Instructor's Name:
Office Location:
Office Hours:
Office Phone:
E-mail:

Course Description
A course that covers the topics of intermediate mathematics needed for applications in the vocational and technical curriculum. Topics covered include linear and quadratic equations, plane and solid geometry, right triangle trigonometry, and basic topics in statistics.

Illinois Articulation Initiative (IAI) number:  N/A

Credit and Contact Hours:
<table>
<thead>
<tr>
<th></th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisites: Satisfactory placement test score or grade of “C” or better in Math 107 or Math 094. Not intended for transfer.

Books, Supplies, and Supplementary Materials

A. Textbooks


Publisher: Tomson Brooks/Cole

B. Other Required Materials

scientific calculator

Methods of Instruction:
Lecture

**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. Explain "ordered pairs."
2. Graph on a rectangular coordinate system the algebraic relationships given in an equation.
3. Define the slope of a line.
4. Determine the slope of a line.
5. Find the equation of a line given certain data.
6. Solve systems of two linear equations in two variables graphically and algebraically.
7. Factor algebraic expressions.
8. Solve quadratic equations in one variable.
9. Determine the nature of the roots of a quadratic equation by use of its discriminant.
10. Solve verbal problems which can be interpreted by a quadratic equation in one variable.
11. Define imaginary numbers and use them for solutions of quadratic equations.
12. Define "quadrilateral," "square," "rectangle" and "trapezoid."
13. State and use the formulas for the areas and perimeters of a square, rectangle and trapezoid.
15. State and use the formulas for the area and perimeter of a triangle.
16. State and use the Pythagorean theorem for a right triangle.
17. Define "circle" and state and use formulas for the area and circumference of a circle.
18. Convert degree measure to radian measure and conversely.
20. Define "prism" and state and use formulas for the volume and surface area of a prism.
21. Define "cylinder" and state and use formulas for the volume and surface area of a cylinder.
22. Define "pyramid" and state and use formulas for the volume and surface area of a pyramid.
23. Define "cone" and state and use formulas for the volume and surface area of a cone.
24. Define "sphere" and state and use formulas for the volume and surface area of a sphere.
25. Define the trigonometric functions of an acute angle and recognize the reciprocal functions and co functions.

26. Find trig function values for acute angles.
27. Solve for missing parts of a right triangle using trig functions.
28. Use trigonometric functions to solve application problems.
29. Find trig functions values for any angle, positive or negative.
30. Graph the sine and cosine curves.

31. Determine the period, amplitude and phase shift for sine and cosine curves.
32. State and use the law of sines.
33. State and use the law of cosines.
34. Solve non-right triangles using the law of sines and/or law of cosines.
35. Solve problems involving vectors.

36. Make bar graphs, circle graphs, broken-line graphs and other graphs.
37. Determine the average measurements and percentiles of a set of data.
38. Work with grouped data.
39. Determine the variance and standard deviation of a set of data.

**TOPICAL OUTLINE**

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Topic or Class Activity</th>
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<tbody>
<tr>
<td>1 &amp; 2</td>
<td>Polynomials</td>
</tr>
<tr>
<td>3 &amp; 4</td>
<td>Equations &amp; Formulas</td>
</tr>
<tr>
<td>5</td>
<td>Graphing Linear Equations</td>
</tr>
<tr>
<td>6 &amp; 7</td>
<td>Systems of Linear Equations</td>
</tr>
<tr>
<td>8 &amp; 9</td>
<td>Factoring Algebraic Expressions</td>
</tr>
<tr>
<td>10 &amp; 11</td>
<td>Quadratic Equations</td>
</tr>
<tr>
<td>12 &amp; 13</td>
<td>Right Triangle Trigonometry</td>
</tr>
<tr>
<td>14 &amp; 15&amp; 16</td>
<td>Trigonometry with Any Angle</td>
</tr>
</tbody>
</table>

Chapters 5, 6, 8, 9, 10, 11, 13 and 14 in *Elementary Technical Mathematics, 11* Ed., Ewen/Nelson

**Graded Assignments and Policies**

**Graded Assignments**

<table>
<thead>
<tr>
<th>In class Quizzes</th>
<th>0 – 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>0 - 5%</td>
</tr>
<tr>
<td>Projects</td>
<td>0 – 20%</td>
</tr>
<tr>
<td>Homework</td>
<td>0 – 30%</td>
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<tr>
<td>Tests</td>
<td>50 - 85%</td>
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</table>

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TMAT 108 Course Syllabus

Mathematics Department
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)

a. Disability Services: [http://www.jjc.edu/disability-services/Pages/default.aspx](http://www.jjc.edu/disability-services/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)