



Course Syllabus

Course #: MTH 1310 Course Name: Intermediate Algebra

Division: Arts & Sciences

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Class Days: Mon/Wed or Tues/Thurs Class Time:
Location: Classroom: Laboratory:
Credit Hours: 4 Contact Hours: 4 Lab Hours: 0 Lecture Hours: 4

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Instructor: Office Location:
Phone: Email Address:
Office Hours:
Division Office/Location: A202 Division Fax: 419.355.1248
Full-time Contact Person: Nina Schyllander Phone(s): 419.559.2307

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Course Description:

This course covers rational expressions and equations, rational exponents, complex fractions, complex numbers, variation, quadratic equations and inequalities, functions, and exponential and logarithmic functions. Graphing calculator required.

Prerequisite(s): Grade of "C" or better in MTH 0140 or Placement Testing

Corequisite(s): None

Entry Level Skills and Knowledge:

Basic mathematics and algebra skills.

Required Texts, Supplies and Equipment:

Beginning and Intermediate Algebra, Second Edition by John Tobey, Jeffrey Slater, and Jamie Blair. Published by Prentice Hall.

Hand-held Calculator: TI-83+ or TI-84+ required

Grading:

The final course grade will be determined as follows:

Table with 2 columns: Assessment Type and Percentage. Rows: Daily Grades (quizzes, homework, class participation, etc.) 25%, Tests 50%, Comprehensive Final Exam 25%

Grading scale is as follows:

90 – 100 = A

80 – 89 = B

70 – 79 = C

60 – 69 = D

0 – 59 = F

### **Learning Outcomes:**

General Education

Evaluate arguments in a logical fashion.

Technical Education

Course Outcomes:

Upon completion of this course, students should be able to perform these competencies:

1. Factor algebraic expressions.
2. Work complex fractions.
3. Add, subtract, multiply, and divide radicals.
4. Simplify radicals and exponential expressions.
5. Work with complex numbers.
6. Solve quadratic equations by factoring, completing the square, applying the square root property, applying the quadratic formula, and by calculator.
7. Work word problems that involve quadratic equations.
8. Understand the concept of relations and functions, functional notation, and inverse relations and functions.
9. Work problems involving direct, inverse, and joint variation.
10. Graph exponential and logarithmic functions.
11. Know the properties of logarithms (natural, common, and general).
12. Work exponential and logarithmic equations.

### **Assessment of Student Learning:**

This course may include a project that is one of several that will be used by faculty to assess student academic performance in the program. A panel of faculty will review all (projects or whatever assessment activity you are doing), then assess and summarize the academic performance of students at this point in the program. The results of this assessment will be shared among the department faculty, used to identify needed changes or improvements, and submitted to the Student Academic Assessment Committee as part of the college's overall student academic assessment effort.

Assessment Project and Measurement in course (if any):

**Plan of Work:**

Session	Date	Activities
See topical outline attached at back of this syllabus.		

**Course Requirements:**

There will be an assignment given each class period. This should be completed by the next class meeting and will be discussed at that time.

**Policies**

**Department Policies:** The schedule of tests will be followed as closely as possible. Not all of the course work is in the text. It is important to be in class and to take notes. Students are expected to read the text before class discussion.

Tests must be taken on the scheduled day. Failure to do so will result in a ten percent (10%) penalty. Make-up tests must be taken within one (1) week of the date that the test is given in class.

It is expected that the student will participate by having assignments completed on time, answering questions in class, asking pertinent questions, being on time, and having a cooperative attitude.

**Final Exam Policy:** The final exam is comprehensive. All students, regardless of grade average, must take the comprehensive final exam for this course.

**Course Withdrawing:** If for any reason you need to withdraw from this course, be certain that you do so according to College procedure. It is your responsibility to know and follow this procedure. If you simply stop coming to class, without officially withdrawing from the course, your grade is an automatic "F." Please follow official College procedure for withdrawing from this or any course.

*College Academic Policies are located in the College Catalog. A copy of the current catalog may be picked up in any of the division offices or admissions. The list of college policies is also available online at <https://www.terra.edu/register/Collegecat/policies.asp>.*

**Support Services:** The College offers a number of support services to assist in your success in this course and all courses. Among these services are the Writing & Math Center in B105, the Office of Learning Support Services, which coordinates the campus disability services and tutoring programs, the computer labs, and the computers in the atriums.

Any student who feels he/she may need an accommodation based on the documentation of a disability should contact the Office of Learning Support Services privately to discuss his/her specific issues. Please contact the OLSS at (419) 334-8400 X 208 or visit 100 Roy Klay Hall (Building A) to coordinate reasonable accommodations.

***If you have a documented disability and are receiving academic accommodations through the Office of Learning Support Services, please schedule a meeting with your instructor in a timely manner so that we may discuss how these services will be arranged.***

Tutoring services are available to students beginning the second week of every quarter. Students requesting tutoring services should obtain a tutor request form from the OLSS in 100 Roy Klay Hall (Building A) or online at the Terra website. Please note that instructor verification and acceptance of the Student Learner Agreement is necessary for all tutoring requests. All requests should be submitted to 100 Roy Klay Hall (Building A).

