

Intermediate Algebra 804-201-0032  
Syllabus for Spring 2006  
**Madison Area Technical College**

Course Number **60791**

Lecture: **Online Course**

Scheduled meetings: **January 17, March 7,**  
and **May 16, 5:30-7:30pm** in Room **336**  
(**Truax**)

Instructor: **George Alexander**

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**Office Hours (Room 245A):** Monday/Wednesday: 3:30 – 5:15pm  
Other times available by appointment

**Course Website:** All course documents, course information, required discussion boards, and individual grade reports will be available online throughout the semester on the Blackboard course site, <http://blackboard.matcmadison.edu>. Additional information on course content, expectations, and student responsibilities are posted on the Blackboard course site, so please check there for details.

**Important Dates:**

Date Class Begins: Orientation Session	January 17, 2006
Dates Class Does Not Meet:	March 13 – 17 Spring Recess
Midterm Exam:	March 7, 2006
Final Exam:	May 16, 2006

**Text:** Ignacio Bello and Fran Hopf, *Intermediate Algebra: A Real World Approach*, 2<sup>nd</sup> edition (McGraw-Hill) with **ALEKS User License** (ISBN 0-07-426514-8).

**Other Required Materials:**

A three-ring notebook binder is strongly recommended. You will be asked to keep notes in a journal as you work on ALEKS. The journal will help to keep you organized and will provide a handy reference when you need to look back for something you have already done. The journal is best kept on loose-leaf paper since for maximum flexibility in organization. You will be working on algebra topics in many order combinations and you will want to collect related items together even if you do not work them in the same order.

A graphing calculator (such as the TI-83 or equivalent) is recommended. Minimally, scientific calculator (like the TI-30XII) is required (you need one calculator, not both).

**Course Description:** Studies the construction and resulting properties of the real number system. Students simplify and factor algebraic expressions using fundamental laws and order of operations, solve first and second degree equations and inequalities in one variable, solve exponential and logarithmic equations, graph first degree and second degree equations and inequalities in two variables, solve 2x2 and 3x3 systems of equations, simplify and solve equations involving rational expressions and simplify and solve equations involving fractional exponents and radicals. Students are introduced to linear, quadratic, square root, absolute

value, exponential and logarithmic functions. The basic definitions of functions, relations, one-to-one functions and inverses are discussed along with the algebra and composition of functions. Functions are studied in greater detail in College Algebra. Meets five hours per week. Successful completion of this course allows students to continue on with either College Algebra or Quantitative Reasoning.

**Course Prerequisites:** High school algebra and geometry or Algebra Concepts and Principles of Geometry **with the required score on the placement exam in either event.**

**Course Outcome Objectives:**

- A. Demonstrate knowledge of the real number system
- B. Solve linear equations and linear inequalities
- C. Demonstrate graphing skills on the Cartesian coordinate plane
- D. Analyze linear equations and inequalities
- E. Demonstrate knowledge of functions and relations
- F. Solve 2x2 and 3x3 systems of equations and inequalities
- G. Perform operations on exponents and polynomials
- H. Evaluate rational expressions and solve corresponding rational equations
- I. Evaluate radical expressions and solve corresponding radical equations
- J. Graph quadratic functions and solve quadratic equations
- K. Use Algebra on functions
- L. Illustrate knowledge of exponential and logarithmic functions

**Types of instruction used during the semester will be:**

- 1. Presentations (online and textbook readings) of new material and topics.
- 2. Discussion: questions and answers on new and review material.
- 3. Frequent and regular online practice on problems.
- 4. Participation in class discussion forums.
- 5. Written assignments related to course content.
- 6. Regular online assessments to assure retention of material.
- 7. Online quizzes.
- 8. Midterm and final exams, in person.

**Content:**

Chapter 1	The Real Numbers
Chapter 2	Linear Equations and Inequalities
Chapter 3	Graphs and Functions
Chapter 4	Solving Systems of Linear Equations and Inequalities
Chapter 5	Polynomials
Chapter 6	Rational Expressions
Chapter 7	Rational Exponents and Radicals
Chapter 8	Quadratic Equations and Inequalities
Chapter 9	Quadratic Functions and the Conic Sections
Chapter 10	Functions—Inverse, Exponential and Logarithmic

Additional material may be covered as time allows

## Course Assessment and Instruction:

Grade Components: Final grades assigned for the course will be based on the percentage of total points and the degree to which course targets are met:

ALEKS Hours and Progress:	150 points
Online Participation:	75 points
Slice Portfolios:	75 points
Content Assignments:	75 points
Slice Quizzes (ALEKS):	75 points
Midterm Exam:	150 points
<u>Final Exam:</u>	<u>150 points</u>
Total:	750 points

Students will be assessed by means of written tests: Two written exams will be given in person during the semester: one at midterm and one during finals. Students should be able to show complete work and procedures to support answers. The written exams serve as a checkpoint on how you write up and communicate solutions. The midterm exam will consist of options to complete short tests on different subject areas, depending upon which parts you are ready for at the time of the midterm exam. If all written exam requirements are completed satisfactorily at the midterm exam, it is possible to complete this course early.

