Department of Mathematics & Statistics

Math 012 Intermediate Algebra

Course Syllabus

Spring 2019

Credit Hours: 5 hours

Instructor Name: Mathew Tucker

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Office Hours: MF: 2pm-3pm(Room 325 in Jabara)  
 W: 2pm-3pm (Math Lab in Jabara)

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**Catalog Description:**

Math 012 Intermediate Algebra

Offered *Cr/NCr* only. Content consists of topics usually covered in the second year of a standard high school algebra course. Not applicable to degree.

**Prerequisites:**

MATH 011 or one year of high school algebra, and qualifying score in recent department placement exam. Not applicable to degree.

**Course Purpose:**

The course will prepare the student to take Math 111 College Algebra.

**Measurable Student Learning Outcomes:**

Upon successful completion of this course, students will be able to:

* Chapter R/1
  + R.2 Classify a number as real, rational, integer, whole, and/or natural.
  + R.3,4 Evaluate and simplify expressions using exponent laws.
  + 1.1 Solve linear equations.
  + 1.3 Solve formulas for a given variable.
  + 1.2,3 Translate and solve "real problems".
  + 1.4,5 Solve inequalities.
  + R.2,1.4 Express sets in set notation and interval notation.
  + 1.5 Find and write unions and intersections of sets and inequalities.
  + 1.6,7 Solve absolute-value equations and inequalities.
* Chapter 2/3
  + 2.1 Find solutions of equations with two variables.
  + 2.1 Graph general equations.
  + 2.6 Determine whether a relation is a function.
  + 2.6 Evaluate functions using function notation.
  + 2.7 Determine the domain of a function.
  + 2.7 Identify and graph linear functions.
  + 2.2 Estimate the slope of a pictured line, and sketch a line with a given slope.
  + 2.3 Graph a line in standard form.
  + 2.3 Graph horizontal and vertical lines.
  + 2.3 Determine whether two lines are parallel, perpendicular, or neither.
  + 2.3 Find the equation of a line given clues: Point and slope, Two points, Point and a parallel/perpendicular line
* Chapter 3
  + 3.2 Solve systems of 2 equations by substitution.
  + 3.3 Solve systems of 2 equations by elimination.
  + 3.6 Solve systems of 3 equations (Elimination highly recommended!)
  + 3.4,6 Solve applications of systems.
  + 3.5 Graph two-variable inequalities and systems of them.
* Chapter 4
  + 4.2 Identify polynomials and parts: Term, degree, coefficient, leading term, leading coefficient
  + 4.3 Multiply any two polynomials.
  + 4.5 Factor common factors.
  + 4.5 Factor by grouping.
  + 4.6 Factor trinomials.
  + 4.7 Factor differences of squares.
  + 4.7 Factor expressions completely.
  + 4.8 Solve polynomial equations using zero products.
* Chapter 5
  + 5.1,2 Enlarge, simplify, multiply and divide rational expressions.
  + 5.3 Find least common multiples of groups of numbers/expressions.
  + 5.3 Add and subtract rational expressions.
  + 4.4 Long divide polynomials.
  + 5.4 Simplify complex rational expressions.
  + 5.5 Solve rational equations.
  + 5.6 Solve rational equations in applications.
  + 5.7 Given a data point, find an equation of variation (direct or inverse).
* Chapter 6
  + 6.1 Define square root, cube root, higher roots, principal square root.
  + 6.1 Find roots of numbers and expressions.
  + 6.2 Express a rational exponent as powers and roots and vice versa.
  + 6.2 Evaluate rational exponents.
  + 6.3 Simplify radical expressions using the exponent laws.
  + 6.3 Simplify radicals using the product and quotient rules.
  + 6.4,5 Combine like radicals; add, subtract and multiply radical expressions.
  + 6.6 Rationalize denominators.
  + 6.7 Solve (and check!) radical equations.
  + 6.8 Define, add, subtract, multiply, and divide complex numbers.
* Chapter 7
  + 7.1 Solve quadratic equations by completing the square.
  + 7.1 Solve quadratic equations using the square root property.
  + 7.2 Solve quadratic equations using the formula (MEMORIZE)
  + 7.2,5 Solve applications using the quadratic formula.
  + 7.2 Use the discriminant to determine the nature of a quadratic equation's solutions.
  + 7.3 Solve equations quadratic in form.
  + 7.4,5 Locate the vertex of a quadratic function.
  + 7.4,5 Graph quadratic equations.
  + 7.6 Solve quadratic inequalities.
* Chapter 8
  + 8.1 Compose two functions.
  + 8.2 Find the inverse of a function.
  + 8.4 Rewrite logarithmic relationships as exponential, and vice versa.
  + 8.4 Evaluate logarithms of numbers.
  + 8.5 Expand and simplify logarithmic expressions using properties.
  + 8.7 Solve exponential and logarithmic equations.
* Chapter 9
  + 9.1 Calculate the distance between two points.
  + 9.1 Find the center/radius of a circle given an equation, and vice versa.
  + 9.1 Sketch the graph of a circle.
  + 9.4 Solve nonlinear systems of equations

**Textbook and Required Material:**

ALEKS 360 subscription for online student and faculty support

(Students will receive access to an eBook along with their purchased subscription)

**Class Protocol:**

Participation: The lesson format will vary from day to day with students expected to read and write in and outside of class, speak within problem solving groups, and to address the class, and listen to the ideas of others.

