SUFFOLK UNIVERSITY
MADRID CAMPUS

MATH 128 – MATH FOR THE MODERN WORLD

Instructor Information:

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Course Information:

Catalog Description: From the ISBN on a book, to buying a car, from the size of small chips in a cell phone, to the size of the national debt, or just reading a graph in the daily newspaper, mathematics plays an important and vital role in countless areas of life and your future career and courses included. Mathematics is both an art and a tool created by humans. The common bond is a way of thinking and a way of reasoning to describe and solve problems of many types. This course uses the context of modern real life problems to introduce math needed for literacy and problem solving in contemporary life and work. It uses a minimal amount of algebra and focuses on math models, concepts and basic math manipulations. It encourages students to move from anxiety about math, to using formulas well, to thinking critically in the math context to use math to solve problems and pose new problems. Topics include scientific notation, basic financial math, linear, exponential and polynomial models and an introduction to probability.
Prerequisites: MATH level 2, or Mathshop, or MATH-104.
Credit Hours: 4

This course follows the US Federal Government's Credit Hour definition: "An amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutional established equivalence that reasonably approximates no less than:

(1) One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or
(2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

For full up-to-date statement:
https://cihe.neasc.org/sites/cihe.neasc.org/files/downloads/POLICIES/Pp111_Policy_On_Credits-And-Degrees.pdf

To complete this course, students will need to dedicate, at a minimum, the following amount of time to the listed activities:

Assignments/Activities	Engagement Estimate	Engagement Hours
Primary Source Readings	170 pages x 10 minutes per page	28
Homework Exercises	19 sets x 1.5 hour per section	29
Quiz Preparation	9 quizzes x 45 minutes per quiz	7
Test Preparation	2 tests x 15 hours per test	30
Midterm and Final Prep.	2 exams x 15 hours per exam	30
Class Attendance	3 hours x 15 weeks	45
Recitation sessions	45 minutes x 15 weeks	11
Project (Optional)	20 hours	(20)
TOTAL		**180-200 HOURS**

Textbook/Course Materials:

The text is the Cook-Eisenberg Lecture Notes. It will be available for download on the class blackboard site. A scientific or TI graphing calculator is required, which must be brought to every class meeting. The TI 84 calculator is the most advanced calculator than can be used in exams. Questions about how to use calculators will not be answered during quizzes or exams. Ask them earlier in class or office hours!

Course Goals & Learning Objectives:

Upon successful completion of this course, students will	Upon successful completion of this course, students will be able to	How the student will be assessed on these learning objectives:
• Understand descriptive, quantitative information and data given in a variety of formats.	• Translate between algebraic and graphical representations. • Translate between English sentences and mathematical equations. • Translate between English sentences and graphs.	• homework assignments • test 1 • midterm exam
• Understand the foundations (at the college level) of how to employ the thinking skills of scientific and mathematical analysis to solve problems.	• Evaluate the quality of information and assess its sufficiency for decision-making. • Choose mathematical techniques that apply to various situations.	• homework assignments • midterm exam • final exam
• Know basic mathematical skills needed to work with quantitative information.	• Use formal systems, procedures and sequences of operations correctly. • Select appropriate variables, functions and formulae and use them correctly. • Demonstrate accuracy, including precise language and careful definitions. • Manipulate with linear equations. • Graph equations. • Recognize linear, exponential and polynomial models.	• homework assignments • test 1 and 2 • final exam
• Know how to draw, analyze and convey meaningful quantitative conclusions.	• Think about the validity of answers drawn from calculation. • Looks for and corrects errors in calculations and assumptions in own work as appropriate. • Reflect on effects of changing parameters in problems. • Write English sentences that convey mathematical conclusions.	• project • final exam

Upon successful completion of this course, students will	Upon successful completion of this course, students will be able to	How the student will be assessed on these learning objectives:
• Be open to dealing with quantitative material in life and other courses.	• Report some positive feelings about math • Choose a real life problem. • Translate problem to a mathematical problem. • Solve the problem using mathematics • Translate to a solution to the life problem • Convey in writing the solution to the problem.	• project • entrance/exit questionnaires

Assignments/Exams/Papers/Projects:

Students will be evaluated in the following areas: Homework assignments, class participation, weekly quizzes, an optional project, two tests, a midterm exam and a final exam. See below the percentage weight for each.