Students will be assessed by means of online homework, quizzes, and assessments: The ALEKS software administers assessment tests at the beginning and regularly throughout the semester. These assessments will show your progress and retention through required course topics. Students should work enough each week to meet weekly progress goals. The goals become very difficult to meet if you fall behind, so you must budget enough time to complete weekly expectations.

Students will be assessed by participation in online discussion forums: Online participation is mandatory for this course. Discussion forums will explore homework topics and other questions related to the course, some fun with mathematics, and individual study habits.

Students will be assessed by completion of course assignments: Various algebra projects will be given as assignments throughout the semester. Complete descriptions, assignments and instructions will be made available on the course web site, about one every two weeks. These are intended to help you make connections between major course themes and improve your conceptual understanding of algebra.

Students will be assessed on ALEKS quizzes for each pie slice: Near the completion of each ALKES pie slice, you should take the online quiz for review. You may take each quiz as many times as you like, but only your latest quiz score will count towards the final grade.

Make-Up Test Procedures and Other Late Work: If a student is not able to take a scheduled examination at the announced time, other arrangements for a proctored exam

should be made with the instructor in advance. It is the student's responsibility to contact the instructor BEFORE the exam is missed if this is due to a predictable event. In case of emergency, the student should contact the instructor as soon as possible. Talk with the instructor about the procedure for taking missed examinations.

All assigned work will be graded. Performance on tests, quizzes, class participation, and homework will determine your grade. The total percentage will be rounded down to the nearest 0.01%. Grades are based on points allocated above – there will be no extra credit.

Exams are “closed book”. One sheet (8.5”x 11” both sides) of notes is allowed for use during exams.

Letter Grades for Intermediate Algebra will be earned as follows. The bold point ranges indicate “guaranteed” grades; if you achieve enough points you will get the specified grade. The other conditions will be taken into consideration if your point total is below the minimum to determine how well you have met the course expectations.

- A Earn at least 690 of 750 course points (92%).**  
Pass the written midterm and final exams, showing a high level of mastery (92% or more) in all course content areas (pie slices).  
Record 90 or more hours on ALEKS.  
Achieve 95% mastery towards the ALEKS goals in your pie chart.  
Show significant progress between initial and final ALEKS assessments.
  
- B Earn at least 630 of 750 course points (84%).**  
Pass the written midterm and final exams, showing a strong level of mastery (84% or more) in all course content areas (pie slices).  
Record 90 or more hours on ALEKS.  
Achieve 88% mastery towards the ALEKS goals in your pie chart.  
Show significant progress between initial and final ALEKS assessments.
  
- C Earn at least 570 of 750 course points (76%).**  
Pass the written midterm and final exams, showing competency (76% or more) in all course content areas (pie slices).  
Record 90 or more hours on ALEKS.  
Achieve 80% mastery towards the ALEKS goals in your pie chart.  
Show significant progress between initial and final ALEKS assessments.

Note that you may need more than the minimum 90 hours. If you are not making sufficient progress at 6 hours per week, I will expect a higher weekly commitment (7 – 8 hours).

I will decide upon AB, BC, and D letter grades individually based upon points earned, attendance, class participation, evidence of a student's effort and improvement over the course of the semester.

Attendance: Attendance is hard to measure in an online course, but your individual effort each and every week during the semester will make a tremendous difference in this course. You will be expected to participate in all aspects of the course delivery, including online homework and quizzes, discussion forums, and weekly progress checks.

It is the your responsibility to notify the instructor and make arrangements to complete scheduled exams and all other work you miss as the result of absence or conflicts, whether excused or unexcused.

### Course Content

The subject matter of this course of study is presented in three different formats: online presentation by the ALEKS software, supplementary materials on the Blackboard course site, and printed material in the text. It is the student's responsibility to use all course resources and to master all course content, regardless of the delivery format.

### Student Withdrawal

Any student who is no longer attending class should withdraw. Failure to officially withdraw will result in a Failing grade (F). It is the student's responsibility to withdraw from class in a timely manner.

### Academic Honesty Statement

It is expected that each student will complete his/her own scored assignments and exams. If the instructor judges that dishonesty occurs, no credit will be given for the work in question. The college disciplinary policy is available in the counseling/advising center.

### Expectations

As a student studying mathematics, you should be committed to allocating a **minimum** of six to eight hours a week of outside the classroom work. It is recommended that you budget even more time if this is your first online course. Concepts discussed in class must be reinforced by doing problems at home. Completing assignments will insure that you are actively participating in the mathematics and not just observing the mathematics. This is an essential prerequisite for the successful completion of this course.

Additional course policies are listed in detail on the Blackboard course website.

### **ADA Statement**

If you feel you may need an accommodation or special services for this class, please contact Counseling Services in Room 159 (Truax) or D107 (Downtown), call 246-6716, or email [drs@matcmadison.edu](mailto:drs@matcmadison.edu). See the *MATC Catalogue and Student Handbook* under "Disability Resource Services" for more information.