Attendance: Attendance is required and daily participation will be graded. If you cannot attend class, notify the instructor prior to your return to class to make arrangements to be prepared for the next class. No makeup tests will be given.

Cell phone use: Use of cell phones is prohibited during class time by [university policy](http://webs.wichita.edu/inaudit/ch2_14.htm) and students found in violation of this policy forfeit their participation points for the class with additional penalties levied at the discretion of the instructor.

**Technology Requirement:**

The student is expected to have daily internet access for use in communication and for use of ALEKS. If home equipment is not available, the student may use computer laboratories in Jabara Hall, in Corbin Education Center, the library, and other campus buildings.

Students are not required to own a graphing or scientific calculator. Note: These are learning tools and will not be available on the final examination.

**Assessment**:

The student’s performance will be assessed and the class grade determined by accumulated points based on a variety of sources including work in ALEKS, class participation and exams. A listing of homework and test dates follows at the end of the syllabus.

**Department Final, 1 p.m., Saturday, May 11, 2019.** This exam will count 20% of the course grade. The math department will prepare this exam, and the exam will also act as a separate assessment tool to determine if each student is ready to advance. The final exam attempts to measure a student’s total mathematical ability, and therefore may include some problems on material we do not actually cover in class. For the same reason, there is no practice final for this course. The math department does not allow calculators on the final exam.

**Grading:**

This is a credit/no credit class, however we will be keep track of progress via the following:

ALEKS – 20%

Attendance/Participation – 10%

Exams (five in total) – 50%

Comprehensive Final – 20%

The following grading scale will be used for the class:

|  |  |
| --- | --- |
| 93-100 A  90-92 A-  87-89 B+  83-86 B  80-82 B-  77-79 C+ | 73-76 C  70-72 C-  67-69 D+  63-66 D  60-62 D-  0-59 F |

\*In order to advance to Math 111 College Algebra, a student must achieve a minimum score on the final exam.

*The grade scale above is for the student’s reference only. This class is graded credit or no credit, and a score of at least 70% is necessary to receive credit.*

**Assistance:**

Students will be offered several forms of assistance to reach success.

1. The instructor will be available for assistance at posted office hours or by appointment when needed.
2. Technology assistance through ALEKS: an interactive textbook, section videos, homework help tools, etc.
3. The Mathematics Department has a tutor lab available on the third floor of Jabara Hall. It is generally open 8am-7pm Monday through Thursday and 8am - 1pm on Friday.
4. Students are encouraged to form study groups or work with a study partner.
5. Online resources, such as the brief videos at Khan Academy, are available that might supplement the lectures.

**Important Academic Dates:**

For spring semester 2019, classes begin January 22, 2019 and end December 9, 2019. The last date to drop a class and receive a W (withdrawn) instead of F (failed) is April 5, 2019. There are no classes on March 11 – 17, 2019. The final exam period is May 11, 2019.

**Academic Honesty**:

Students are responsible for knowing and following the [Student Code of Conduct](http://webs.wichita.edu/inaudit/ch8_05.htm) and the [Student Academic Honesty policy](http://webs.wichita.edu/inaudit/ch2_17.htm). Any breach of academic integrity will result in a zero for the affected assignment(s) – serious breaches may result in more serious consequences like failing the course or being dismissed from the University.

**Accommodations for Students with Disabilities:**

If you have a physical, perceptual, psychiatric/emotional, medical, or learning disability that may impact your ability to carry out assigned course work, contact the Office of Disability Services (DS), Grace Wilke Annex, room 173. (Voice/TDD 978-3309). ODS will review your concerns, confirm your disability, and determine, with you, what accommodations are necessary. All information and documentation of your disability is confidential and will not be released by DS without your written permission.

**Counseling and Testing:**

The WSU Counseling and Testing Center provides professional counseling services to students, faculty and staff; administers tests and offers test preparation workshops; and presents programs on topics promoting personal and professional growth. Services are low cost and confidential. They are located in room 310 of Grace Wilkie Hall, and their phone number is (316) 978-3440. The Counseling and Testing Center is open on all days that the University is officially open. If you have a mental health emergency during the times the Counseling and Testing Center is not open, please call COMCARE Crisis Services at (316) 660-7500

**Diversity and Inclusion:**

Wichita State University is committed to being an inclusive campus that reflects the evolving diversity of society. To further this goal, WSU does not discriminate in its programs and activities on the basis of race, religion, color, national origin, gender, age, sexual orientation, gender identity gender expression, marital status, political affiliation, status as a veteran, genetic information or disability. The following person has been designated to handle inquiries regarding nondiscrimination policies: Executive Director, Office of Equal Employment Opportunity, Wichita State University, 1845 Fairmount, Wichita KS 67260-0138; telephone (316) 978-3186.

