

COLLIN COLLEGE COURSE SYLLABUS

COURSE INFORMATION

Course Number: MATH0406

Course Title: Introductory Algebra

Course Description: With an emphasis on developing critical thinking skills, a study of arithmetic operations with rational numbers, an introduction to algebraic vocabulary, concepts, and notation, and geometric properties, functions, linear equations, systems of linear equations, polynomial expressions, and quadratic expressions and equations Lab Included

Course Credit Hours: 4

Lecture Hours: 3

Lab Hours: 3

Placement Assessment: Placement in MATH 0406 Consult the Testing Center Director if you have questions about an assessment level.

Prerequisite: TSI placement in Math 0406.

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Upon successful completion of this course, students will:
2. Identify, classify, graph, and develop effective mathematical strategies with rational numbers to apply to real world situations
3. Solve a linear equation in one variable with three or more variable terms using multiple algebraic skills.
4. Identify, graph, find the domain and range of, and evaluate a function.
5. Solve a system of two linear equations graphically and algebraically, and interpret the solution in the context of an application.
6. Use factoring strategies to solve a quadratic equation.
7. Set up and solve an application with an appropriate proportion, or linear, quadratic, or system of linear equations.

Withdrawal Policy: “See the current *Collin Registration Guide* for the last day to withdraw.”

Collin College Academic Policies: “See the current *Collin Student Handbook*.”

Americans with Disabilities Act: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal opportunity. It is the student’s responsibility to contact the ACCESS office, SCC-G200 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

INSTRUCTOR INFORMATION

Instructor's Name: Julie Turnbow

Office Number: J241 (Inside Suite J236)

Office Hours: Monday, Wednesday, and Fridays from 9 to 9:45 am (D203); Monday and Wednesdays from 1 to 2 pm (in I216); Tuesdays from 11:30 to 12:30 pm (D203); Thursdays from 4 to 5 pm (D203)

Phone Number: 972-377-1719

In case of emergency, contact the Developmental Education office (SCC K102) at (972) 881-5720.

Email: jturnbow@collin.edu I will check email every day and return emails within 72 hours.

Class Information:

Section Number: S05

Meeting Times: 10:00 to 11:50 am

Meeting Location: SCC G238

Administrative Withdrawal: Participation in class is an essential requirement of this course. Maintain contact with your professor if you are not able to attend class or complete an assignment on time. If you miss more than 20% of the meetings of a Developmental Education class between the beginning of class and the college withdrawal date, you may be administratively withdrawn from this class. Administrative withdrawal may have academic, financial, financial aid, and visa implications. It will count toward Collin's Repeat Policy and the 27-hour limitation on Developmental Education courses. Administrative withdrawal will take place after the full refund period, and if you are administratively withdrawn from the course you will not be eligible for a tuition refund. If you have questions about the administrative withdrawal policy, please contact your professor.

College Repeat Policy: Developmental courses may be taken for a combined total of no more than 27 credit hours. In addition, a student may repeat this course only once after receiving a grade, including W. If you drop this class before census day, it will not count against you.

Scholastic Dishonesty: For a full description of scholastic dishonesty see the student code of conduct in the Student Handbook. Students found responsible for scholastic dishonesty in this class may have a grade of 0 assigned or a course grade of "FD".

Course Resources: The College provides group tutoring and a Math Lab at no charge at each campus to support student success in this class. Students are required to purchase a software license for use in this class. Please see: <http://www.collin.edu/collegesurvival/> for a listing of available college support resources

Textbook: The MyMathLab (MML) Integrated Course Sequence code (ISBN # 0321757378) is **required**. The code can be purchased online or through the bookstore. The MyMathLab (MML) Integrated Course Sequence code includes access to the eText version of Bittinger and Beecher's *Algebra Foundations: Basic Math, Introductory and Intermediate Algebra*. The code is good for the entire developmental math sequence.

There are **optional** items in the bookstore if students choose to purchase them:

- Bittinger and Beecher *Algebra Foundations: Basic Math, Introductory and Intermediate Algebra* (book with MML code) ISBN # 0133862321*

- Custom Textbook, Bittinger *Algebra Foundations, Custom for Collin College* ISBN # 13231513381

*If you choose to purchase the custom textbook after purchasing the MyMathLab (MML) Integrated Course Sequence code you will be paying more than the cost of the book with MML code (ISBN # 0133862321).

Supplies: A graphing calculator is required and the TI 83, TI 83 Plus, or TI 84 is preferred. Calculators with a computer algebra system (CAS) will not be permitted on exams, unless prior approval is obtained from the instructor. Bring a pen, pencil, notebook, graphing calculator, the syllabus, and any reviews and other papers that I ask you to print.

