

## Spring 2016 MAT 110 Syllabus

MWF 10:00 – 10:50 am, N045

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Office Hours: Mondays – Friday at 12:00 – 12:50 pm, or by appointment

- Text/Materials Needed for Class:** Starting on the first day of class you must have...
  - No formal text will be used but we will work using the ALEKS program. All e-text materials will be sent to you in e-mail.
  - A 3-ring binder with a minimum of 5 tabs labeled as “Handouts”, “Lecture Notes”, “ALEKS Notes”, and “Attendance Quizzes”. All the handouts e-mailed to you must be included in their proper sections in this portfolio.
  - About 200 sheets of paper in the Lecture Notes, ALEKS Notes, and Attendance Quizzes tab.
  - Writing utensils, colored pens/pencils, and a 12-inch ruler.
  - A scientific calculator. Cell phones or other electronic devices will NOT be allowed to be used as calculators.
  - Download the handouts for the first day of class from <http://banimahd.weebly.com/resources.html>. Put them in your binder in the appropriate tabs.
  - You must have your ALEKS account set by using the links provided in the email for the first day of classes. You will purchase an 18-week ALEKS license: Go to [www.aleks.com](http://www.aleks.com) and, when prompted, enter the following code:  
**HYMTX-Y3RGT**

**Note:** Please *finish your initial assessment*; and all the *homework* before you come to your first day of classes.
- Topics Covered:** See the “Calendar”.
- Objectives and Course Information:** Main objective is to learn to think in analytical ways and be able to extend mathematical principles learned in one context to another context. A preparation class for many STEM disciplines.
  - Graph a variety of basic functions and equations using intercepts and symmetry where appropriate.
  - Complete the square for graphing circles and parabolas.
  - Graph polynomial and rational functions.
  - Use function transformations.
  - Use function arithmetic and composition.
  - Understand functions and inverse function evaluation.
  - Use the Factor Theorem for polynomials, and the Fundamental Theorem of Algebra.
  - Apply the properties of Logarithms.
  - Solve logarithmic and exponential equations.
  - Solve systems of linear equations.
  - Solve applied Problems.
  - Conic sections
  - Geometric and Arithmetic Sequences

*For more details see tentative schedule. A grade of C in this course will satisfy the core requirement for the Associate Degree.*
- Pre-requisite:** A grade of C or better in Mat 105, or grade of C or better in 103B, or placement based on placement test score.
- Calculator Policy:** A scientific calculator will be needed on some in-class written exams and quizzes. On ALEKS assessments, a calculator button will show up if one is needed (no other calculator will be allowed). No cell phone or other electronic device will be allowed to be used as a calculator. No exceptions are made to this policy. So if you forget to bring a scientific calculator, you risk not having one on exams and quizzes.
- Important Dates** (dates for **Exams, quizzes and Intermediate objectives** are based on the tentative schedule): **Please see the tentative schedule for all exam, quiz, and intermediate objective deadlines.**

	Day, Date	Event
a.	January 25	First day of classes
b.	February 5	Last day to drop a class without receiving a “W” grade
c.	February 19	Exam 1
d.	March 21-25	Spring Break
e.	April 4	Exam 2
f.	April 8	Drop/Audit Deadline
g.	April 27	Exam 3
h.	May 12	Last day of classes
i.	May 18	Paper/Pencil Final Exam 3:30-5:30 pm

## 5. Workload and Grading Policy

- Workload estimation is based on the average student.