**MTH 1310 Topical Outline:**

Session	Course Content	Reading Assignment		Activity
1	Course Introduction			
	6.1 Removing a Common Factor	pp. 376 – 380	p. 379 – 1-49 odd	
	6.2 Factoring by Grouping	pp. 381 – 385	p. 384 – 1-27 odd	
2	6.3 Factoring Trinomials of the Form $x^2 + bx + c$	pp. 386 – 392	p. 391 – 1-57 odd	
	6.4 Factoring Trinomials of the Form $ax^2 + bx + c$	pp. 393 – 298	p. 397 – 1-55 odd	
3	6.4 Factoring Trinomials of the Form $ax^2 + bx + c$ (continued)	pp. 393 – 298	p. 397 – 1-55 odd	
	6.5 Special Cases of Factoring	pp. 400 – 405	p. 404 – 1-75 odd	
4	6.6 A Brief Review of Factoring	pp. 406 – 409	p. 408 – 1-43 odd	
	6.7 Solving Quadratic Equations by Factoring	pp. 410 – 418	p. 416 – 1-41 odd	
5	<b>TEST I (Chapter Six)</b>			
6	7.1 Simplifying Rational Expressions	pp. 428 – 433	p. 432 – 1-33 odd	
	7.2 Multiplying and Dividing Rational Expressions	pp. 434 – 438	p. 437 – 1-21 odd	
7	7.2 Multiplying and Dividing Rational Expressions (continued)	pp. 434 – 438	p. 437 – 1-21 odd	
8	7.3 Adding and Subtracting Rational Expressions	pp. 439 – 446	p. 444 – 1-47 odd	
9	7.4 Simplifying Complex Rational Expressions	pp. 448 – 452	p. 452 – 1-19 odd	
10	7.5 Solving Equations Involving Rational Expressions	pp. 453 – 457	p. 456 – 1-29 odd	
11	7.6 Ratio, Proportion, and Other Applied Problems	pp. 458 – 466	p. 463 – 1-27 odd	
12	<b>TEST II (Chapter Seven)</b>			
13	8.1 Rational Exponents	pp. 478– 484	p. 482 – 1-71 odd	
	8.2 Radical Expressions and Functions	pp. 485 – 492	p. 491 – 1-93 every other odd (1, 5, 9, etc.)	
14	8.2 Radical Expressions and Functions (continued)	pp. 485 – 492	p. 491 – 1-93 every other odd (1, 5, 9, etc.)	
	8.3 Simplifying, Adding, and Subtracting Radicals	pp. 493 – 498	p. 496 – 1-57 every other odd	

Session	Course Content	Reading Assignment	Activity
15	8.4 Multiplying and Dividing Radicals	pp. 499 – 508	p. 505 – 1-71 odd
	8.5 Radical Equations	pp. 510 – 515	p. 513 – 1-37 odd
16	8.6 Complex Numbers	pp. 516 – 523	p. 521 – 1-81 odd
	8.7 Variation	pp. 524 – 530	p. 528 – 1-21 odd
17	<b>TEST III (Chapter Eight)</b>		
18	9.1 Quadratic Equations	pp. 544 – 550	p. 548 – 1-53 odd
	Solving Quadratics by Calculator		
19	9.2 The Quadratic Formula and Solutions to Quadratic Equations	pp. 551 - 559	p. 557 – 1-47 odd
	9.3 Equations of Quadratic Form	pp. 560 – 566	p. 563 – 1-31 odd
20	9.3 Equations of Quadratic Form (continued)	pp. 560 – 566	p. 563 – 1-31 odd
	9.4 Formulas and Applications	pp. 568 – 578	p. 575 – 1-25 every other odd, 29-43 odd
21	9.5 Quadratic Functions	pp. 579 – 587	p. 583 – 1-29 odd
	9.6 Compound Inequalities	pp. 588 – 599	p. 596 – 1-19 odd, 29-43 odd
22	9.7 Absolute Value Equations and Inequalities	pp. 600 – 610	p. 607 – 1-69 odd
23	<b>TEST IV (Chapter Nine)</b>		
24	11.1 Function Notation	pp. 680 – 685	p. 683 – 1-41 every other odd, 43, 45
	11.2 Graphing Functions (also with calculator)	pp. 686 – 693	p. 691 – 1-29 odd
25	11.3 Algebraic Operations on Functions	pp. 695 – 701	p. 699– 1-51 odd
	11.4 Inverse of a Function	pp. 702 – 710	p. 708 – 1-33 odd
26	11.4 Inverse of a Function (continued)	pp. 702 – 710	p. 708 – 1-33 odd
	12.1 The Exponential Function	pp. 724– 732	p. 729 – 1-49 every other odd

Session	Course Content	Reading Assignment	Activity
27	12.2 The Logarithmic Function 12. 3 Properties of Logarithms <b>TAKE HOME TEST (Chapter 11)</b>	pp. 733 – 739 pp. 740 – 746	p. 737 – 1-25 odd, 27-63 every other odd p. 744 – 1-17 odd, 27-57 odd
28	12.4 Common Logarithms, Natural Logarithms, and Change of Base of Logarithms 12.5 Exponential and Logarithmic Equations	pp. 748 – 755 pp. 756 – 766	p. 753 – 1-59 odd p. 762 – 1-53 odd
29	Course Review		
30	<b>COMPREHENSIVE FINAL EXAM</b>		