Attendance Policy: Students are responsible for all material and assignments for a missed class.

Electronic Devices Policy: As per Section 6.1 Academic Etiquette and the College Experience (pg. 147, paragraph 3) of the *Collin Student Handbook* with the exception of a calculator, all electronic devices are to be switched off during class, unless an exception is obtained from the instructor in advance. All electronic devices (including cell phones, laptop computers, iPods, MP3, etc.) must be turned **OFF** and stored out of sight during class. Students who are using any electronic devices for text message, IM, email, and **etc.** during the class time will be asked to leave the class without returning for the remaining time; considered absent for that class meeting. Students will also be reported to the Dean of Students Office (DOS) at the second offence. If an emergency arises which necessitates the use of a cell phone, the please exit the classroom in an orderly fashion. Please do not disturb the lecture—otherwise every student needs prior approval.

Course Requirements: Attend class as scheduled and complete the required work: homework, Labs, Tests in Class, and a Final Examination, and any other assignments required by the Professor. Students will be expected to bring textbook, calculator, pencil and paper to class each day and take notes accordingly. With the exception of a graphing calculator, all electronic devices are expected to be switched **off** during class, unless an exception is obtained from the Professor in advance. Students are not permitted to leave early without prior permission. Arrange for appropriate child care when needed—children are not allowed.

Method of Evaluation: Only AD, BD, CD, FD or I can be awarded in this class. **A grade of DD will never be awarded. The total number of points in the class is 700.**

The **Grading Scale** will be: AD: 626 to 700 BD: 556 – 625; CD: 486 – 555; FD: below 486

Tests –There will be 5 exams given (not including the final exam). Each exam will be worth 100 points. The lowest exam grade will be dropped. There will be no make-up exams. If you miss an exam, the exam grade will be a zero. All exams will be given in class. The total number of points for the exams is 400. See schedule below.

Lab exercises –Students will complete 10 Labs on the MyMathLab website. Each lab will have a practice lab, which contains 15 questions. Labs 2 through 10 will contain problems from both the current section and previous sections. Students have unlimited changes to take the practice lab; however, there is only one chance for the actual lab. The URL, instructions for enrolling, and the required course ID

will be provided in a separate document. The labs will be worth a total of 100 points. **Course ID: turnbow49014**

Homework –The homework will be worth a total of 100 points.

Final exam–The Final Exam is worth 100 points. A comprehensive departmental final exam is REQUIRED for all students at the end of the course (NO EXCEPTIONS). If the exam is not taken, a zero will be recorded. No other grade can replace the final exam.

The instructor reserves the right to make changes to this syllabus during the semester. Changes will be provided in writing during class hours.

Expectation: Maintaining a positive learning environment: As your instructor and as a student in this class, it is our shared responsibility to develop and maintain a positive learning environment for everyone. Your instructor takes this responsibility very seriously and will inform members of the class if their behavior makes it difficult for him/her to carry out this task. As a fellow learner, you are asked to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

Creating Opportunities for Learning: As your instructor, it is my responsibility to present learning opportunities through the course syllabus, lectures, labs, in-class and out-of-class exercises and assignments. It is your responsibility to do the learning by completing the readings, by attending class and by participating in the class discussions and assessment/lab exercises.

Tracking Your Success at Learning: Your instructor will conduct quizzes, exams and assessments that you can use to determine how successful you are at achieving the course learning outcomes (mastery of course content and skills) outlined in the syllabus. If you find you are not mastering the material and skills, you are encouraged to reflect on how you study and prepare for each class. Your instructor welcomes a dialogue on what you discover and may be able to assist you in finding resources on campus that will improve your performance.

The Census date is February 1, 2016. The last day to withdrawal is March 18, 2016. No food or drink in the classroom.

Tentative Course Calendar:

Day		0406 Lab Quiz Due Date
1/20	Syllabus; Introduction to the Graphing Calculator 10.2 The Real Numbers 2.5 Simplifying Fractions	
1/22	2.6 Multiplying Fractions 2.7 Dividing Fractions and Applications of Fractions 3.1 Least Common Multiples	
1/25	3.2 Adding Fractions and Applications of Fractions 3.3 Subtracting Fractions 3.4 Mixed Numerals	
1/27	1.9 Exponential Function and Order of Operations	
1/29	10.1 Evaluate Algebraic Expressions and Translate Phrases to Algebraic Expressions 10.3 Add Signed Numbers	
2/1	10.4 Subtract Signed Numbers 10.5 Multiply Signed Numbers 10.6 Divide Signed Numbers	
2/3	10.7 Properties of Signed Numbers 10.8 Simplifying Expressions and Order of Operations	
2/5	9.1 Perimeter and Circumference Review for Test 1	
2/8	Test 1 In Class (Monday)	LAB 1 (1.9, 2.5 – 2.7, 3.1 – 3.4, 10.1 – 10.8)
2/10	9.2 Area 9.3 Circles	
2/12	9.6 Square Roots and the Pythagorean Theorem 5.1 Ratios 5.2 Unit Price	
2/15	5.3 Proportions 5.4 Applications of Proportions	
2/17	11.1 Solving Equations: The Addition Principle 11.2 Solving Equations: The Multiplication Principle 11.3 Solving Linear Equations	
2/19	11.4 Formulas	