Item	Hours Spent
Class time (3 credits)	~3 hrs/wk (~45 hours)
Out-of-class time: 1. Watching videos/doing homework 2. Taking notes/writing summaries on lectures/reading 3. Doing problems from worksheets 4. Filling ALEKS Pie/meeting Intermediate Objectives	~6 - 12 hrs/wk (~90-174 hours)
Make-up exams (when needed to satisfy 80% or higher mastery goal)	~6 hrs
<b>Total for the Semester</b>	<b>~141- 225 hrs</b>

- Your grade in Mat 110 will be determined by three factors: % on each of the 4 exams (written/oral ALEKS and non-ALEKS exams), % on ALEKS Intermediate Objectives, and % on class participation/video logs, attendance quizzes, portfolio, and Quizzes.
- The total % breakdown for your grade is as follows:

Item	%	Variable
Exam 1	5	A
Exam 2	9	B
Exam 3	15	C
<b>Final Exam</b>	25	D
Quizzes (There are 9 Quizzes, one lowest score is dropped, each quiz is 2% of your grade)	16	E
Attendance Quizzes	10	F
Video Logs + Projects +Class Participation	10	G
ALEKS Intermediate Objectives (IO) There are 10 Intermediate Objectives; each worth 1% of your grade.	10	H
<b>Total</b>	100	

**Grading Scale:** Standard grading scale is used where scoring above 93% is an A, 90-92% is an A-, 87-89% is a B+, and so on. To compute your grade, the following formula will be used

**Total %**

$$= 0.05A + 0.09B + 0.15C + 0.25D + 0.16E + 0.10F + 0.10G + 0.10H$$

**Example:** If a student earns 80% on each of Exams, 75% on the final exam, 80% on the quizzes, 80% on the ALEKS Intermediate Objectives, and 80% on Video logs/Class Participation/Attendance Quizzes, then that student will earn a grade of a C+ computed as

**Total %**

$$0.05(80) + 0.09(80) + 0.15(80) + 0.25(75) + 0.16(80) + 0.10(80) + 0.10(80) + 0.10(80) = 78.75$$

- **Exams and Quizzes:** See course calendar for the tentative dates of exams and quizzes.
- All exams are cumulative.
- Taking an exam is a privilege and before you will be allowed to take each exam, you must have completed review exam/quiz assigned.
- In order to be eligible to take the quizzes, you must meet the following criteria.

- You must have  $\geq 94\%$  on your attendance quizzes
  - You must have  $\geq 94\%$  on your video logs
  - You must have met the ALEKS pie target set for that quiz (on the left side of your ALEKS main panel you should see the target % required for each quiz in addition to the calendar at the end of this syllabus).
  - Based on my experience, students who score  $\geq 80\%$  on all three exams, 8 quizzes, all objectives, all attendance quizzes, video logs, and a C or higher on the final exam have a very good chance to earn a C or better grade in the course.
  - **Make-up Exam Policy:** If you miss an exam due to extenuating circumstances, then a retake exam will be considered only if (or by instructor's consent). Before you will be allowed to take the make-up exam, you must have completed review exam assigned. To decide if you are ready for the make-up/retake exam, an oral exam may be administered by the instructor. Scheduling the exam may be restricted by the availability of the computer labs. Your instructor is going above and beyond to provide this extra opportunity; it is your responsibility to come to the agreed-upon make-up exam on time.
  - **There are no make-up quizzes since the lowest quiz will be dropped.**
  - **ALEKS Intermediate Objectives:** Your ALEKS pie is broken into 10 Intermediate Objectives. You must complete these objectives by the stated deadlines (listed in the pie itself and in the tentative schedule). The percentage of the objective mastered by the deadline will determine your grade on that Intermediate Objective. All objective that are expired will continue to be available to you after the deadline to access the content, however the % received on it will remain what you earned by the due date. After each objective is completed, an automatic ALEKS assessment will be triggered.
  - **Class Participation/Attendance Quizzes/Video log/:** Points are reserved for in-class participation which involves group work and solving problems on the board. Video logs refer to your problem set handed to you in class. Each class period, you are required to bring your summary of your reading/videos you watched and the required completed video log problems. Your portfolio (which is your binder) must contain summaries and notes of lectures/readings, ALEKS work, and classwork (e.g., attendance quizzes). See below for information on attendance quizzes.
  - **Attendance:** You are expected to attend all class periods barring any unforeseen circumstances. If you are working at an accelerated pace, you must still attend all class periods until you have completed your ALEKS pie. If you have to miss a class, please inform your instructor as soon as possible to you can learn the missed materials. No penalty is applied to toward your grade for missing up to 3 class periods (1.5 weeks of class). If you miss more than 3 class periods, please check with your instructor for the penalty which could be as harsh as an automatic F grade in the course. Exceptions to this policy are at the instructor's discretion.
  - **Attendance Quizzes:** Questions for these quizzes are based on lectures/reading, projects, material taught in the class, and ALEKS Intermediate Objectives. These quizzes may be oral and administered one-on-one or in a group. The student/group will use appropriate mathematical terminology to explain their work. No student is forced to demonstrate their mastery orally in front of the whole class.
  - **Extra Credit %:** From time to time, your instructor may choose to give you opportunities to earn extra credit.
  - In all work, especially for the video logs, quizzes, attendance quiz problems and exams, your handwriting should be legible, and the steps should be easy to follow. I recommend using a #2 pencil and an eraser. The general format should conform to the sample problems done in class, or as shown in the textbook or ALEKS. Following such guidelines will help your mathematical writing and thinking abilities.
- 6. Special Needs:** If you are a student with a disability, please feel free to come and talk to me if I can help you in any way.

