

# Developmental Mathematics Curriculum

---

## DMAT 0066 – Concepts in Basic Mathematics

### **STUDENT LEARNING OUTCOMES:**

- ◆ After completing this course the student should be able to perform the four basic operations on whole numbers.
- ◆ After completing this course the student should be able to perform the four basic operations on fractions.
- ◆ After completing this course the student should be able to select and apply appropriate operations in order to solve word problems.

### **EDUCATIONAL COURSE OBJECTIVES:**

- ◆ Demonstrate knowledge of the base ten-numeration system using both words and symbols.
- ◆ Rounding whole numbers to the nearest ten, hundred, thousand, etc.
- ◆ Addition and Subtraction of whole numbers.
- ◆ Multiplication by one or more digits.
- ◆ Use inspection to multiply by powers of ten.
- ◆ Divide whole numbers with remainders using divisors of one or more digits.
- ◆ Divide whole numbers with zero in the quotient.
- ◆ Evaluate Expressions with Whole-Number Exponents
- ◆ Performed Arithmetic Operations in the Proper Order
- ◆ Identify prime and composite numbers and find the prime factorization of composite numbers.
- ◆ State the meaning of the numerator and denominator of fractions.
- ◆ Find equivalent fractions.
- ◆ Multiply and divide fractions.
- ◆ Add and subtract fractions with like and unlike denominators.
- ◆ Find least common denominator.
- ◆ Find fractional parts of numbers.
- ◆ Convert between mixed numbers and fraction notation.
- ◆ Multiply and divide mixed numbers.
- ◆ Add and subtract mixed numbers.
- ◆ Solve word problems using whole numbers, fractions.
- ◆ Convert between fraction notation and decimal notation. (Optional)

### **COURSE DESCRIPTION:**

This course is designed to develop the skills and understanding to perform the fundamental operations on whole numbers, fractions, and decimals. Topics include the base ten system, rounding, prime numbers, factors, least common multiples and conversions between decimals and fractions.

### **PREREQUISITE:**

An appropriate assessment test score.

**TEXTBOOK:** Basic College Mathematics, John Tobey & Jeffrey Slater, Prentice Hall, (6<sup>th</sup> edition), 2009. ISBN: 0-32-162788-1

### **COURSE COVERAGE:**

Chapter	Section to Cover	Topics
Ch. 1	1.1 – 1.8 (All Sections)	Operations on Whole Numbers
Ch. 2	2.1 – 2.9 (All Sections)	Operations on Fractions, Mixed Numbers and Applications.
Ch. 3	3.1 – 3.2	Using Decimals

# Developmental Mathematics Curriculum

---

## DMAT 0090 - Essential Mathematics

### STUDENT LEARNING OUTCOMES:

- ◆ After completing this course the student should be able to perform the four basic operations on rational numbers.
- ◆ After completing this course the student should be able to set up and solve a proportion.
- ◆ After completing this course the student should be able to calculate area, perimeter, or circumference of basic geometric shapes.

### EDUCATIONAL COURSE OBJECTIVES:

#### After completing this course, the student will be able to:

- ◆ Perform fundamental operations using whole numbers, integers, fractions, and decimals.
- ◆ Solve word problems involving proportions, percentages, and measurements.
- ◆ Identify and calculate area and perimeter of basic plane figures.
- ◆ Solve word problems using whole numbers, fractions, decimals and integers.
- ◆ Solve problems involving units' conversion in both English and metric systems.
- ◆ Solve simple linear equations.
- ◆ Solve problems using charts, graphs and tables.

### COURSE DESCRIPTION:

This course is designed to develop an understanding of fundamental operations using whole numbers, integers, fractions, decimals, and percentages to strengthen basic skills in mathematics. The course is planned primarily for students who need to review basic mathematical processes.

### PREREQUISITE:

DMAT 0066 or equivalent or an appropriate assessment test score.

**Textbook:** Basic College Mathematics, John Tobey & Jeffrey Slater, Prentice Hall, (6<sup>th</sup> edition), 2009.  
ISBN: : 0-32-162788-1

### COURSE COVERAGE:

Chapter	Sections to cover	Topics
Ch. 1	1.1 – 1.8 All Sections	Operations on whole numbers
Ch. 2	2.1 – 2.9 All Sections	Operations on fractions, mixed numbers and Applications.
Ch. 3	3.1 – 3.6 All Sections	Fractions to decimals and Operations on decimals
Ch. 9	9.1 – 9.5 All Sections	Operations on Integers and Scientific Notation.
Ch. 4	4.1 – 4.4 All Sections	Ratios, Proportions and Applications.
Ch. 5	5.1 – 5.4	Percents
Ch. 6	6.1 – 6.5	Measurements: Metric and American.
Ch. 7	7.1 – 7.4 and 7.7	Geometry: Angles, Area and Perimeter.

