Instructor's Name:

Office Location:

Office Hours:

Office Phone:

E-mail:

Course Description
A course that covers the topics of elementary mathematics needed for applications in the vocational and technical curriculum. Topics covered include measurement, formulas, ratio and proportions, and the metric system.

Illinois Articulation Initiative (IAI) number: N/A

Credit and Contact Hours:
Lecture 3
Lab 0
Credit Hours 3

Prerequisites: Satisfactory placement test score or grade of “C” or better in Math 090 or Math 091 or equivalent. Not intended for transfer.

Books, Supplies, and Supplementary Materials

A. Textbooks


Publisher: Thomson Brooks/Cole

B. Other Required Materials

scientific calculator

Methods of Instruction:
Student Learning Outcomes: General Education Student Learning Outcomes:
Students will demonstrate the ability to accurately apply correct mathematical methods and techniques in various applications such as applied sciences, theoretical mathematics, physics, natural sciences and other applied sciences.

Objectives

Upon completion of this course you will be able to:

1. Add, subtract, multiply and divide whole numbers.
2. Perform the order of operations.
3. Find the absolute value of numbers.
4. Add, subtract, multiply and divide signed integers.
5. Factor counting numbers into prime numbers.
6. Evaluate formulas involving signed numbers & fractions.
7. Work application problems involving signed numbers.
8. Simplify fractions.
9. Round whole numbers, fractions, and decimals.
10. Convert mixed numbers to improper fractions and vice versa.
11. Add, subtract, multiply, and divide fractions and mixed numbers.
12. Convert units within the English system.
13. Work applications with fractions, decimals, and percent.
14. Read decimal numbers.
15. Convert common fractions to decimal fractions.
16. Add, subtract, multiply, and divide exact decimal fractions.
17. Multiply powers of 10.
18. Place numbers in scientific notation.
19. Multiply numbers in scientific notation.
20. Work problems involving percent.
21. Convert units within the metric system.
22. Convert from the English system to the metric system and vice versa for mass, liquid, and distance.
23. Distinguish between exact and approximate numbers.
24. Express the “Precision,” “Greatest Possible Error,” “Significant Digits,” and “Accuracy” for a given set of measurements.
25. Compute relative error of measurements and percentages.
26. Read circular scales, uniform scales, dial gauges, and non-uniform numbers.
27. Express the tolerance interval for a measurement.
28. Use order of operations to simplify and evaluate algebraic expressions.
29. Express the ratio as the means of comparing two quantities.
30. Solve problems involving proportions.
31. Solve (direct, inverse, and combination) variation problems.
32. Define "quadrilateral," "square," "rectangle" and "trapezoid."
33. State and use the formulas for the areas and perimeters of a square, rectangle and trapezoid.
34. Define "triangle," "equilateral triangle," "isosceles triangle," "scalene triangle," "right triangle," "obtuse triangle" and "acute triangle."
35. State and use the formulas for the area and perimeter of a triangle.
36. State and use the Pythagorean theorem for a right triangle.
37. Define "circle" and state and use formulas for the area and circumference of a circle.
38. Convert degree measure to radian measure and conversely.
40. Define "prism" and state and use formulas for the volume and surface area of a prism.
41. Define "cylinder" and state and use formulas for the volume and surface area of a cylinder.
42. Define "pyramid" and state and use formulas for the volume and surface area of a pyramid.
43. Define "cone" and state and use formulas for the volume and surface area of a cone.
44. Define "sphere" and state and use formulas for the volume and surface area of a sphere.
45. Make bar graphs, circle graphs, broken-line graphs and other graphs.
46. Determine the average measurements and percentiles of a set of data.
47. Work with grouped data.
48. Determine the variance and standard deviation of a set of data.

