

General course information:

Math-M105: College Algebra (3 credits)

Prerequisite: Math-M104: Foundations of College Algebra, C- or better OR placement into this course.

Course Description: Refer to [Appendix F](#) for a detailed list of topics

Students will deepen their understanding of functions, acquire non-linear problem solving skills and develop the algebraic skills necessary for precalculus and general education mathematics courses: factoring; quadratic, polynomial, rational and radical equations and applications; and operations with rational expressions, radicals, and rational exponents.

This course contributes to the fulfillment of the Quantitative Literacy Goal and the outcomes listed:

Students will translate a verbal problem into mathematical symbols.

Students will solve the mathematical problem that models the verbal problem.

Students will use the solution of the mathematical problem to draw valid conclusions about the verbal problem.

Required course materials (textbook, access code and calculator):

Calculators

- It is recommended to have a TI-83, TI-83 Plus, TI-84 or TI-84 plus calculator for this course.
- A limited number of TI calculators are available for use in the Math Commons if you have not yet purchased your calculator. These calculators can be temporarily checked out for use in your class on an emergency basis.

IU eText (MyLab Math and Textbook)

- Registering for this course automatically allows access to Pearson's MyLab and the course textbook ([Algebra for College Students](#), Robert Blitzer, **Eighth Edition**) through Canvas. These materials are part of the IU eText initiative and have already been included in the fees for this course. No additional purchases are necessary.
- The physical copy of the textbook is optional, as you will have access to the textbook through the MyLab website.

Forbidden Materials

- You will NOT be permitted to use the TI-89 or the TI-Nspire CAS calculators, or any other calculator equipped with a computer algebra system (CAS).
- Use of CAS to **generate OR check answers** to course work is NOT permitted and is considered **cheating**.
- You are NOT permitted to use any "math help" websites that uses a CAS or solves problems.
- Calculator APPS on your smart phone will NOT be allowed during in-class tests.
- Please refer to [Appendix D: Academic and Personal Conduct](#) for more information

M105 Course Websites

There are two different websites you will use over the course of this semester:

- Canvas: (SP23: COLLEGE ALGEBRA: #####)
 - This page is administered by your course lecturer
 - The ##### will match your course CRN number
 - Announcements from your lecturer can be found here
 - Pearson's MyLab has been integrated into this canvas site and will be used to complete regular homework and quiz assignments. These items can be found by clicking on the **Assignments** tab in your Canvas site.
 - Graded homeworks and Skill Practice Sets can be found here by clicking on the **Assignments** tab

- Canvas: (SP23: M105 Math Lab)
 - The Canvas Math Lab page is administered by the Math Lab Coordinator, Dr. Peter Tupa
 - This page's gradebook contains **only** your current Math Lab attendance score
 - This page contains many resources to help you study for exams and learn how to use MyLab

Grade component details

- All components of your Math-M105 grade will be posted in your lecturer's Canvas gradebook.
- **You must have a score of at least 60% on the FINAL EXAM to earn a grade higher than D-.**

MyLab Homework

- You will be assigned an online MyLab homework assignment (found on Canvas) after each class (except those immediately before your in-class tests).
- The online homework can be completed using any computer with a dependable internet connection.
- For most exercises you are given three tries to enter the correct answer.
 - After the third unsuccessful try at a question you will be given a new similar question. There is no limit to the number of new questions (3 tries each) you can attempt.
- If you do not attempt an online homework assignment before the due date, you will be assigned a score of 0 for the assignment. You will always have the option of going back and completing late homework for full credit.

MyLab Quizzes

- There will be twelve on-line quizzes during the semester.
- At the end of the semester, your two lowest quiz scores will be omitted, and the quiz average will be the average of your scores on your ten highest quizzes.
- You are permitted to make two attempts on each quiz. Both attempts must be made before the due date. The best score of the two attempts will be used for your grade. You are strongly encouraged to review your first attempt with a tutor before you make the second attempt.
- The work on the quiz should be yours alone. Please do not ask the lab tutors or your classmates for assistance.
- **To be able to access the quiz, you must achieve a score of 90% or higher on each of the homework assignments covered by the quiz. The start date/time of the quiz will be after the homework assignments covered on the quiz are both due.**
- There will be NO extensions on due dates for the quizzes without written medical or legal documentation. Plan your work accordingly.
- If you fail to complete a quiz on time, your score will be 0. NO EXCEPTIONS!