# Developmental Mathematics Curriculum

---

## DMAT 0097 – Algebra Fundamentals I

### STUDENT LEARNING OUTCOMES:

- ◆ After completing this course the student should be able to simplify an algebraic expression.
- ◆ After completing this course the student should be able to solve linear equations.
- ◆ After completing this course the student should be able to graph linear equations.

### EDUCATIONAL COURSE OBJECTIVES:

After completing this course, the student will be able to:

- ◆ Perform operations on real numbers and polynomials.
- ◆ Simplify polynomial expressions.
- ◆ Apply properties of exponents.
- ◆ Graph linear equations in two variables.
- ◆ Solve linear equations in one and two variables, and application problems involving linear equations.
- ◆ Perform common factoring, difference of two squares, and trinomial factoring.
- ◆ Solve linear systems of equations in two variables.

### COURSE DESCRIPTION:

This is a course in introductory algebra, which includes operations on real numbers, polynomials, special products and factoring, and linear equations. Also covered are graphs, systems of linear equations and simple exponents.

### PREREQUISITE:

Developmental Mathematics 0096 or 0090 or an appropriate assessment test score.

**Textbook:** Elementary & Intermediate Algebra, Sullivan & Struve (2e), 2010.

ISBN: 10 0-32-166443-4.

### COURSE COVERAGE:

CHAPTER	SECTIONS TO COVER	TOPICS
Ch. 1	1.4 – 1.8	Real numbers, exponents and algebraic expressions.
Ch. 2	2.1 – 2.7	Linear Equations and application problems.
Ch. 3	3.1 – 3.2	Coordinate system, Introduction to graphing and equations of the line.
Ch. 4	4.1 – 4.4	Solving systems of linear equations in two variables and applications.
Ch. 5	5.1 – 5.6	Operations on polynomials and rules of exponents.
Ch. 6	6.1 – 6.5	Factoring Polynomials by GCF Method, Factoring by Grouping, Factoring Trinomials and Special Products.

# Developmental Mathematics Curriculum

---

## **DMAT 0098: Algebra Fundamentals II**

### **STUDENT LEARNING OUTCOMES:**

- ◆ After completing this course the student should be able to solve quadratic equations.
- ◆ After completing this course the student should be able to factor polynomial expressions.
- ◆ After completing this course the student should be able to simplify algebraic expressions involving square roots.

### **EDUCATIONAL COURSE OBJECTIVES:**

#### **After completing this course, the student will be able to:**

- ◆ Apply properties of real numbers.
- ◆ Graph and write equations of lines using: two ordered pairs; the slope and a point, x & y intercepts; the slope and y-intercept.
- ◆ Graph and write equations of parallel and perpendicular lines.
- ◆ Graph linear inequalities in two variables.
- ◆ Solve absolute value equations and inequalities.
- ◆ Factor polynomials.
- ◆ Apply the definition and rules of exponents to simplify expressions.
- ◆ Simplify expressions involving square roots.
- ◆ Add and subtract complex numbers.
- ◆ Evaluate complex numbers with values of  $i$ .
- ◆ Simplify rational expressions.
- ◆ Solve quadratic equations by factoring, completing the square, and using the quadratic formula.

### **COURSE DESCRIPTION:**

This is a course in introductory algebra, which includes rational expressions, inequalities and quadratic equations. Also included are properties of real numbers, the straight line, absolute value equations and advanced factoring.

### **PREREQUISITE:**

One year of high school algebra and an appropriate assessment test score or Developmental Mathematics 0097 or 0091.

# Developmental Mathematics Curriculum

---

## COURSE SCHEDULE:

### Suggested chapter sequence

CHAPTER	SECTIONS TO COVER	TOPICS
Ch. 3	3.1 -3.6	Coordinate system and graphing lines. Slope. Writing equations of lines. Graphing linear inequalities.
Ch. 2	2.8	Solving linear inequalities.
Ch. 3	3.7	Graphing linear inequalities.
Ch. 4	4.6	Systems of Linear Inequalities
Ch. 8	8.6 and 8.7	Compound inequalities. Absolute value equations and inequalities.
Ch. 6	6.1 – 6.6	Factoring techniques and solving quadratic equations by factoring.
Ch. 1	1.6	Properties of real numbers.
Ch. 7	7.1 – 7.6	Operation on rational expressions. Complex rational expressions.
Ch. 9	9.1 and 9.9	Square roots and operations with complex number.
Ch. 12	12.1	Distance Formula.
Ch. 10	10.1 and 10.2	Solve quadratic equations by completing the square, and using the quadratic formula.