	11.6 Applications and Problem Solving	
2/22	6.1 Percent Notation 6.2 Percent Notation and Fraction Notation 6.3 Percentage Problems	LAB 2 (9.1 – 9.6, 5.1 – 5.4)
2/24	6.5 - 6.7 Applications of Percentages 11.7 Solving Linear Inequalities	
2/26	18.1 Intersections and Unions 18.2 Intersections and Unions and Compound Inequalities	
2/29	12.1 Introduction to Graphing Review Test 2	LAB 3 (11.1 – 11.6)
3/2	Test 2 In Class (Wednesday)	
3/4	12.2 Graphing Linear Equations 12.3 Graph using Intercepts; Horizontal and Vertical Lines	
	March 7 through 13 Spring Break – No Class	
3/14	Review 12.2 and 12.3 12.4 Slope and its Applications	LAB 4 (6.1 – 6.7, 11.7, 18.1 – 18.2)
3/16	16.1 Functions and Function Notation 16.2 Domain and Range; Interval Notation	
3/18	16.3 Slope – Intercept Form of the line 16.4 Intercepts, Horizontal and Vertical Lines, Parallel and Perpendicular Lines	
3/21	Review slope, intercepts, graphing 16.5 Point- Slope Form	
3/23	17.1 Solving Systems of Linear Equations by Graphing 17.2 Solving Systems of Linear Equations by Substitution	
3/25	No Class – Good Friday	
3/28	17.3 Solving Systems of Linear Equations by Addition 17.4 Problem Solving with Systems of Equations	
3/30	13.1 Integers as Exponents Review Test 3	
4/1	Test 3 in Class (Friday)	

4/4	13.2 Exponents and Scientific Notation 13.3 Polynomials Classify and identify terms and degrees	LAB 6 (17.1 – 17.4)
4/6	13.4 Add and Subtract Polynomials 13.5 Multiply Polynomials	
4/8	13.6 Multiply Polynomials 13.7 Operations on Polynomials of Several Variables	
4/11	13.8 Dividing Polynomials	LAB 7 (13.1 – 13.4)
4/13	Review for Test 4	
4/15	Test 4 in Class (Friday)	
4/18	14.1 The Greatest Common Factor and Factoring by Grouping	LAB 8 (13.5 – 13.8)
4/20	14.2 Factoring Trinomials of the Form $x^2 + bx + c$	
4/22	14.3 Factoring Trinomials of the form $ax^2 + bx + c; a \neq 1$	
4/25	14.5 Factoring Binomials Factoring binomials, trinomials, and 4 term polynomials	
4/27	14.8 Solving Quadratic Equations by Factoring	
4/29	14.9 Applications of Quadratic Functions	
5/2	Review Test 5	LAB 9 (14.1 – 14.9)
5/4	Test 5 In Class	
5/6	Review for Final Exam	
5/9	FINAL EXAM In Class from 10 am to 12 pm Bring Bluebook, Scantron, Pencil, and Calculator	LAB 10

