 23-25, 53, 63, 76 ex 1.1: ex. 37-47, 77, 82-83 |
| 2 | P6 | Rational Exponents and Radicals: Square Roots only | P6: ex 25, 31, 51, 61, 69, 71 |
| | P4 | Polynomials | P3: ex. 15-23, 31, 39, 54, 72 |

| | | | |
|----|-----|--|--|
| | P3 | Factoring | P4: ex. 23, 25, 28, 31, 52, 54, 55, 61, 65, 94-106 even |
| 3 | 1.3 | Quadratic Equations: Factoring, Quadratic Formula, Completing the Square | 1.3: ex. 9-15, 21, 25, 47, 53-63 odd, 91, 95 1.3: ex. 19, 31, 39, 43, 67-77 odd, 93, 97 |
| | 1.4 | Complex Numbers (During Rec.) | 1.4: ex. 11-33 odd, 41-51 odd |
| 4 | P5 | Rational Expressions | P5: ex. 24, 34, 36, 47, 53, 58, 69, 73, 83 |
| | 8.1 | Systems of Equations | 8.1: ex. 59-75 odd 97, 99, 101 |
| 5 | 1.5 | Solving Other Types of Equations | 1.5: ex. 17-20, 27-37 odd, 41-55 odd, 61, 67, 69, 75, 77 |
| | 1.6 | Inequalities | 1.6: ex. 12, 20, 24, 32, 51, 57, 59, 65-77 odd, 95-105 odd |
| 6 | 1.7 | Absolute Value Equations and Inequalities | 1.7: ex. 11, 13, 23, 25, 33, 53-59 odd, 77 |
| | | Catch up & Exam #1 Review: 7/18 | |
| 7 | | EXAM #1: 7/20 | |
| 8 | 2.1 | The Coordinate Plane | 2.1: ex. 15-23 odd, 35, 37 |
| | 2.2 | Graphs | 2.2: ex. 25, 35, 37-46, 53, 57, 67, 70, 81, 83, 89 |
| | 2.3 | Lines | 2.3: ex. 9, 13, 27, 36-46 even, 79-87 odd, 94 |
| 9 | 2.4 | Functions | 2.4: ex. 9, 12, 15, 20, 32, 43, 51-54, 70 |
| | 2.5 | Properties of Functions | 2.5: ex. 9-16, 35-39 odd, 57-67 odd, 108, 109 |
| 10 | 2.6 | Library of Functions | 2.6: ex. 9, 11, 17, 31, 35, 41 |
| | 2.7 | Transformations of Functions | 2.7: ex. 9-19 odd, 23-34, 41, 63, 69, 75-82, 101, 105 |
| 11 | 2.8 | Combining Functions; Composite Functions | 2.8: ex. 9-12, 17, 23, 32, 39, 47, 49, 62, 67, 69, 73, 76, 77 |
| | 2.9 | Inverse Functions | 2.9: ex. 15, 17, 25, 29, 33, 55, 57, 67-77 odd |
| 12 | 3.1 | Quadratic Functions | 3.1: ex. 9-16, 21, 29, 31, 51, 55 |
| | | Catch up & Review for Exam #2 :8/1 | |
| 13 | | EXAM #2: 8/3 | |
| 14 | 3.2 | Polynomial Functions | 3.2: ex. 9-14, 29-34, 37, 87 |
| | 3.3 | Dividing Polynomials: Long Division | 3.3: ex. 9-19 |
| | 3.3 | Dividing Polynomials: Synthetic Division | 3.3: ex. 17-29 odd, 35-41 odd |
| 15 | 3.6 | Rational Functions | 3.6: ex. 9-26, 35-51 odd, 53-59, 67, 71 |

| | | | |
|----|------|--|---|
| | 10.2 | Parabolas | 10.2: ex. 17, 21, 23, 27, 29, 31, 41-47 odd |
| 16 | 10.4 | Hyperbolas | 10.4: ex. 17-27 odd, 43-53 odd, 69, 71, 73 |
| | 3.7 | Variation | 3.7: ex. 9-13, 29-41 odd |
| 17 | | Catch up & Review for Final Exam: 8/12 | |
| 18 | | FINAL EXAM: 8/15 | |

Updated by Professor Arnette - 06/24/2022
Department of Mathematical Sciences Course Syllabus, Summer 2022