## 7. Classroom Etiquette or ground rules

Most students do not need this section. However, there have been some exceptions over the years that have disrupted class and students' understanding of the material. So please follow these guidelines:

- All cellular phones, beepers, and electronic devices that could disrupt class should be in sleep mode or off while class is in session. If one is accidentally turned on or must be kept on for emergencies, then please leave the classroom to respond or turn it off immediately. **No electronic device (like I-phones, cell phones, MP3-players,...) should be handled during class.** If you are caught using any of these devices during class (e.g., texting), you may lose access to the device until the end of the class.
- Do not talk to a classmate during class while I am trying to explain something to the class. This is mainly for non-math talk, but even math talk should not occur while I am talking. Other students who have paid to learn in the course may be distracted by your conversation, and at times I also can become distracted. I am also concerned that you yourself might be missing some important information at the board. At any point if you do not understand the material or have questions, don't hesitate to ask questions. Raise your hand and I can address your question.

- I know the material is sometimes difficult and some students have trouble following what I'm doing at the board at times. Please let me know when this occurs so that I can address it. Please do not get vocally upset about it during class time. Pouting or venting is usually a healthy reaction to stress, but it is not appropriate in class and can be disruptive to other students' learning.
  - If possible, please recycle all plastic bottles, aluminum cans, and paper. I respectfully ask that you do not throw these items in the classroom garbage.
- 8. Cheating:** *If you are caught cheating on ALEKS or paper/pencil exams and quizzes (cheating refers to when you use other websites to solve your problem, or copying solutions from another student), academic misconduct proceedings will be started against you and you will not be allowed to take any further exams until this matter is resolved. Cheating is a serious offense and will not be tolerated. The mastery you demonstrate in this class is your own work and you should take pride in your dignity and ethical behavior that is expected of you in College.*
- 9. UW-Colleges Assessment:** A UW Colleges-wide assessment program has been put into place to enhance the quality and effectiveness of the curriculum, programs, and services of the institution. The following areas of proficiency will be assessed because they are of primary importance in the education of our students: Analytical Skills, Quantitative Skills, Communication Skills, and the Aesthetic Engagement. The Mathematics Department has also determined a number of areas where common mistakes are made throughout the mathematical curriculum. These areas are: (1) improper distribution through parentheses, (2) improper distribution of exponents, (3) selective canceling of denominators, (4) analyzing functions with a compound input, such as  $f(x+h)$ , and (5) improper use of exponents. Results from problems in these areas will collectively be used to assess the colleges-wide proficiency "Analytical Skills; Select and apply scientific and other appropriate methodologies". For more information, please visit the website: <http://www.uwc.edu/academics/assessment/>

## Semester Calendar for Math 110 Course Spring 2016

The video/text assignments and ALEKS work are to be done out of class. For each Intermediate objective your percentage mastery will be recorded at midnight of the due date.