Graded Homework

- There will be 12 required paper and pencil exercise sets assigned and collected for a grade. The assignments and due dates will be posted through your Math-M105 Canvas site.
- At the end of the semester, your two lowest Graded Homework scores will be omitted.
- It is your responsibility to print, complete and submit each assignment on time. Be sure to DOWNLOAD the document before printing so all of the math symbols will display correctly.
- Graded homework assignments will NOT be accepted after the due date. If you are unable to attend class on the day it is due you should send your instructor a scanned copy of your work by email. The time stamp on the email should be no later than the start of your class meeting. You may also be asked to turn in your hard copy of the assignment no later than the start of the next class meeting.
- For each Graded Homework set posted, there will be similar exercises posted in the matching Skill Practice Set. You may ask the tutors in the IU Kokomo Math Commons to assist you as you complete these exercises.
- The work you submit for the Graded Homework must be yours alone. Collaboration with other students is **not permitted**.
- Use of computer algebra systems (CAS) to generate OR check answers to homework and quiz questions is NOT permitted and is considered cheating. This includes the use of the CAS provided in the TI-89 and TI-Nspire CAS calculators as well as the numerous "math help" websites.

Participation

- Your instructor may require you actively participate in class by answering questions, solving problems or engaging in group work activities.
- You will be expected to actively participate.
- Please be respectful of your peers and the learning environment.

Exams

- All tests are during class. Tests will be in the traditional paper and pencil format. The test problems will be similar to those in the on-line homework, strongly recommended textbook exercises, skill practice sets and graded homework assignments.
- You will be permitted to use a TI-83, TI-83 Plus, TI-84 or TI-84 plus calculator during the test.
- Calculators accessed through a mobile device (cell phone, tablet, etc.) will NOT be permitted.
- You may NOT use your book or any notes during the test.
- You should show your work clearly to allow for partial credit.
- The final is a two hour paper and pencil test that covers the entire semester.
- If your final exam score is greater than any of the three in-class midterm exams, your final exam grade will be used to replace the lowest of these midterm exam scores.
- **You must have a score of at least 60% on the FINAL EXAM to earn a grade higher than D-.**

Exam make-up policy

- If you know that you cannot attend class when a test is scheduled, you should contact your instructor in writing (by email) at least two weeks in advance to make alternative arrangements for taking the test.
- If you miss a test with no advance notice for a valid reason (e.g. due to illness), you must contact your instructor within 24 hours of the test. At the instructor's discretion, a make-up test may be offered. All make-up tests must be completed before the graded tests are returned to the rest of the class.
- If you miss a second test, you will be required to provide a documented reason for your absence in order to make-up the missed test. Without such documentation, your score for the missed test will be 0.
- If it is not possible to schedule a make-up test and you provide documentation, your grade for one missed test will be determined by your final exam grade.
- After making arrangements for a make-up test with your instructor, it may be necessary for you to contact the IU Kokomo Testing Center at 765 455 9395 to schedule a time for the test.

Math Lab Session component:

Math Lab Coordinator Contact Information

Math Lab Coordinator: Dr. Peter Tupa

e-mail: ptupa@iuk.edu

Office: KO 048b

Office Hours: By Appointment

Phone Number: 765-455-9496

Math Lab Session:

- The purpose of the Math Lab session is to support your learning in your Math-M105 class. Tutors and Lab Supervisors are always on duty to assist you as you strive to master the course material.
- Please use your time in the Math Lab to complete all reading, homework, quizzes, and graded homework assigned by your instructor as well as working towards mastery of the course material.
- Your attendance during your weekly Math Lab Sessions is a requirement of Math-M105
 - To succeed in this course you should expect to spend a minimum of 6 hours of learning time each week, in addition to time attending class.
 - Seventy-five (75) minutes of your study time will be in the IU Kokomo Math Computer Lab (Room KO 054) during your required Math Lab Session.

- Your Math Lab Session attendance grade will be included in the computation of your Math-M105 course grade. The percentage reported on the Math Lab Canvas site will periodically be updated in the Lecture Canvas gradebook.