Grading/Evaluation:

There is a continuous evaluation based on your participation, homework presented, quizzes and examinations. See the semester schedule below for more information. The following percentages indicate how the final grade is calculated. The actual percentages applied vary from student to student–within the given ranges below. The percentages applied in each case will be those which give the highest grade.

Homework, quizzes and class participation	10% to 25%
Tests and project	25% to 40%
Midterm and Final Exams	40% to 55%

For example, a student with scores of 98, 84, and 92, respectively, in the above three areas will have percentage weights of 25%, 25% and 50%, but another student with scores of 80, 85, and 92 will have weights of 10%, 35% and 55%.

Class participation. In order to earn full class participation grade you must come prepared to class by having done the homework and engage during the class by solving problems on the board, asking questions, and participating actively in the proposed activities. *You may discuss homework with other students and with your tutor who can help you work similar problems, but the answers you submit should be your own.*

PARTICIPATION RUBRIC

POINTS	WHAT YOU NEED TO DO TO GET THOSE POINTS
5	Be punctual; have the homework written down in a separate paper (not in the textbook); have class materials ready–book, notebook, calculator; engage actively in class; be attentive; have your phone switched off and out of sight; don't chat; don't leave the classroom.
4	All of the things above granting 5 points, except one of them
3	All of the things above granting 5 points, except two of them
2	All of the things above granting 5 points, except three of them
1	None of the things above granting 5 points
0	You did not attend class

Quizzes. There will be a short quiz weekly with questions similar to homework problems. You may not use your book during quizzes; however, you may use your own handwritten notes.

Tests. The tests cover a fair amount of material. Review all the homework and study well previous quiz questions to prepare for them. You may not use your book or notes during tests. If you obtain a good score on a test, you can use it to replace the part of the midterm or final exam that covers the material in that test.

Project. Please come to Office Hours to discuss the topic and get guidance if you want to embark on a project. Then meet deadlines for full grade. The project is optional, you do not have to do it, but the decision to do it must be made early in the semester, see schedule below.

PROJECT RUBRIC

PERCENT	GRANTED FOR
20%	Meeting all deadlines: Topic choice, first draft, and final draft
20%	Appropriateness of topic, chosen in consultation with the instructor, and sticking to it
20%	Quality and completeness in the first draft
20%	Final draft, in particular incorporating changes suggested by instructor
20%	Class Presentation

Midterm and Final. The midterm and final exams together cover all course material. The final exam is not cumulative, since it only covers the material given after the midterm exam. They will not be handed back but kept by the professor or the university.

Grading scale:

Percentage	Grade	Percentage	Grade	Percentage	Grade
93-100	A	79-82	B-	63-66	D+
90-92	A-	75-78	C+	59-62	D
87-89	B+	70-74	C	55-58	D-
83-86	B	67-69	C-	54 or less	F

Course and Classroom Policies:

Each topic will be covered in the classroom through lecturing or collaborative learning, using examples and illustrations. After new material has been presented, homework exercises corresponding to this material should be attempted and presented in the next class. Sometimes you will be asked to study a lesson at home on your own–flipped class–and then do homework in class. Homework corrections of the most challenging exercises will be shared by the professor or students who can solve them. The homework must be presented in the classroom the day it is due to earn credit for it.

The level of difficulty and type of exercises that you are asked to solve in exams are very similar as you find in the homework from the textbook. Thus, it is essential that you study the textbook and familiarize yourself with it. There will not be make-up exams, although a justified absence in an exam will allow you to recuperate it during the midterm or final exam. To encourage daily study of the material, short quizzes covering the homework assignments will be given weekly. If you miss a quiz due to a justified reason, you are encouraged to come to Office hours to do a make-up, but always before the next test or exam.

For students having difficulties with the material or falling behind the rhythm of the class, it is crucial to use office hours to recuperate. The teacher is always available for consultation, do not hesitate to approach with a difficulty, small as it may seem.