	Sunday	Monday	Tues.	Wednesday	Thurs.	Friday	Sat.
January		25. Introduction to different types of Functions , including exponential and logarithmic functions	26.	27. Continuation of different types of Functions, properties of logarithmic functions	28.	29. Continuation of different types of Functions, properties of logarithmic functions	30.
	31. ALEKS Intermediate objective 1 due.	1. Continuation of different types of Functions, properties of logarithmic function	2.	3. Continuation of different types of Functions, arithmetic and geometric sequences	4.	5. Continuation of different types of Functions, arithmetic and geometric sequences, <b>Quiz 1 (Target 45)</b>	6.
February	7. ALEKS Intermediate objective 2 due.	8. Arithmetic of functions, Composition of functions, Inverse Functions	9.	10. Continuation of functions, Composition of functions, Inverse Functions	11.	12. Arithmetic of functions, Composition of functions, Inverse Functions, <b>Quiz 2 (Target 70)</b>	13.
	14. ALEKS Intermediate objective 3 due.	15. Graphing different kinds of functions, Transformation of functions	16.	17. Continuation different kinds of functions, Transformation of functions	18.	19. Exam 1 ( <b>Target 90</b> )	20.
	21.	22. Graphing different kinds of functions, Transformation of functions	23.	24. Continuation of different kinds of functions, Transformation of functions	25.	26. Transformation of functions, <b>Quiz 3 (Target 100)</b>	27.
	28. ALEKS Intermediate objective 4 due.	29. Transformation of functions,	1.	2. Graphing Conic Sections	3.	4. Graphing Conic Sections, <b>Quiz 4 (Target 115)</b>	5.
March	6. ALEKS Intermediate objective 5 due.	7. Continuation of Conic Sections	8.	9. Graphing Polynomials and Rational Functions	10.	11. Continuation of Polynomials and Rational Functions, <b>Quiz 5 (Target 130)</b>	12.
	13. ALEKS Intermediate objective 6 due.	14. Graphing Polynomials and Rational Functions	15.	16. Continuation of Polynomials and Rational Functions	17.	18. Graphing Polynomials and Rational Functions, <b>Quiz 6 (Target 145)</b>	19.
	20. ALEKS Intermediate objective 7 due.	21.	22.	23.	24.	25.	26.
	27.	28. Finding roots of polynomial equations	29.	30. Continuation of Finding roots of polynomial equations	31.	1. Continuation of Finding roots of polynomial equations, ( <b>Must have review packet completed</b> )	2.
April	3. ALEKS Intermediate objective 8 due.	4. Exam 2 ( <b>Target 170</b> )	5.	6. Solving equations and inequalities	7.	8. Continuation of Solving equations and inequalities <b>Quiz 7 (Target 175)</b>	9.
	10. Homework due.	11. Solving equations and inequalities	12.	13. Continuation of Solving equations and inequalities	14.	15. Continuation of Solving equations and inequalities, <b>Quiz 8 (Target 183)</b>	16.
	17. Homework due.	18. Exponential and Logarithmic equations	19.	20. Continuation of Exponential and Logarithmic equations	21.	22. Continuation of Exponential and Logarithmic equations, <b>Quiz 8 (Target 183)</b>	23.
	24. ALEKS Intermediate objective 9 due.	25. System of Equations	26.	27. Exam 3 ( <b>Target 195</b> )	28.	29. System of Equations, Gauss Jordan Elimination	30.
May	1. ALEKS Intermediate objective 10 due.	2. Continuation of System of Equations, Gauss Jordan Elimination	3.	4. Continuation of System of Equations, Gauss Jordan Elimination	5.	6. Review for Paper/Pencil Final, <b>Quiz 9</b>	7.
	8. Homework due.	9. Review for Paper/Pencil Final	10.	11. Review for Paper/Pencil Final	12.	13.	14.
	15.	16.	17.	18. Paper/Pencil Final Exam 3:30-5:30pm	19.	20.	21.