**Intermediate Algebra – Online Course**  
**Spring 2006 Calendar of Dates for Intermediate Objectives**

**Orientation:**            Tuesday, January 17            5:30-7:30pm            Room 336 Truax

**Chapter 1:** complete by Tuesday, January 24 (26 items)

**Chapter 2:** complete by Tuesday, February 7 (34 items)

**Chapter 3:** complete by Tuesday, February 21 (27 items)

**Chapter 4:** complete by Tuesday, February 28 (9 items)

**Midterm Exam:**        Tuesday, March 7            5:30-7:30pm            Room 336 Truax

**Chapter 5:** complete by Thursday, March 9 (22 items)

**Chapter 6:** complete by Thursday, March 30 (26 items)

**Chapter 7:** complete by Tuesday, April 11 (25 items)

**Chapter 8:** complete by Tuesday, April 18 (10 items)

**Sections 4.5/4.5:** complete by Tuesday, April 25 (8 items)

**Chapter 9:** complete by Thursday, April 27 (4 items)

**Chapter 10:** complete by Thursday, May 11 (22 items)

**Final Exam:**            Tuesday, May 16            5:30-7:30pm            Room 336 Truax

**Weekly Progress Points – Intermediate Algebra** Student Chart: \_\_\_\_\_

Progress points will be awarded based on progress as of 12:00pm (noon, Central Time Zone) on Tuesdays each week. Progress is cumulative, so if you ever fall behind schedule, it is critical to catch up in the following week. Early in the semester, it is better to get ahead of schedule, if possible, because later topics may take longer to master.

<b>Weekly Grades:</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>	<b>W</b>	<b>Due Date</b>
<b>Point scale:</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>Score</b>
<b>Week 1 Points</b>							<b>Jan. 24</b>
Total ALEKS hrs	6	5.5	5	4.5	4	< 4	
Algebra Goal	30%	28%	26%	23%	20%	<20%	
<b>Week 2 Points</b>							<b>Jan. 31</b>
Total ALEKS hrs	12	11	10	9	8	< 8	
Algebra Goal	40%	36%	32%	27%	25%	<25%	
<b>Week 3 Points</b>							<b>Feb. 7</b>
Total ALEKS hrs	18	16	14	13	12	<12	
Algebra Goal	45%	40%	36%	32%	27%	<27%	
<b>Week 4 Points</b>							<b>Feb. 14</b>
Total ALEKS hrs	24	22	20	17	16	<16	
Algebra Goal	50%	45%	40%	36%	32%	<32%	
<b>Week 5 Points</b>							<b>Feb. 21</b>
Total ALEKS hrs	30	27	24	22	20	<20	
Algebra Goal	54%	50%	45%	40%	36%	<36%	
<b>Week 6 Points</b>							<b>Feb. 28</b>
Total ALEKS hrs	36	32	29	26	24	<24	
Algebra Goal	58%	54%	50%	45%	40%	<40%	
<b>Week 7 Points</b>							<b>Mar. 7</b>
Total ALEKS hrs	42	37	34	30	28	<28	
Algebra Goal	62%	58%	54%	50%	45%	<45%	
<b>Week 8 Points</b>							<b>Mar. 21</b>
Total ALEKS hrs	48	43	39	34	32	<32	
Algebra Goal	66%	62%	58%	54%	50%	<50%	
<b>Week 9 Points</b>							<b>Mar. 28</b>
Total ALEKS hrs	54	48	44	39	36	<36	
Algebra Goal	70%	66%	62%	58%	54%	<54%	

<b>Week 10 Points</b>							<b>Apr. 4</b>
Total ALEKS hrs	60	54	49	43	40	<40	
Algebra Goal	74%	70%	66%	62%	58%	<58%	
<b>Week 11 Points</b>							<b>Apr. 11</b>
Total ALEKS hrs	66	59	54	47	44	<44	
Algebra Goal	78%	74%	70%	64%	61%	<61%	
<b>Week 12 Points</b>							<b>Apr. 18</b>
Total ALEKS hrs	72	65	59	51	48	<48	
Algebra Goal	82%	78%	73%	67%	64%	<64%	
<b>Week 13 Points</b>							<b>Apr. 25</b>
Total ALEKS hrs	78	70	64	55	52	<52	
Algebra Goal	86%	82%	76%	69%	66%	<66%	
<b>Week 14 Points</b>							<b>May 2</b>
Total ALEKS hrs	84	76	68	60	56	<56	
Algebra Goal	89%	86%	78%	71%	68%	<68%	
<b>Week 15 Points</b>							<b>May 9</b>
Total ALEKS hrs	90	81	73	64	60	<60	
Algebra Goal	92%	88%	80%	73%	70%	<70%	
<b>(Final Progress)</b>							<b>May 16</b>
Total ALEKS hrs	90	85	77	68	64	<64	
Algebra Goal	95%	88%	80%	76%	73%	<73%	

<b><u>ALEKS Pie Slices</u></b>	Portfolio (10 pts)	Quiz (100%)	Exam (50 pts)	Grade
Solving Equations				
Exponents & Polynomials				
Graphing & Functions				
Rational Expressions				
Radicals				
Systems/Logarithms				