Math Lab Session attendance requirement:

- Attendance during your weekly Math Lab session is a requirement of Math-M105.
 - Your Math Lab attendance percentage is one component in the computation of your grade in Math-M105.
 - The Roll Call feature in your Math Lab session Canvas will record your attendance grade as the percentage of the sessions that have met you have attended.
 - To more accurately keep track of your attendance, you are required to sign-in and use the lab computers during your session.
- You are expected to be present in the Math Lab AND working on Math-M105 assignments for your entire scheduled time.
 - If the tutors notice that you are working on assignments for other courses, checking or sending email, visiting Facebook, sending or receiving text messages, etc., you will be reminded that you are earning points toward your Math-M105 grade and you will be asked to re-focus your attention on math assignments. You will be counted as absent if you continue to use the time for purposes unrelated to your math class.
- If you are more than 15 minutes late, or if you leave more than 15 minutes before the end of your session, you will forfeit all of your attendance points for the week.
- If you arrive between 5 and 15 minutes after the start of your session, or if you leave between 5 and 15 minutes before the end of your session, you will be considered “tardy” and you will lose a quarter of the attendance points for the week.
- A limited number of make-up sessions will be allowed if you are unable to attend your required Math Lab session.

Math Lab Session Make-up Policy:

- To earn your weekly Math Lab session attendance points you must be present for your entire scheduled session. If illness or another unavoidable conflict prevents you from attending, you may earn the attendance points by attending a make-up within two weeks of the missed lab. You are also permitted to do a make-up “in advance” up to four ‘class days’ before the planned absence.
- Before you attend your make-up session, please print and complete a “Make-Up Request Form”, which can be found on the Math Lab Canvas site.
- Give your completed form to the tutor on duty AT THE START OF THE MAKE-UP SESSION and remember to sign-in and out of one of the lab computers. At the end of the session, add your name to the sign-out roster.
- You will be permitted up to TWO (2) make-up sessions during the semester with no explanation required.
- Additional make-up sessions will be permitted only if you attach written documentation (medical, legal or campus) explaining the reason for your absence to your make-up form.
- If you will be absent due to a university sponsored event (such as KEY trips, athletic competitions, etc.), you will still be required to complete a make-up session. Please complete the “Notification of Absences for University Events” form in addition to the normal “Make-Up Request Form.” Such make-ups will not count towards your two “no questions asked” make-up sessions.

Math Lab session make-up times

Monday through Thursday	Friday**
11:30 am – 12:45 pm	10:00 –11:15 am
1:00 –2:15 pm	11:30 am – 12:45 pm
2:30 – 3:45 pm	1:00 –2:15 pm
4:00 – 5:15 pm	**Friday make-up labs must be
5:30 – 6:45 pm (Wed. only)	completed in the math commons

Math Lab Pathways to Mastery

While in the Math Lab, you will be expected to work on practicing and mastering mathematical techniques. You may not use the time to work on assignments for other classes. If you find yourself saying “I do not have anything to do,” please use the following list to see what other options there are for working towards math mastery.

- MyLab Homework assignments (You are allowed to work ahead)
 - You can also go back to previous homework and **Improve Your Score** up to 100%
- MyLab Quizzes
 - You can ask a tutor to go over past quizzes to help you understand any mistakes
- Graded Homeworks
- Skill Practice Sets (these are posted in the same location as the Graded Homeworks)
- Math Mastery Worksheets can be used to practice key techniques and concepts until you are 100% proficient. This worksheets are available via the Math Lab Canvas page.
- Read the section of the textbook that you are currently covering in class
- You can ask a tutor to go over past exams to improve your understanding of previous mistakes
- Print out the Assignments List and work the STRONGLY RECOMMENDED textbook exercises
- Also from the Assignments List, work the Exercises from the printed textbook for additional practice
- MyLab Personalized Study Plans
 - In the Canvas page, click the Modules tab. Under the ‘MyLab Math Student Links’ section, click on MyLab Math Study Plan.
 - Based on your previous quizzes, MML will offer additional practice problems, guided help, and example videos of concepts and types of problems that still require mastery
- Test Review Practice Exams
 - On the Math Lab Canvas page are resources to help study for upcoming exams
- Pre-test & Post-Test: The Pre and Post test are the only assignments that MUST be completed in the Math Lab

