MATH 012 7982 Intermediate Algebra (2188)

MATH-012

Fall 2018   Section 7982   3 Credits   10/22/2018 to 12/16/2018

👤 Faculty Contact

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🖥 Course Description

(Not open to students who have already successfully completed a higher-level mathematics course. Does not apply toward degree requirements. Yields institutional credit only.) Prerequisite: MATH 009 or an appropriate result on the placement test. A study of problem-solving techniques in intermediate-level algebra. The goal is to demonstrate number sense and estimation skills; interpret mathematical ideas using appropriate terminology; manipulate, evaluate, and simplify real-number and algebraic expressions; and translate, solve, and interpret applied problems. Emphasis is on numbers and algebraic properties, graphing skills, and applications drawn from a variety of areas (such as finance, science, and the physical world). Topics include polynomials; factoring; exponents and their notation; rational expressions and equations; rational exponents and radical expressions; linear, quadratic, and other equations; and inequalities. Students may receive credit for only one of the following courses: MATH 012, MATH 101, MATH 101M, MATH 102, MATH 102M, MATH 199A, or MATH 199M.

⊙ Course Introduction

MATH 012 is a developmental algebra course designed to equip you with a basic mathematical proficiency and perspective needed in today's world. Principles introduced in MATH 009: Introductory Algebra will be expanded and further developed. Within this developmental framework, there will be a focus on understanding mathematical principles and developing skills in simplifying algebraic expressions and solving equations. Graphing will be used as a tool for enhancing understanding of mathematical principles. Additional topics will be incorporated to provide the necessary foundational knowledge for you to successfully complete MATH 106: *Finite Mathematics* or MATH 107: *College Algebra.*

📊 Course Outcomes

After completing this course, you should be able to

- describe, discuss, and interpret mathematical ideas, using appropriate terminology and symbols to solve intermediate algebra problems
- demonstrate number sense, estimation skills, and understanding of appropriate use of a scientific calculator to solve intermediate algebra problems
- manipulate, evaluate, and simplify real-number and algebraic expressions, using axioms, properties of real numbers, rules of exponents, operations on polynomials, rational expressions, and radical expressions to strengthen problem-solving skills
- solve linear equations and inequalities, quadratic equations, and equations involving rational and radical expressions
- graph linear, absolute-value, and elementary quadratic functions, and write equations of linear functions
- use mathematical modeling to translate, solve, and interpret applied problems, including those involving linear and quadratic functions, direct and inverse variation, and compound interest

📕 Course Materials

Click to access your course materials information (http://webapps.umuc.edu/UgcmBook/BPage.cfm?C=MATH%20012&S=7982&Sem=2188)

⚙ Class Guidelines

Preparation

To succeed in an 8-week mathematics course, it is important to complete all assignments on time. Print out a copy of the Course Schedule and keep it in a place where you can consult it daily. Late work will be accepted only in cases of documented emergency.

Turn in your material on time. The syllabus is clear that no material will be accepted late. If you have a thing happening, let me know ahead of time. I can plan; you can plan; we'll both be much happier.

Classroom Management

Don't edit your posts in discussion sessions. After I see your post, it gets marked as read. If you go in and edit it, it doesn't show up as new again. So I never know you posted something new! And it won't get graded.

Log into our online classroom regularly to read news, participate in discussions, and post questions. After posting work in a discussion, check back into the discussion to read comments and make any necessary revisions.

Questions and thoughts of general interest to the class should be posted in the "Ask the Professor" or "Student Lounge" discussions. For questions pertaining to your own work in the course, please send an e-mail with our course name in the subject line.

If you need help or get lost, let me know. I have a lot of resources I can send you that will get you through this. But if you're lost, you gotta tell me where you last knew where you were. If you send me an email that just says "I am lost, help, I don't know what to do," I will have no idea where you are or how to find you. It's just like being lost in the real world. So when you do get lost, tell me exactly where you are or, if you can't, what's happening and how you got there. It will make it a lot easier on both of us.

Preferred Contact Method

Don't use the send a message feature in LEO. It goes to spam too frequently. Use your own email service and send a message to jphoward@faculty.umuc.edu. It will buzz my phone. I am unlikely to respond until the end of the day or even the next. But I will probably see it quickly.

Supplemental Materials

None.

✔ Grading Information

You are responsible for the following graded items:

Component	Weighted Percentage
LEO Participation	16
Five quizzes (8% each)	40
Midterm Exam	20
Final Exam	24
TOTAL	**100**

To calculate your final course grade, you may use this formula: 0.16 (percentage score on participation work) + 0.40 (average of percentage scores on quizzes) + 0.20 (midterm exam percentage) + 0.24 (final exam percentage score).