# Developmental Mathematics Curriculum

---

## DMAT 0099 Algebra Fundamentals III

### **STUDENT LEARNING OUTCOMES:**

- ◆ After completing this course the student should be able to solve quadratic, radical, and rational equations.
- ◆ After completing this course the student should be able to graph a parabola, finding its vertex and intercepts.
- ◆ After completing this course the student should be able to identify domain, range, and intercepts of linear, and non-linear functions.

### **EDUCATIONAL COURSE OBJECTIVES:**

#### **After completing this course, the student will be able to:**

- ◆ Perform fundamental operations on polynomials and factoring.
- ◆ Perform operations with rational and radical expressions, including complex numbers.
- ◆ Solve quadratic, radical, and rational equations.
- ◆ Solve quadratic and rational inequalities.
- ◆ Solve systems of linear and nonlinear equations and inequalities.
- ◆ Simplify expressions involving rational exponents and radicals.
- ◆ Understand the meaning of relation and function.
- ◆ Identify the domain and range of a function, as well as the graph.
- ◆ Find the inverse of a function.
- ◆ Simplify exponential and logarithmic expressions.
- ◆ Solve exponential and logarithmic equations.

### **COURSE DESCRIPTION:**

This is a course in intermediate algebra, which further develops rational expressions, roots, exponents and radicals. Also covered are quadratic inequalities, relations functions and graphs and systems of non-linear equations.

### **PREREQUISITE:**

One year of high school algebra and an appropriate assessment test score or Developmental Mathematics 0098.

## Developmental Mathematics Curriculum

---

### COURSE SCHEDULE:

CHAPTER	SECTIONS TO COVER	TOPICS
Ch. 7	7.1 - 7.7	Rational Expressions. Rational Equations.
Ch. 8	8.1 - 8.4	Functions, relations and graphs.
Ch. 9	9.1 - 9.8	Radicals. Radical equations. Rational exponents.
Ch. 6	6.6	Quadratic equations by factoring
Ch. 10	10.4 - 10.6	Quadratic functions. Quadratic inequalities.
Ch. 12	12.1, 12.2 and 12.6	Systems of nonlinear equations.
Ch. 11	11.1 -11.5	Exponential and logarithmic functions. Properties of logarithms. Exponential and logarithmic equations.

## Developmental Mathematics Curriculum

---

**ATTENDANCE POLICY:** You are expected to regularly attend all classes in which you are enrolled. Students have the responsibility to attend class and to consult with the instructor when an absence occurs.

Instructors are responsible for describing attendance policies and procedures to all students enrolled in their class. If a student is unable to complete a course (or courses) in which he/she is registered, it is the responsibility of the student to withdraw from the course by the appropriate date. (The date is published in the academic calendar each year and in each semester's class schedule). If a student does not withdraw, he/she will receive a performance grade, usually a grade of "F".

Students who are absent from class for the observance of a religious holiday may take an examination or complete an assignment scheduled for that day within a reasonable time after the absence if, not later than the 15th day of the semester, the student notified the instructor(s) that the student would be absent for a religious holiday. Sec. 51.911 TX Educ. Code.

**DROP POLICY:** To drop a class or withdraw from the college, students must follow the prescribed procedure. It is the student's responsibility to drop or withdraw. Failure to do so will result in receiving a performance grade, usually grade of "F". Should circumstances prevent a student from appearing in person to withdraw from the college, the student may withdraw by mail or by writing the Registrar. A drop/withdrawal request by mail must be received in the Registrar's Office by the semester deadline. No drop or withdrawal requests are accepted by telephone. Students who drop a class or withdraw from the College before the semester deadline receive a "W" (Withdraw) in each class dropped. The deadline for receiving a "W" is indicated on the academic calendar and the current class schedule. If you are unable to complete this course, you must withdraw from it by the drop date. See "Refund of Tuition" for possible eligibility for a refund.

### **STOP BEFORE YOU DROP**

**Six Drop Rule:** For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career, unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops you cannot drop any other courses with a "W". Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information on the 6 drop rule, you may access: <https://www1.dcccd.edu/6drop>.