Punctuality:

Students must be punctual for classes. If a student arrives repeatedly late (5 minutes or more), the professor may refuse entry and mark him/her absent.

Cellular phones, being ready for class:

Before you enter the classroom, be sure you have solved all your businesses so that you do not have to leave in the middle of the class, which is always an undesirable interruption. That includes taking care of all your physiological needs, bringing your own calculator, and a Kleenex or similar if you are having a cold and switching off your cellular phone. Thanks for your cooperation!

Any student who uses his/her cellular phone during class will be asked to leave the class immediately and will not be allowed to return.

Food and drinks:
Students may consume water during class but no other kind of drinks and no food may be brought to class. Students may not leave the classroom to get water, but should bring it at the beginning of the class. Just come prepared so that you do not have to leave the class.

Assignments/Exams/Papers/Projects:
Students will be evaluated in the following areas: daily homework assignments, weekly quizzes, two noncumulative tests, four short projects, a midterm exam, and a final exam.

Participation/Attendance Policy:
The SUMC Student Handbook states the following:

Once a student is registered for a course, attendance at every meeting of every class is expected, including those held in the first week of the semester. A maximum of two unjustified absences is permitted. Each additional absence will cause the final course grade to be lowered by one-third of a letter grade, i.e., from A to A-; A- to B+; B+ to B, etc.

Excessive absences in a course will have a negative effect on the final grade. When a student is absent, the quality of his or her work in a course will deteriorate since material missed in class sessions can rarely be made up satisfactorily, even though the student remains responsible for that work.

Please note that even when a student has a justified reason for missing class, such as illness, the negative academic impact on learning will be the same as if the absence were for spurious reasons.

In this course, any absence due to illness should be justified by a note from the student's physician or other health professional confirming the day(s) on which the student was unable to attend class. This note should be presented the class following the absence or the following week at the latest. Written justifications will not be accepted afterwards. Medicine prescriptions or plane tickets are not valid justifications.

If a justified absence occurs in an examination day, the make-up will occur during the midterm or final exam, or the make-up days assigned for these.

Students are responsible for all material and assignments for the days missed, regardless of the reason for the absence. Students are also expected to pay attention in class and to participate in classroom activities, such as solving problems in group or presenting them on the board to the other students.

In the event that a class meeting is unexpectedly cancelled, students will be expected to continue with readings or other assignments as originally scheduled. Any assignments due or class activities (e.g., a quiz, exam or presentation) planned for such a cancelled class are due at the next class meeting unless other instructions are communicated.

Disability Statement:
If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in my classroom.

If formal, disability-related accommodations are necessary, it is very important that you be registered with the Office of Disability Services (ODS) at the main Campus in Boston so that I am notified of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. Check the ODS web site at www.suffolk.edu/disability for information on accommodations.

Student Resources

SUMC provides a range of student services, both academic and personal. To learn more about course-related tutorials and academic workshops, refer to the SUMC Student Handbook, Section 2 "Academic Policies and Services". Section 5, "Living in Madrid", contains information on the medical and mental health resources, including an English-speaking therapist, available to you.

Midterm Review

At midterm, around week 6, you will be given a midterm grade based on your progress to date and performance on assignments, quizzes and midterm exam. Midterm grades of C- or below will be reported to the Madrid Campus Academic Standing Committee, with an explanation of what I believe has contributed to that grade: excessive absences, poor time management or study skills, lack of effort, difficulty with the course material or with writing or language skills, etc. The Academic Standing Committee or I may contact you to suggest strategies for addressing these difficulties, which may include mandatory participation in Math Tutorials. I strongly encourage you to visit me during my office hours so we may discuss how you can be successful in this class.

Academic Misconduct:

www.suffolk.edu/about/mission-history/policies-procedures/academic-misconduct-policy

Suffolk University expects all students to be responsible individuals with high standards of conduct. Students are expected to practice ethical behavior in all learning environments and scenarios, including classrooms and laboratories, internships and practica, and study groups and academic teams. Cheating, plagiarism, unauthorized collaboration, use of unauthorized electronic devices, self-plagiarism, fabrication or falsification of data, and other types of academic misconduct are treated as serious offenses that initiate a formal process of inquiry, one that may lead to disciplinary sanctions.

