Course Description

An introduction to mathematical topics applicable to a variety of academic areas. Topics include linear functions and graphs, linear inequalities and graphs, systems of equations, matrices and matrix algebra, linear programming, set theory, logic, and conversion between binary, decimal, and hexadecimal.

3 credit hours
*This is part of the general education core.

Prerequisite: Level 2 placement or higher in Math or concurrent enrollment in MATH 0845.

Materials Required:

The following materials are required:

- **MyMathLab Access Code:** MyMathLab Access Code is required to access homework and tests from www.coursecompass.com. The access code can be purchased from the bookstore ISBN 0-321-19991-X or from the website directly by using a credit or debit card. An e-textbook is included in the online software.

- **Calculator:** TI-83/84 (plus) graphing calculator

Optional items:

- **Textbook and MyMathLab Access Code:**

OR
• **Textbook only:**
  
  
  
**Course Outcomes**

Upon completion of this course, the student will be able to:

1. Solve problems using mathematics, and determine if solutions are reasonable.  
   a. Solve applications of set theory and logic and determine if the solutions are reasonable.

2. Apply mathematical concepts to solve real-life problems using formulas (deduction) and interpret the meaning of the solution.  
   a. Use systems of equations and linear programming to solve application problems and interpret the meaning of the solution.

3. Construct meaningful connections (transfer of knowledge) between mathematics and other disciplines.

4. Apply technology for mathematical reasoning and problem solving.  
   a. Use technology to perform matrix algebra, solve systems of equations, and solve applications problems.

5. Analyze data/graphs by using mathematical modeling and/or statistical reasoning.  
   a. Analyze linear functions and graphs by using mathematical modeling.

**Course Policies**

• **Attendance:** Attendance in this class is required. Students are expected to be on time for and remain until the completion of all class meetings. Students who are marked absent for two consecutive weeks of class will receive an FA grade (equivalent to an F for GPA purposes). If you would like to petition for an exemption after having missed two weeks, you may do so by contacting the Dean of Math and Natural Sciences. Successful petitions will require documentation demonstrating an acceptable reason for having missed two consecutive weeks of class. (Dean of Math and Natural Sciences: 615-353-3117, K-240 on Main Campus).

• **Tardies:** Students are expected to come to class on time. Being tardy disrupts the class (see “Classroom Behavior” section below). Students with repeated tardies will risk earning an FA (see “Attendance” above) and will be required to meet with the Dean of Students before being allowed to return to class. If you have circumstances that cause you to regularly be late to class, you need to enroll in a section for which you can arrive on time.
Grading: The determination of your final grade is based on the following:

- Homework: 100 points
- Quizzes: 100 points
- 4 Tests: 600 points (150 points each)
- Final Exam: 200 points

There will be 4 tests and a final exam for this course. Tests will not be administered after the test date. If a test is missed, the final exam for the course will count double. If any additional tests are missed, the student will receive a zero on the tests. A student that completes all tests, but scores poorly on one test, can replace that test grade by the final exam grade, provided the final exam grade is higher than the lowest test grade. Homework and Quizzes are completed in MyMathLab. Homework and quizzes are due on the day of the relevant test, usually at the moment that test starts. Late work will not be accepted – no exceptions. There is no extra credit in this course.

The final letter grade is based on the following scale:

- 900-1000 points: A
- 800-899 points: B
- 700-799: C
- 600-699: D
- 0-599: F
- FA – failure, attendance related
- FN – failure, never attended class

Classroom behavior: Students are expected to respect and support others to create a positive learning environment. Food and drink should be discarded before entering the classroom. All electronic devices (cell phones, pagers, and other electronic devices) must be turned off, or on vibrate, and out of sight during class unless prior consent has been given by the instructor. Students wanting to make use of an electronic note-taking device (laptop, ipad, etc.) must see the instructor and sign a ‘use-contract’ prior to using the device.

Inclement Weather Policy:

If classes at NSCC are cancelled (this will be posted to the school website in the announcement box at the top of the page and I will post it to our NSOnline shell as soon as I know), I will post a required assignment to our NS Online shell so you can continue to work. It is your responsibility to do the assignment so that you are prepared for the next class.

ADA Statement:

Please contact the Access Services Coordinators at 615-353-3721 or 615-353-3741 if you would like to arrange ADA accommodations.
Class Misconduct and Procedures:

Nashville State Community College has a zero tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary sanctions.

The instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity. He/she can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or in conduct which violates the general rules and regulations of the College.

Disruptive behavior in the classroom may be defined as, but is not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupt the flow of instruction or prevent concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), and the continued use of any electronic or other noise or light emitting device which disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.). If a student disrupts the classroom, they may be removed by security. The student will not be allowed to return to class until the issue has been resolved with the Dean of Students.

Please be aware that children are not allowed in class or unattended on campus.

Academic Dishonesty:

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. “Plagiarism may result from: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words” (A Writer’s Reference 331). Academic dishonesty may be defined as, but is not limited to, intentionally trying to deceive by claiming credit for the work of another person, using information from a web page or source without citing the reference, fraudulently using someone else’s work on an exam, paper, or assignment, recycling your own work from another course, purchasing papers or materials from another source and presenting them as your own, attempting to obtain exams/materials/assignments in advance of the date of administration by the instructor, impersonating someone else in a testing situation, providing confidential test information to someone else, submitting the same assignment in two different classes without requesting both instructor’s permission, allowing someone else to copy or use your work, using someone else’s work to complete your own, altering documents, transcripts or grades, and forging a faculty/staff member’s signature. In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty the instructor has the authority to assign an “F” or a “Zero” for the exercise, paper, or examination or to assign an “F” for the course.
Topics Covered

Number bases (not in textbook)
Arithmetic with Number Bases
1.1 Slopes and Equations of Lines
1.2 Linear Functions and Applications
Test 1
2.1 Solution of Linear Systems by the Echelon Method
2.2 Solution of Linear Systems by the Gauss-Jordan Method
2.3 Addition and Subtraction of Matrices
2.4 Multiplication of Matrices
2.5 Matrix Inverses
Test 2
3.1 Graphing Linear Inequalities
3.2 Solving Linear Programming Problems Graphically
3.3 Applications of Linear Programming
Test 3
7.1 Sets
7.2 Applications of Venn Diagrams
Test 3
6.1 Statements
6.2 Truth Tables and Equivalent Statements
6.3 The Conditional and Circuits
6.4 More on the Conditional
6.5 Analyzing Arguments and Proofs
6.6 Analyzing Arguments with Quantifiers
Test 4