**"E" GRADE OPTION:** Your instructor has the **option** to award a grade of "E" provided certain conditions are met. The "E" is a grade that indicates that the student met all requirements for attendance and participation but could not achieve a "C" or higher. It does not affect the grade point average. All **THREE** of the following conditions must be met in the current semester:

# Developmental Mathematics Curriculum

---

- 1) Consecutive class hours absent are **less than six hours**, and
- 2) Total class hours absent are **less than nine hours**,
- 3) Course participation has been productive and non-disruptive, all assignments are completed and the grade earned is below C.

**EVEN IF YOU MEET CONDITIONS 1, 2, AND 3, YOUR INSTRUCTOR IS NOT OBLIGATED TO GIVE YOU AN "E" GRADE.**

**INCOMPLETES:** An incomplete grade of "I" may be given when an unforeseen emergency prevents you from completing the work in a course. The "I" must be converted to a performance grade (A-F) within 90 days after the first day of classes in the subsequent regular semester. If the work is not completed after 90 days, the "I" is converted to a performance grade, usually an "F". An Incomplete Contract is used to assign an incomplete grade and states the requirements for the satisfactory completion of the course. The Incomplete Contract must be agreed upon and signed by the Instructor, the student, and the division dean and submitted with the final grade report. When an Incomplete Contract must be submitted without your signature, the instructor must include a statement indicating that you are aware of and agree with the contract.

**FINANCIAL AID:** If you are receiving Financial Aid grants or loans, you must begin attendance in all classes to be certified as attending class. Do not drop or stop attending any class without consulting the Financial Aid Office. Changes in your enrollment level and failing grades may require that you repay financial aid funds. Failure to contact the instructor will result in your name being submitted to the Financial Aid Office as a "non-attende".



**STUDENTS WITH LEARNING, MENTAL OR PHYSICAL DISABILITIES:**

Students requesting accommodation due to the presence of a disability must identify themselves in a timely fashion and demonstrate/document the need for accommodations through the Disability Services Office (DSO). For information regarding the rights and responsibilities of students with disabilities, contact DSO at (972) 860-8348 voice/TDD.

**CAMPUS POLICE:** In addition to providing general law enforcement on campus, the campus police respond to *all* emergencies. In *any* emergency situation, you can get immediate help by any of the following methods:

- call 911 on any campus extension
- use any red phone in the hallways, or any "blue light" call box in the parking lots
- call **972-860-4290** from any off campus extension

**GRADE REPORT:** Grade reports are no longer mailed. Convenient access is available online or by telephone. Just use your student identification number when you log in to e-Connect or call DCCCD Touch Tone Services. Web site address: <http://econnect.dcccd.edu/>. Telephone number (972) 613-1818.

# Developmental Mathematics Curriculum

---

**STUDENT E-MAIL:** Legal privacy issues prevent your instructor from discussing your work or your grades on commercial e-mail accounts. If you wish to send your papers as attachments to an e-mail (and the instructor permits it), or if you have a question about your grade, you must open a student e-mail account. The account is free. You may set it up by going to [www.dcccd.edu](http://www.dcccd.edu) and click on Student Services, Online Services, and Student NetMail.

**PRINTING ON CAMPUS:** Printing in the Computer Lab (L-108), Library, and Learning Assistance Center will cost 5 cents a page. Students must bring a \$1.00, \$5.00, \$10.00, or \$20.00 bill to the lab to create an account. Accounts must be created before attempting to print. No change is made in the lab. Once the money is in the bill acceptor, it cannot be retrieved. Cash refunds are not possible. Accounts stay active as long as the account has value.

**STANDARD OF CONDUCT/CLASSROOM CONDUCT:** No cell phones are permitted in the class and pagers should be placed on mute. Students may be asked to leave the classroom if in violation of this policy. No food or drinks are allowed in the classroom. All rules, regulations, and guidelines will be followed.

**CODE OF STUDENT CONDUCT:** Web site address: <http://dcccd.edu>

## **Responsibility**

Each student shall be charged with notice and knowledge of the contents and provisions of the District's policies, procedures, and regulations concerning student conduct. All students shall obey the law, show respect for property constituted authority, and observe correct standards of conduct. In addition to activities prohibited by law, the following types of behavior shall be prohibited.