The work you are required to do in this course consists of

- weekly reading assignments
- homework for practice
- participation
- quizzes/exams
- a final examination

These course components are described below.

Weekly Reading Assignments

Even though there is no numerical score associated with the weekly reading assignments, how well you do in the course depends heavily on how conscientiously you follow the reading assignments.

When doing the reading for this course, you need to **_slow down!_**

Reading mathematics is not like reading anything else. You need to look carefully at the numbers and formulas and spend time making sure you understand them and that they make sense. Reading any mathematical text can take three to four times longer, per page, than reading a nonmathematical text.

Homework

There are homework assignments each week. The homework assignments give you practice in solving problems associated with each week's topics. Your aim should be mastery of all concepts, and you will be given opportunities to succeed in solving all of the problems every week. As completing the homework problems on time will help you understand and master the topics, plan your weeks according to the schedule.

Homework will not be collected. The best way to learn mathematics is to do mathematics, so your homework practice will be valuable preparation for participation, quiz, and exam work.

Online Participation

For individual participation on an ongoing basis, there is a collection of participation topics posted in weekly LEO discussions, drawn primarily from the even-numbered exercises in your textbook. For participation credit, over the eight weeks of the term, you are expected to solve eight topics (from different textbook sections). You are free to choose any topic, complying with the discussion instructions, provided someone else has not already attempted it or "reserved" it.

For each participation topic, you will earn up to 5 participation points for the accuracy of your solution. You may be given opportunities to attempt your solution more than one time. If you make an error, you may get feedback and a chance to edit your work and resubmit it. The goal of online participation and problem solving is to help you understand the concepts and to give you an opportunity to practice solving problems and get feedback from me.

Online participation work is to be posted in LEO discussions. Participation work submitted by other means will not be accepted.

You may earn a total of 40 online participation points (8 topics at 5 points each is the maximum for regular participation credit).

Quizzes and Midterm Exam

Quizzes and exams are important milestones, as they provide valuable feedback for instructors and students. Quizzes and the midterm exam are open book and will be given as indicated in the schedule.

You will be given one week to work on each quiz and the midterm exam, and the due dates of the quizzes and exams can be found in the schedule. Each quiz and exam will be posted as an Assignment at the beginning of the designated academic week, and each will be due at the end of that academic week. Quizzes and the midterm exams may be submitted in plain-text format, as attached files such as Microsoft Word documents, or as handwritten and scanned documents.

Makeup quizzes and exams are not available **except** in cases of documented emergency.

Final Examination

All sections of this course have a required final examination, administered in a 72-hour period during Week 8, the last week of the course.

The final exam is open book and includes multiple-choice and short answer questions. ***However, you are required to show your work and calculations in order to receive full credit.***

The final exam must be individually completed and represent your own personal work. Neither collaboration nor consultation with others is allowed.

The solutions for the final examination will not be posted.

You are expected to take the exam as scheduled. In the event of illness or extraordinary circumstances, you must contact your faculty member and provide documentation to request an exception and approval to take a makeup exam. If the request is not approved, the exam grade will be recorded as a zero.

Additional Information

Late Policy

Meeting course deadlines is crucial for success in computer-mediated courses. You may read at your own pace, but participation, quizzes, and projects must adhere to the timetable given in the schedule. Otherwise the grade will be zero. No late participation, quizzes, or exams will be accepted.

Guideline for Receiving Tutoring Services

We appreciate that many students may seek tutoring services to supplement our instructional program. However, tutors may not be used to complete any portion of assignments, projects, quizzes, and exams on behalf of students. Students are expected to submit their own work. Students who are suspected of submitting the work of their tutors will be reported to the dean's office for potential investigation.

If you are to receive tutoring services, inform your tutor of this expectation and clarify your tutor's role and responsibility to your academic endeavors at UMUC.

☰ Project Descriptions

☛ Academic Policies

Academic Policies and Guidelines

ACADEMIC INTEGRITY

As a member of the University of Maryland University College (UMUC) academic community that honors integrity and respect for others you are expected to maintain a high level of personal integrity in your academic work at all times. Your work should be original and must not be reused in other courses.

CLASSROOM CIVILITY

Students are expected to work together cooperatively, and treat fellow students and faculty with respect, showing professionalism and courtesy in all interactions. Please review the Code of Civility for more guidance on interacting in UMUC classrooms: https://www.umuc.edu/students/support/studentlife/conduct/code.cfm (https://www.umuc.edu/students/support/studentlife/conduct/code.cfm).