Appendix A: Math Learning Resources

If you are having difficulty with any of the assigned work please take advantage of the following resources:

- Instructor office hours
- IUK Math Commons (KO 050) and Math Computer Lab (KO 054) are located on the lower level of the main building. Both areas are open and staffed with tutors during:
 - **Monday through Thursday, 9 am to 7:00 pm**
 - **Friday, 10:00 am to 2:15 pm**
- The tutors can assist you if you have trouble as you work through your online homework, textbook exercises, Graded Homework, Skill Practice Set exercises, or review your work on any items that have already been graded.
- One-on-one tutoring sessions can be scheduled for on campus or online. Visit or call the Math Commons (765 455 9586) to make an appointment. Leave a detailed message if no one is able to answer when you call.
- Tutors will also be available through Zoom (Monday through Thursday, 5pm to 9pm). The link and available times can be found on the Math Tutoring Canvas page. If you have not been invited to this canvas page after the first week of classes, please email Peter Tupa (ptupa@iuk.edu).

Appendix B: MyLab and Computer Technical Support

- Diagnostic Information: Since this course is using a version of MyLab Math that is integrated with Canvas, you will not have a username or typical account information to provide to a technical support representative. Use the following method to obtain Diagnostic Information to supply to the representative:
 - In the Canvas course, click on the Modules tab.
 - Under the MyLab Math Student Links section, click on Integration Support and then load the page in a new window to access your personal course information
- Use the this link for assistance regarding your **personal computer**:
<https://support.pearson.com/getsupport/s/students>

- If you encounter technical problems when working on your **personal computer** with the MyLab website, click on the circled question mark in the upper right corner of the browser for support options.
- If necessary, call the MyLab tech support center at 800-677-6337 or 844-292-7015.
- If the problem continues, it is your responsibility to report the problem to the Math Lab Coordinator by email (ptupa@iuk.edu) at the time of the problem.
 - Include your name, course and instructor, description of the problem, actions taken and “incident number” from your MML tech support contact.
 - If it is determined that the problem was caused by a MyLab server error, the Math-M104 instructors will be informed and due dates will be adjusted as necessary, at the discretion of the instructors.
 - If the problem was the result of an issue with your personal equipment or your Internet Service Provider (ISP), a due date extension will be granted at the discretion of your Math-M104 instructor. If the problem recurs, you will be expected to work with your ISP to resolve the connection issues, without additional due date extensions.
- **On Campus Computer:** Please report the problem immediately to the IU Kokomo Math Lab coordinator, in person, in KO 054, by phone (765-455-9496) or by email (ptupa@iuk.edu). Your message should include your name and the name of your course and instructor, as well the location of the machine and a description of the problem encountered.

APPENDIX C: IMPORTANT DATES:

Campus holidays:

To allow our staff time to enjoy these holidays, the IU Kokomo Math Computer Lab and Math Commons Room (KO 054 and KO 050) will not be open on the days listed below:

- Monday, January 16, for the Martin Luther King, Jr. Day;
- Monday through Friday, March 13 to 17, for Spring break.

FLAGS: Student Engagement Roster:

The Student Engagement Roster (SER; aka FLAGS) is IU’s online platform where faculty inform students of their progress in each course. Constructive feedback will be given to you on your attendance and overall course performance. Recommendations will also be given that suit your progress. You can use the feedback to reach out to campus offices and services for resources and support. **Please see the course schedule for the exact dates of feedback.** However, because the SER is a 24/7 live system, feedback may be reported whenever your instructor feels it may benefit you. When feedback is entered, you will receive notification via IU email containing a link to your report. Ask your instructor if you have questions about any notations posted.

- Tuesday, January 17 (attendance only)
- Monday, February 20

WITHDRAWAL DATES AND POLICIES:

- If it becomes necessary to withdraw from M105, it is your responsibility to complete the necessary transaction by the official deadline.
- Indiana University students can complete the withdrawal electronically through the Student Center at one.iu.edu.
- The last day to withdraw with an automatic W is Sunday, March 12.
- The last day to withdraw is April 16. Your instructor will approve the withdrawal with an F or W.
- No Schedule Adjustment forms will be signed/e-approved after Sunday, April 16.