Student work will be thoroughly examined for academic integrity and may be scanned using plagiarism detection software. A faculty member suspecting academic misconduct will contact the student using the Suffolk email address to schedule a meeting and will make all effort to do so within five business days of detecting the incident. During the meeting, the faculty member will present the documentation that led to suspected academic misconduct. Resolution of the incident will be according to the procedures outlined in the SUMC Student Handbook.

Academic Grievances Policy:

www.suffolk.edu/student-life/student-services/student-handbook/university-policies-for-student-cas-sbs/grievances-academics

Course Schedule:

Month	**Topic Covered and Main Activity**	**Homework & Other Assignments**
January	Introductions, Order of Operations & Scientific Notation (Chapters 1– 3: Introduction, Some Basic Math Needed for This Course, Scientific Notation: Large & Small Numbers)	
	Scientific Notation, part II (Chapter 3–Multiplying in Scientific Notation) **Quiz 1**	Homework 1: Basic Math, Order of Operations, Scientific Notation Translation
	Personal Finance/Simple Interest Rates (Chapter 4–Introduction, Terminology, Simple Interest)	Homework 2: Scientific Notation Computations

Month	Topic Covered and Main Activity	Homework & Other Assignments
	Personal Finance/Compound Interest Rates (Chapter 4–Compound Interest) **Quiz 2**	Homework 3: Simple Interest
	Personal Finance/Credit Cards (Chapter 4–Finance Charges)	Homework 4: Compound Interest
February	Personal Finance/Credit Cards (Chapter 4–Calculating Payment Amounts) **Quiz 3**	Homework 5: Finance Charges
	Review	Homework 6: Calculating Payment Amounts
	Test 1	
	ISBN Numbers (Chapter 5–Introduction, Congruence Mod n and Its Use, ISBNs)	
	UPC Numbers (Chapter 5–UPCs) **Quiz 4**	Homework 7: ISBN Numbers
	Credit Card Numbers (Chapter 5 –Credit Card Numbers)	Homework 8: UPC Numbers
	Midterm Exam	Homework 9: Credit Card Numbers
	Movie or another activity	***Project topic must have been discussed and decided by today***
March	***SPRING BREAK***	
	Functions and Modeling: Introduction (Chapter 6–Functions)	
	Functions and Modeling: Linear Growth and Decay, part I (Chapter 6–Linear Models)	Homework 10: Graphing and Evaluating Functions
	Functions and Modeling: Linear Growth and Decay, part II (Chapter 6–Linear Models) **Quiz 5**	Homework 11-I: Working with Linear Models
	Functions and Modeling: Exponential Growth and Decay, part I (Chapter 6–Exponential Models)	Homework 11-II: More Applications of Linear Models
	Functions and Modeling: Exponential Growth and Decay, part II (Chapter 6–Exponential Models) **Quiz 6**	Homework 12-I: Working with Exponential Models
	Probability: Terminology **apter 7–Introduction to Probability)**	Homework 12-II: More Exponential Models
April	Probability: Charts **apter 7–Probability from Charts)** **Quiz 7**	Homework 13: Probability Terminology
	ew	Homework 14: Finding Probabilities from Charts
	2	

Month	Topic Covered and Main Activity	Homework & Other Assignments
	Probability: Equally Likely Events **apter 7–Equally Likely Events. Union, Intersec plement of Events)**	***Project first draft is due today***
	Probability: Venn Diagrams **apter 7–Union, Intersection & Complement of Eve 8**	Homework 15: Finding Probabilities of Events
	Probability: Independent Events. **apter 7–Independent and Mutually Exclusive Eve ect presentations begin**	Homework 16: Finding Probabilities with Venn Diagrams
	Final exam preparation **ect presentations end**	Homework 17: Finding Probabilities for Independent Events ***Project final draft is due today***
	Final Exam	

Important: *The schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, or to ensure better student learning.*