Scholastic dishonesty shall constitute a violation of these rules and regulations and is punishable as prescribed by college policies. Scholastic dishonesty shall include, but not limited to, cheating on a test, plagiarism, and collusion. "Cheating on a test" shall include:

1. Copying from another student's test paper
2. Using test materials not authorized by the person administering the test.
3. All forms of academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion.
4. Collaborating with or seeking aid from another student during a test without permission from the test administrator.
5. Knowingly using, buying, selling, stealing, or soliciting, in whole or in part, the contents of an unadministered test.
6. The unauthorized transporting or removal, in whole or in part, of the contents of the unadministered test.
7. Substituting for another student, or permitting another student to substitute for one's self, to take a test.

## Developmental Mathematics Curriculum

---

8. Bribing another person to obtain an unadministered test or information about an unadministered test.

“Plagiarism” shall be defined as the appropriating, buying, receiving as a gift, or obtaining by any means another’s work and the unacknowledged submission or incorporation of it in one’s own written work.

“Collusion” shall be defined as the unauthorized collaboration with another person in preparing written work for fulfillment of course requirements.

Students should be aware of disciplinary actions for all forms of academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion. Your College Catalog and the DCCCD Catalog contain the entire Student Code of Conduct, which is also on the Internet at <http://dccc.edu>. **In this course, you will receive a grade of “0” on that particular assignment or test if you are guilty of cheating on assignments, tests, or plagiarism.** Please do not put yourself in a situation that would result in such action.

**SEXUAL HARASSMENT:** Eastfield College has a zero tolerance policy on sexual harassment. All students shall report complaints of sexual harassment informally to the college Human Resources Director or formally to the Vice Chancellor of Educational Affairs.

### **EMERGENCY & INCLEMENT WEATHER PROCEDURES:**

In case of emergency (which may include power or air conditioning outages, fires, etc.) or inclement weather conditions, Eastfield students should listen to KEOM-FM Radio Station (88.5) as the primary media source. In partnership with the Mesquite Independent School District, Eastfield College Administration will notify KEOM immediately after a decision is made to cancel classes on any given day of inclement weather or for emergency purposes. Students may also monitor other local radio and television stations. The earliest an announcement may be broadcast on KEOM Radio is 6 a.m. Students may also refer to the Eastfield College web page [www.eastfieldcollege.com](http://www.eastfieldcollege.com) for the Inclement Weather announcement under News/Features.

**ADDITIONAL RESOURCES:** The **LEARNING ASSISTANCE CENTER** provides free tutoring in math, writing, and other subjects. Students are encouraged to take advantage of the **LAC** for additional help in their course work. The **LAC** is located in room **C-236**, and the phone number is 972-860-7177. The **MATH SPOT** also provides free tutoring in math. It is located on the 3<sup>rd</sup> floor corner between the C and S building. The tutoring schedule varies each semester.

### **SYLLABUS REVISION:**

The guideline in this syllabus may be changed, deleted, or amended any time by the instructor. The attached course outline is intended as an aid in helping you know your responsibilities for the semester. It is possible that some changes in the course outline or

# Developmental Mathematics Curriculum

---

class policies will be made during the semester. Any changes that are made to the class policies or course outline will be announced in class.

## **TEXAS SUCCESS INITIATIVE (TSI) INFORMATION:**

The policies and procedures regarding the TSI are made by the Texas Higher Education Coordinating Board, which is the state agency responsible for administering the law. These policies are published by the THECB. On the Eastfield campus, your best sources of information about TSI are:

- 1) The Eastfield Advising Center, (972) 860-7106, or
- 2) The Eastfield Testing and Assessment Center, (972) 860-7011

The TSI requires every incoming student to be assessed prior to enrollment to determine college readiness in Reading, Writing, and Mathematics. Students who are determined not to be college ready must take the Developmental Education necessary to achieve college readiness.

**TSI Advice:** Achieving college readiness will usually mean completing the prerequisite courses for college level mathematics such as College Algebra. Meeting this standard could mean completing the DMAT sequence from your starting point through DMAT 0099.

## **STRATEGIES TO BE SUCCESSFUL:**

1. Attend every class.
2. Ask questions.
3. Read each chapter.
4. Show all work.
5. Check your answers in the appendix.
6. Highlight problems for which you have questions.
7. Review class notes.
8. STUDY FOR TESTS.

To successfully complete this course **you must be diligent**. Make sure you set aside a period of time each day that you can work on the material, and do not fall behind the schedule attached to this syllabus. Work **ALL** the assigned homework problems as a minimum, and more if you feel you have not quite mastered the material. If you have a problem, contact me immediately so that you don't fall behind. **The key to success in this course is doing your work every day!**