**TOPICAL OUTLINE**

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<thead>
<tr>
<th>Weeks</th>
<th>Topic and Class Activity</th>
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<tr>
<td>1 &amp; 2</td>
<td>Basic Concepts</td>
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<td>3 &amp; 4</td>
<td>Signed Numbers</td>
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<td>5 &amp; 6</td>
<td>The Metric System</td>
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<td>7 &amp; 8 &amp; 9</td>
<td>Measurement</td>
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<td>12 &amp; 13 &amp; 14</td>
<td>Geometry</td>
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<tr>
<td>15 &amp; 16</td>
<td>Basic Statistics</td>
</tr>
</tbody>
</table>

Chapters 1 - 4, 7, 12 and 15 in *Elementary Technical Mathematics, 11th Ed.*, Ewen/Nelson
Graded Assignments and Policies

Graded Assignments
In class Quizzes 0 – 20%
Participation 0 - 5 %
Projects 0 – 20%
Homework 0 – 30%
Tests 50 - 85%
Final 15 – 30%

Grading Policy
The individual instructor will determine which items he or she considers essential for the student to memorize without error and test accordingly.

Each instructor will set minimum standards for performance on tests.

Major Tests and Quizzes
The individual instructor will determine which items he or she considers essential for the student to memorize without error and test accordingly. Each instructor will set minimum standards for performance on tests. A comprehensive final examination will be given.

Classroom Policies and Procedures

General Information

Attendance Policy

Make-up Policy

Extra-credit Policy

Final Exam Information
A comprehensive final examination will be given.

Academic Honor Code
The objective of the academic honor code is to sustain a learning-centered environment in which all students are expected to demonstrate integrity, honor, and responsibility, and recognize the importance of being accountable for one’s academic behavior.

College Statement about grades of “F” and Withdrawal from Class
Students may withdraw from a course by processing an add/drop form during regular office hours through the Registration and Records Office at Main Campus or Romeoville Campus, or by phone at 815-744-2200. Please note the withdrawal dates listed on your bill or student schedule. Every course has its own withdrawal date. Failure to withdraw properly may result in a failing grade of “F” in the course.

At any time prior to the deadline dates established, an instructor may withdraw a student from class because of poor attendance, poor academic performance or inappropriate academic behavior, such as, but not limited to, cheating or plagiarism.

**Intellectual Property**
Students own and hold the copyright to the original work they produce in class. It is a widely accepted practice to use student work as part of the college’s internal self-evaluation, assessment procedures, or other efforts to improve teaching and learning and in promoting programs and recruiting new students. If you do not wish your work to be used in this manner, please inform the instructor.

**Student Code of Conduct**
Each student is responsible for reading and adhering to the Student Code of Conduct as stated in the college catalog.

**Sexual Harassment** Joliet Junior College seeks to foster a community environment in which all members respect and trust each other. In a community in which persons respect and trust each other, there is no place for sexual harassment. JJC has a strong policy prohibiting the sexual harassment of one member of the college community by another. See the Catalog or Student Handbook.

**Student Support** [http://jjc.edu/services-for-students/pages/default.aspx](http://jjc.edu/services-for-students/pages/default.aspx)

   Student Accommodations and Resources (StAR): If you need disability-related accommodations, specialized tutoring, or assistive technology in this class, if you have emergency medical information you wish to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class. New students should request accommodations and support by scheduling an appointment with the Student Accommodations and Resources (StAR) Office, Campus Center 1125, (815) 280-2230.

b. Tutoring: [http://jjc.edu/tlc/Pages/default.aspx](http://jjc.edu/tlc/Pages/default.aspx)

c. Counseling and Advising: [http://www.jjc.edu/counselingadvising/Pages/default.aspx](http://www.jjc.edu/counselingadvising/Pages/default.aspx)

d. Academic Resources: [http://www.jjc.edu/academic-resources/Pages/default.aspx](http://www.jjc.edu/academic-resources/Pages/default.aspx)

e. Support Programs and Services: [http://www.jjc.edu/support-programs-services/Pages/default.aspx](http://www.jjc.edu/support-programs-services/Pages/default.aspx)

f. Technology Support: [http://jjc.edu/services-for-students/Pages/technology-support.aspx](http://jjc.edu/services-for-students/Pages/technology-support.aspx)

g. My Degree Progress: My Degree Progress is a computerized system to track a student’s progress toward graduation. The report indicates every course and places
these courses into their appropriate category as a General Education, Major Course, or Elective, according to the degree requirements. This tool is useful for preparing before an advising appointment, for planning, for registering, and for checking that the student is on track for graduation. [https://eresources.jjc.edu](https://eresources.jjc.edu)