**MATH 0406 INTRODUCTORY ALGEBRA
COURSE OBJECTIVES FALL 2015**

Upon successful completion of this course, students will:	Textbook Reference
1. Identify, classify, graph, and use properties of operations on real numbers.	
Given a set of numbers, classify each as counting, whole, an integer, rational, irrational, and real.	10.2
Given two or more sets of numbers, find the intersection of the sets.	18.2
Given two or more sets of numbers, find the union of the sets.	18.2
Find the Least Common Multiple of two or more numbers	3.1
Simplify a rational number and add, subtract, multiply, and divide two rational numbers (no variables involved)	2.5, 2.6, 2.7, 3.2, 3.3, 3.4, 3.5, 3.6
Simplify a numerical expression containing one or more square roots of perfect squares.	9.6a
Find a decimal approximation of a square root using a calculator.	9.6b
Write a decimal in scientific notation and convert a number in scientific notation to decimal form.	13.2c
Identify and use the commutative, associative, distributive, identity, and inverse properties of real numbers.	10.6b, 10.7, 10.8a
2. Differentiate and apply a concept used to determine an exact or approximate value for perimeter, area, circumference, and length of a side of a right triangle.	
Find the perimeter and area of a rectangle and a triangle.	9.1, 9.2
Find the circumference and area of a circle and give both the exact answer and a decimal approximation.	9.3
Find the missing length of a side of a right triangle.	9.6c
Apply the Pythagorean Theorem.	9.6d
3. Solve a linear equation in one variable with three or more variable terms using multiple algebra skills.	
Identify the base and exponent of an exponential expression.	1.9a, 13.1
Simplify an arithmetic expression using the order of operations.	1.9cd, 3.7a, 10.8
Translate an English phrase into an algebraic expression.	10.1b
Evaluate an algebraic expression.	10.1a
Simplify an algebraic expression.	10.7, 10.8
Solve a linear equation in one variable.	11.1, 11.2, 11.3
Solve a literal equation for a specified variable.	11.4
Solve a linear inequality in one variable. Express the solution (i) as a graph, (ii) in set-builder notation, and (iii) in interval notation.	11.7, 18.1bc
Solve a compound linear inequality in one variable and express the solution (i) in set-builder notation, (ii) in interval notation, and (iii) as a graph.	18.2
4. Solve and apply problems involving percent and proportion.	
Solve percent problems.	6.1, 6.2, 6.3 and/or 6.4
Write a ratio as a fraction.	5.1, 5.2
Decide if a proportion is true using diagonal products.	5.3a
Solve a proportion.	5.3b
5. Identify, graph, find the domain and range of, and evaluate a function.	
Plot an ordered pair on the rectangular coordinate system.	12.1
Find an ordered pair solution for a specified linear equation in two variables and verify using the TABLE feature of a graphing calculator.	12.1, 12.2
Graph a linear equation on the rectangular coordinate system and verify using a graphing calculator.	12.2
Graph a vertical and a horizontal line.	12.3b, 16.4c
Determine the x- and y-intercepts (if appropriate) of a line given an equation, a graph, or a table.	12.3a, 16.4a

Solve a linear equation in one variable using the ZERO and INTERSECT features of the graphing calculator.	Supplement
Find the slope of a line given: (i) two points on the line, (ii) an equation of the line, (iii) a table of values, or (iv) a graph.	12.4, Supplement for (iii)
Write an equation in slope-intercept form, if applicable, given a linear equation.	12.2, 16.3
Write an equation of the line using point-slope or slope-intercept form given the slope and a point or given two points.	16.5
Determine whether a set of points, an equation, or a graph represents a function.	16.1, Supplement for points and equation
Identify the domain and range from a graph in interval notation.	16.2, 18.1b
Evaluate a function for a specified value.	16.1
6. Solve a system of two linear equations and interpret the solution graphically, algebraically, and in the context of the information provided, if necessary.	
Solve a system of linear equations in two variables by: (i) graphing manually and with a graphing calculator, (ii) substitution, and (iii) elimination.	17.1, 17.2, 17.3
Write a system of linear equations in two variables describing an application, solve the system, and interpret the solution.	17.4
Determine whether two equations represent parallel lines, perpendicular lines, or neither.	16.4d
7. Factor a polynomial and solve a quadratic equation by factoring.	
Simplify an expression, which contains an exponent that is an integer.	1.9c, 10.8d, 13.1b,f, 13.2
Identify a coefficient, term, factor, constant, and the degree of a specified polynomial.	13.3c
Classify a polynomial as a monomial, binomial, or trinomial as appropriate.	13.3b
Add, subtract, and multiply two polynomials.	13.4, 13.5, 13.6
Simplify a polynomial in two or more variables.	13.7
Divide a polynomial by a monomial or a binomial.	13.8
Factor a polynomial by finding the greatest common factor.	14.1
Factor a polynomial by grouping.	14.1
Factor a trinomial in the form $ax^2 + bx + c$, where $a \neq 0$, $a = 1$ or a is a common factor.	14.2
Factor a trinomial in the form $ax^2 + bx + c$, where $a \neq 0$, $a \neq 1$.	14.3, 14.4
Factor the difference of two squares.	14.5
Solve a quadratic equation by factoring.	14.8
8. Set up and solve an application with an appropriate linear, quadratic, or system of linear equations.	
Solve an application involving a linear equation in one variable.	11.6
Solve an application involving percent.	6.5, 6.6, 6.7a
Use a proportion to model an application.	5.4, 6.4
Solve an application involving a quadratic equation.	14.9
Solve an application requiring the Pythagorean Theorem.	9.6d, 14.9, 19.7
Solve an application requiring a system of equations.	17.4