POLICIES AND PROCEDURES

UMUC is committed to ensuring that all individuals are treated equally according to Policy 040.30 Affirmative Action, Equal Opportunity, and Sexual Harassment (https://www.umuc.edu/policies/adminpolicies/admin04030.cfm).

Students with disabilities who need accommodations in a course are encouraged to contact the Office of Accessibility Services (OAS) at accessibilityservices@umuc.edu (mailto:accessibilityservices@umuc.edu), or call 800-888-UMUC (8682) or 240-684-2287.

The following academic policies and procedures apply to this course and your studies at UMUC.

150.25	Academic Dishonesty and Plagiarism (https://www.umuc.edu/policies/academicpolicies/aa15025.cfm) – UMUC defines academic dishonesty as the failure to maintain academic integrity. All charges of academic dishonesty will be brought in accordance with this Policy.
	Note: In this course, your instructor has access to use **Turnitin.com**, a tool that helps to evaluate the originality of student work. Your instructor may use Turnitin or other resources to check the authenticity of your work and the accuracy of your use of sources. To learn more about Turnitin, the feedback it provides, and your options regarding the storage of your work in the Turnitin database go to the UMUC guides at umuc.edu/library/libresources/turnitin-students.cfm (https://www.umuc.edu/library/libresources/turnitin.cfm) and http://sites.umuc.edu/library/libresources/turnitin.cfm#studentcopyright (http://sites.umuc.edu/library/libresources/turnitin.cfm). If you have questions about academic integrity or how to cite your sources go to the UMUC Academic Integrity Resources page at http://www.umuc.edu/current-students/learning-resources/academic-integrity/resources.cfm (http://www.umuc.edu/current-%20students/learning-resources/academic-integrity/resources.cfm).
151.00	Code of Student Conduct (https://www.umuc.edu/policies/studentpolicies/stud15100.cfm)
170.40 170.41 170.42	The following policies describe the requirements for the award of each degree: Degree Completion Requirements for the Graduate School (https://www.umuc.edu/policies/academicpolicies/aa17040.cfm) Degree Completion Requirements for a Bachelor's Degree (https://www.umuc.edu/policies/academicpolicies/aa17041.cfm) Degree Completion Requirements for an Associate's Degree (https://www.umuc.edu/policies/academicpolicies/aa17042.cfm)
170.71	Policy on Grade of Incomplete (https://www.umuc.edu/policies/academicpolicies/aa17071.cfm) - The mark of I is exceptional and considered only for certain courses. Students who have completed 60% of their coursework with a grade of B or better for graduate courses or C or better for undergraduate courses and request an I before the end of the term. The mark of I is not available for noncredit courses.
170.72	Course Withdrawal Policy (https://www.umuc.edu/policies/academicpolicies/aa17072.cfm) - Students must follow drop and withdrawal procedures and deadlines available at https://www.umuc.edu/ (https://www.umuc.edu/) under Academic Calendar.

130.80	Procedures for Review of Alleged Arbitrary and Capricious Grading (https://www.umuc.edu/policies/academicpolicies/aa13080.cfm) – appeals may be made on final course grades as described herein.
205.06	Calculation Of Grade-Point Average (GPA) for Inclusion on Transcripts and Transcript Requests (https://www.umuc.edu/policies/academicpolicies/aa20506.cfm) – Note: Undergraduate and Graduate Schools have different Grading Policies (i.e. The Graduate School does not award the grade of D). See Course Syllabus for Grading Policies.

GRADING

According to UMUC's grading policy, the following marks are used:

	Undergraduate	**Graduate**
A	90-100	90-100
B	80-89	80-89
C	70-79	70-79*
D	60-69	N/A**
F	59 or below	69 or below
FN	Failure-Non attendance	Failure-Non attendance
G	Grade Pending	Grade Pending
P	Passing	Passing
S	Satisfactory	Satisfactory
U	Unsatisfactory	Unsatisfactory
I	Incomplete	Incomplete
AU	Audit	Audit
W	Withdrew	Withdrew

* The grade of "B" represents the benchmark for The Graduate School. Students must maintain a Grade Point Average (GPA) of 3.0 or higher. Classes where final grade of C or F places a student on Academic Probation must be repeated.
** The Graduate School does not award the grade of D.

COURSE EVALUATION SURVEY

UMUC values its students' feedback. You will be asked to complete an online evaluation toward the end of the term. The primary purpose of this evaluation process is to assess the effectiveness of classroom instruction in order to provide the best learning experience possible and make continuous improvements to every class. Responses are kept confidential. Please take full advantage of this opportunity to provide your feedback.