Appendix D: Academic and Personal Conduct Policy:

- Please turn ALL electronic communication devices to vibrate before the start of class (cell phones, pagers, laptop computers, tablets, etc.). Receiving or sending messages (voice, text, photo or video) on these devices during class is considered a disruptive behavior and can also lead to a charge of academic dishonesty.
- **All online quizzes, graded homework assignments and in-class tests are to be your work alone.** Any evidence of cheating will be dealt with according to the Indiana University Code of Student Ethics. Students are expected to adhere to the Code of Ethics regarding classroom conduct. Any inappropriate behavior, disorderly conduct, or non-compliance with faculty directions can result in a charge of Academic and/or Personal Misconduct, which may result in a lowering of a course grade, course failure, or requirement to withdraw.

- **Use of computer algebra systems (CAS) to generate OR check answers to the online homework, graded homework, skill practice sets or quiz questions is NOT permitted and is considered cheating.** This includes the use of the CAS provided in the TI-89 and TI-Nspire CAS calculators as well as the numerous “math help” websites.
- You are permitted to work with your classmates on exercises from the online homework assignments, textbook exercises and skill practice sets. When you are working in the IU Kokomo Math Computer Classroom (KO 054) you should ask the lab tutors to assist you so your classmates can use their time to complete their work.
- The use of a calculator accessed through a mobile device (cell phone, tablet, etc.) is NOT permitted during in-class tests. **All electronic communication devices (cell phones, pagers, tablets, laptop computers, etc.) must be turned off or set to vibrate and should be placed in a book bag or under your desk while you are taking a test.** ANY USE OF THESE DEVICES DURING A TEST WILL BE CONSIDERED CHEATING AND YOU WILL NOT BE ALLOWED TO COMPLETE THE TEST. The instructor will relay any messages that have been sent by the IU Alert system.
- Students are expected to adhere to the Code of Ethics regarding classroom conduct.
 - Any inappropriate behavior, disorderly conduct, or non-compliance with faculty directions can result in a charge of Academic and/or Personal Misconduct, which may result in a lowering of a course grade, course failure, or requirement to withdraw.
 - Please be courteous to your classmates while working in the IU Kokomo Math Lab (KO 054).
 - Refrain from unnecessary conversations during your Math Lab session.
 - Please avoid using excessive amounts of perfume or after shave, as some students are very sensitive to these scents.
- Help us to protect the computers and maintain a space that is conducive to studying.
 - Food of any type is not permitted in the Math Lab.
 - If you bring a beverage, it must be in a container with a spill-proof lid. All “fountain type” cups with plastic lids and straws must be left on the provided space at the entrance to the room.
 - Tobacco and related products (vaporizers & e-cigarettes) are strictly prohibited on Indiana University property
- Go to <http://studentcode.iu.edu> for details about student rights, responsibilities, and conduct.

APPENDIX E: Important Campus Services and Links

Accessibility Services:

<https://kb.iu.edu/d/anmp>

Important information about safety on campus:

<https://www.iuk.edu/academic-affairs/academic-resources/sexual-misconduct-statement.html>

Student handbook:

<http://www.iuk.edu/advising/handbook/>

Student Code

<http://studentcode.iu.edu/>

Civility Statement

<https://www.iuk.edu/academic-affairs/academic-resources/civility-statement.html>

Student in Crisis Fund:

<https://www.iuk.edu/professional-staff-council/crisis-fund.html>

APPENDIX F: Math-M105 Course topics

Modeling and solving real world applications using linear, quadratic, rational and radical equations:

- Students will be able to translate a verbal problem into mathematical symbols.
- Students will be able to solve the mathematical problem that models the verbal problem, using appropriate algebraic or technological methods.
- Students will be able to use the solution of the mathematical problem to draw valid conclusions about the verbal problem.
- Students will be able to write algebraic representations for non-linear functional relationships that are described verbally.

- Students will be able to use non-linear functions to analyze and interpret the relationships represented.

Finding solutions of equations:

- Students will be able to solve polynomial equations using factoring.
- Students will be able to solve rational equations that are reducible to linear or quadratic equations, including equations with extraneous solutions.
- Students will be able to solve absolute value equations.
- Students will be able to use graphing technology to estimate solutions of polynomial equations.