**Intellectual Property:**

Wichita State University students are subject to Board of Regents and [University policies](http://webs.wichita.edu/inaudit/ch9_10.htm) regarding intellectual property rights. Any questions regarding these rights and any disputes that arise under these policies will be resolved by the President of the University, or the President’s designee, and such decision will constitute the final decision.

**Shocker Alert System:**

Get the emergency information you need instantly and effortlessly! With the Shocker Alert System, we will contact you by email the moment there is an emergency or weather alert that affects the campus. Sign up at [www.wichita.edu/alert](http://www.wichita.edu/alert)

**Statement on Credit Hours:**

Success in this 5 hour credit course is based on the expectation that students will spend, for each unit of credit, a minimum of 75 hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction and preparation/studying or course related activities for a total of 375 hours.

**How to use this syllabus**

This syllabus provides you with information specific to this course, and it also provides information about important university policies. This document should be viewed as a course overview; it is not a contract and is subject to change as the semester evolves.

**Student Health Services**

WSUs Student Health clinic is located in 209 Ahlberg Hall. Hours are 8:00am to 7:00pm (8:00 am to 5:00 pm on Fridays), though the clinic may be closed occasionally on Wednesdays from noon to 1:30pm. The telephone number is (316) 978-3620. In addition to outpatient and preventive care (including immunizations, a prescription service, and testing/counseling for sexually transmitted infections), Student Health can handle minor injuries. All services are confidential. For more information see [www.wichita.edu/studenthealth](http://www.wichita.edu/studenthealth).

**Title IX**

Title IX of the Educational Amendments of 1972 prohibits discrimination based on sex in any educational institution that receives federal funding. Wichita State University does not tolerate sex discrimination of any kind including: sexual misconduct; sexual harassment; relationship/sexual violence and stalking. These incidents may interfere with or limit an individuals ability to benefit from or participate in the University's educational programs or activities. Students are asked to immediately report incidents to the University Police Department, (316) 978-3450 or the Title IX Coordinator (316) 978-5177. Students

may also report incidents to an instructor, faculty or staff member, who are required by law to notify the Title IX Coordinator. If a student wishes to keep the information confidential, the student may speak with staff members of the Counseling and Testing Center (316) 978-3440 or Student Health Services (316)978-3620. For more information about Title IX, go to: http://www.wichita.edu/thisis/home/?u=titleixf

**The Heskett Center and Campus Recreation**

Whether you are wanting to be active on campus, relieve the stress from classes or take care of your body, Wichita State Campus Recreation is the place for you. Campus Recreation, located inside the Heskett Center, contributes to the health, education, and development of Wichita State University students, faculty, staff, alumni, and community members by offering quality programs and services. With many programs and facilities which are free to all students and members, Campus Recreation offers its members limitless opportunities. For more information about our services see www.wichita.edu/heskett.

**Video and Audio Recording**

Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Unless explicit permission is obtained from the instructor, recordings of lectures may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

**Schedule of Activities:**

Objectives for each week in ALEKS **will be due every Sunday at 11:59pm.**

The schedule below is subject to change.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Tentative Calendar (MTWRF) | | | | | |
| Week of | M | T | W | R | F |
| January 21 | No Classes | Syllabus/R.2 | R.2/R.3 | 1.1 | 1.2 |
| January 28 | 1.2 | 1.2/1.3 | 1.4 | 1.5 | 1.6 |
| February 4 | 1.7 | 2.1 | 2.1/2.2 | 2.3 | 2.3 |
| February 11 | 2.6 | 2.6/2.7 | **Exam 1** | 3.1 | 3.2/3.3 |
| February 18 | 3.3 | 3.4 | 3.6 | 3.5 | 4.1/4.2 |
| February 25 | 4.3 | 4.3 | 4.5 | 4.6 | 4.6/4.7 |
| March 4 | 4.7 | 4.8 | **Exam 2** | 5.1 | 5.1/5.2 |
| March 11 | No Classes – Spring Break | | | | |
| March 18 | 5.3 | 5.3 | 4.4 | 5.4/5.5 | 5.5 |
| March 25 | 5.6 | 5.7 | **Exam 3** | 6.1 | 6.2 |
| April 1 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 |
| April 8 | 6.8 | 7.1 | 7.1/7.2 | 7.2 | 7.3 |
| April 15 | 7.4 | 7.4/7.5 | 7.5 | 7.6 | **Exam 4** |
| April 22 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 |
| April 29 | 8.6 | 8.7 | 8.7 | 9.1 | 9.1 |
| May 6 | 9.4 | Review | **Exam 5** | Final Review | No Classes |
| Final: Saturday, May 11 from 1:00-2:50pm | | | | | |