LIBRARY SUPPORT

Extensive library resources and services are available online, 24 hours a day, seven days a week at https://www.umuc.edu/library/index.cfm (https://www.umuc.edu/library/index.cfm) to support you in your studies. The UMUC Library provides research assistance in creating search strategies, selecting relevant databases, and evaluating and citing resources in a variety of formats via its Ask a Librarian service at https://www.umuc.edu/library/libask/index.cfm (https://www.umuc.edu/library/libask/index.cfm).

EXTERNAL LINK DISCLAIMER

This course may contain links to external sites neither owned nor maintained by UMUC. UMUC bears no responsibility for the accuracy, legality, or content of external sites or for that of subsequent links. In addition, the terms of use, security policies, and privacy policies may differ from those of UMUC. Contact the external site for answers to questions regarding its content, terms of use, and policies.

LEARNING MANAGEMENT SYSTEM SUPPORT

To successfully navigate the online classroom new students are encouraged to view the Classroom Walkthrough under Help in the upper right menu of the LEO classroom. Those requiring technical assistance can access Help@UMUC Support directly in LEO under the Help menu. Additional technical support is available 24 hours a day, seven days a week via self-help and live chat at https://www.umuc.edu/help (https://www.umuc.edu/help) or by phone toll-free at 888-360-UMUC (8682).

SYLLABUS CHANGES

All items on this syllabus are subject to change at the discretion of the Instructor and the Office of Academic Affairs.

🗓 Class & Assignment Schedule

All assignments are due at the end of the day (11:59 pm in the US Eastern time zone) on the specified dates. A world clock is found at: http://www.timeanddate.com/worldclock/ (http://www.timeanddate.com/worldclock/)

Students have access to a calendar tool on the course homepage within the classroom.

MATH 012 Course Schedule

Week	Assignments

1	**Week 1: Review of Real Number Operations and First Degree Equations**
	 (Oct 22 – Oct 28)
	
	 Read:
	
	 • Syllabus
	 • News
	 • Week 1 Learning Resources
	
	 Do:
	
	 • Homework
	 • Familiarize yourself with the Course Resources in LEO
	 • Week 1 Participation
	     ◦ Introductions
	     ◦ Communicating in the online math classroom
	     ◦ Week 1 Participation Discussion: **due 10/26**

2	**Week 2: Linear Inequalities and Graphing in the Coordinate Plane** **(Oct 29 – Nov 4)** **Read**: • Week 2 Learning Resources **Do**: • Homework • Week 2 Participation Discussion: **due 11/2/18** • Quiz 1 covering Week 1 course material: **due 11/4/18**
3	**Week 3: Exponents and Polynomial Expressions** **(Nov 5 – Nov 11)** **Read**: • Week 3 Learning Resources **Do**: • Homework • Week 3 Participation Discussion: **due 11/9/18** • Quiz 2 covering Week 2 course material: **due 11/11/18**
4	**Week 4: Factoring Polynomial Expressions and Solving Equations by Factoring** **(Nov 12 – Nov 18)** **Read**: • Week 4 Learning Resources **Do:** • Homework • Week 4 Participation Discussion: **due 11/16/18** • Midterm Exam, covering Weeks 1 – 3 course material: **due 11/18/18**
5	**Week 5: Rational Expressions** **(Nov 19 – Nov 25)** **Read**: • Week 5 Learning Resources **Do:** • Homework • Week 5 Participation Discussion: **due 11/23/18** • Quiz 3, covering Week 4 course material: **due 11/25/18**

6	**Week 6: Rational Exponents and Radicals** **(Nov 26 – Dec 2)** **Read:** - Week 6 Learning Resources **Do:** - Homework - Week 6 Participation Discussion: **due 11/30/18** - Quiz 4, covering Week 5 course material: **due 12/2/18**
7	**Week 7: Solving Radical Equations and Quadratic Equations** **(Dec 3 – Dec 9)** **Read**: - Week 7 Learning Resources **Do:** - Homework - Week 7 Participation Discussion: **due 12/7/18** - Quiz 5 covering Week 6 course material: **due 12/9/18**
8	**Week 8: Review and Final Exam** **(Dec 10 – Dec 16)** **Do:** - Review Homework - Week 8 Participation Discussion: **due 12/14/18** - **Final Exam (cumulative): due 12/16/18** The **Final Exam** will be available in **LEO** at 12:01 a.m. on Friday, **12/14/18**. The **Final Exam** is due at 11:59 p.m. on Sunday, **12/16/18**. It is comprehensive, open book and includes multiple-choice and short answer questions. However, you are required to show your work and calculations, where requested, in order to receive full credit. The final exam must be individually completed and represent your own personal work. Neither collaboration nor consultation with others is allowed. The solutions for the final exam will not be posted.