Finding solutions of inequalities in one or two variables:

- Students will be able to use algebraic techniques to solve absolute value inequalities.
- Students will be able to interpret the solution of absolute value inequalities in the context of real world applications.
- Students will be able to graph the solutions to linear inequalities in two variables.
- Students will be able to graph feasible sets for systems of linear inequalities on paper and using graphing technology.
- Students will be able to identify the ordered pairs of the vertices of a feasible set using algebraic techniques.
- Students will be able to use algebraic techniques to solve polynomial and rational inequalities.

Radical functions and expressions and rational exponents:

- Students will be able to evaluate radical functions and to identify when the function value is not a real number.
- Students will be able to identify the domain of radical functions.
- Students will be able to use absolute value notation correctly when simplifying radical expressions with an even index.
- Students will be able to writing radical expressions using rational exponents and vice versa.
- Students will be able to simplify expressions with rational exponents.
- Students will be able to simplify radical expressions by converting to rational exponent form.
- Students will be able to simplify radical expressions by factoring.
- Students will be able to multiplying radical expressions, with the product expressed in simplified form.
- Students will be able to identify like radical expression and use them to add and subtract and radical expressions, with the results expressed in simplified form.
- Students will be able to divide radical expressions, with the results expressed in simplified form.

Functions:

- Students will be able to identify relations which are functions, when the relations are represented verbally, as sets of ordered pairs or in graphical form.
- Students will be able to use linear functions to analyze and interpret the relationships represented in graphical form, tabular form or equation form.
- Students will be able to identify the domain and range of functions that are represented with a graph, as a set of ordered pairs, or in verbal form.
- Students will be able to identify the domain of rational and radical functions.
- Students will be able to determine the value of linear, rational, polynomial and radical functions using the equation form of the function, including inputs in variable form.
- Students will be able to determine the value of a function using its graph or tabular representation.
- Students will be able to determine the input corresponding to a particular function output, using the equation form of the function (linear or quadratic), the graph or a table.
- Students will be able to write new functions using the algebra of functions.
- Students will be able to identify the domain of the polynomial and rational functions resulting from the addition, subtraction, multiplication or division of other polynomial and rational functions.

Polynomial operations:

- Students will be able to use the correct terminology to describe polynomial functions.
- Students will be able to evaluate polynomial functions for numeric and variable inputs.
- Students will be able to perform operations of addition, subtraction, and multiplication with polynomials.
- Students will be able to simplify expressions with integer exponents.
- Students will be able to factor quadratic and quadratic-type trinomials with a leading coefficient not restricted to 1.
- Students will be able to recognize perfect square trinomials, differences of squares, sums and differences of cubes.
- Students will be able to factor perfect square trinomials, differences of squares, sums and differences of cubes.
- Students will be able to identify and use the greatest common factor to write a polynomial in factored form, including a GCF containing binomial factors.
- Students will be able to use the grouping method to factor a polynomial with four terms, including those in the polynomial reduces to a difference of two squares.

- Students will be able to factor a polynomial expression completely, by applying two or more factoring techniques.
- Students will be able to identify quadratic trinomials that are prime.
- Students will be able to use algebraic techniques to solve factorable polynomial equations.

Rational expressions:

- Students will be able to simplify rational expressions using algebraic techniques.
- Students will be able to compute the sum, difference, product or quotient of rational expressions.
- Students will be able to find the simplified form of complex fractions, including those expressed with variables raised to negative powers.
- Students will be able to use algebraic techniques to solve rational equations that are reducible to factorable polynomial equations.
- Students will be able to use algebraic techniques to solve formulas in more than one variable, with rational expressions.

Radical functions and expressions and rational exponents:

- Students will be able to evaluate radical functions and to identify when the function value is not a real number.
- Students will be able to identify the domain of radical functions.
- Students will be able to use absolute value notation correctly when simplifying radical expressions with an even index.
- Students will be able to writing radical expressions using rational exponents and vice versa.
- Students will be able to simplify expressions with rational exponents.
- Students will be able to simplify radical expressions by converting to rational exponent form.
- Students will be able to simplify radical expressions by factoring.
- Students will be able to multiplying radical expressions, with the product expressed in simplified form.
- Students will be able to identify like radical expression and use them to add and subtract and radical expressions, with the results expressed in simplified form.
- Students will be able to divide radical expressions, with the results expressed in simplified form.