Instructor's Name:

Office Location:

Office Hours:

Office Phone:

E-mail:

Course Description
The course is designed to provide the necessary foundation in algebra, geometry, and trigonometry for success in technical courses. It is more rigorous than Math 107 - 108.

Illinois Articulation Initiative (IAI) number: N/A

Credit and Contact Hours:
Lecture 5
Lab 0
Credit Hours 5

Prerequisites: Satisfactory placement test score or grade of C or better in Math 095 and Math 098 or equivalent.

Books, Supplies, and Supplementary Materials

A. Textbooks

Required: Basic Technical Mathematics (w/o access code), 10th Ed., 2014; Washington
Publisher: Pearson
ISBN: 9780133083507

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. Solve linear and quadratic equations.
2. Define function, interpret function notation.
3. Find the inverse of a function.
4. Make a complete graph of relation or a function.
5. Find the measures of the angles formed by intersecting lines.
6. Solve practical problems that require finding the lengths of the sides and the measures of the angles of right triangles.
7. Solve practical problems in which the area of a triangle or a quadrilateral must be found.
8. Solve problems involving circles.
9. Compute surface areas and volumes of spheres, cylinders, cones, and other solid figures.
10. Find the trigonometric functions of an angle.
11. Find the acute angle that has a given trigonometric function value.
12. Find the missing sides and angles of a right triangle.
13. Resolve a vector into components and, conversely, combine components into a resultant vector.
15. Factor polynomials.
16. Solve equations involving rational expressions.
17. Solve systems of equations in two variables.
18. Simplify radical expressions.
19. Solve equations involving radical expressions.
20. Solve equations of degree 3 or more.
21. Solve systems of quadratic equations
22. Write the trig functions of an angle, in standard position, given a point on the terminal side of the angle.
23. Solve oblique triangles using the law of sines.
24. Solve oblique triangles using the law of cosines.
25. Solve applied problems requiring oblique triangles.
26. Evaluate the trig functions of an angle given in radians.
27. Compute the arc length, radius, or central angle of a circle.
28. Compute the angular velocity of a rotating body.
29. Compute the linear speed of a point on a rotating body.
30. Solve applied problems involving arc length or rotation.
31. Draw the graph of the six trigonometric functions
32. Solve problems involving direct variation, inverse variation, joint variation, and combined variation.
33. Solve exponential growth and decay problems by formula or by the universal growth and decay curves.
34. Convert expressions between exponential and logarithmic form.
35. Evaluate common and natural logarithms.
36. Use the properties of logarithms to rewrite, expand, or condense logarithmic expressions.
37. Solve exponential and logarithmic equations.

**TOPICAL OUTLINE**

<table>
<thead>
<tr>
<th>Days</th>
<th>Topic and Class Activity</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>Numerical Computation, Linear Equations, and Word Problems</td>
</tr>
<tr>
<td>5</td>
<td>Functions and Graphs</td>
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<tr>
<td>5</td>
<td>Geometry</td>
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<td>5</td>
<td>Right Triangle Trigonometry</td>
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<tr>
<td>5</td>
<td>Fractions and Fractional Expressions</td>
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<tr>
<td>5</td>
<td>Systems of Linear Equations, Radical Expressions, Quadratic Equations</td>
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<tr>
<td>5</td>
<td>Oblique Triangles and Vectors</td>
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<tr>
<td>5</td>
<td>Radian Measure, Arc Length, and Rotation</td>
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<tr>
<td>5</td>
<td>Graphs of the Trigonometric Functions</td>
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<tr>
<td>5</td>
<td>Ratio, Proportion and Variation</td>
</tr>
<tr>
<td>10</td>
<td>Exponential and Logarithmic Functions</td>
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<tr>
<td>5</td>
<td>Analytic Geometry</td>
</tr>
<tr>
<td>10</td>
<td>Reviews &amp; Exams</td>
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</tbody>
</table>

**Graded Assignments and Policies**

**Graded Assignments**

<table>
<thead>
<tr>
<th>Graded Assignments</th>
<th>0 - 20%</th>
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</thead>
<tbody>
<tr>
<td>In class Quizzes</td>
<td></td>
</tr>
<tr>
<td>Participation</td>
<td>0 - 5 %</td>
</tr>
<tr>
<td>Projects</td>
<td>0 - 20%</td>
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<tr>
<td>Homework</td>
<td>0 - 30%</td>
</tr>
<tr>
<td>Tests</td>
<td>50 - 85%</td>
</tr>
<tr>
<td>Final</td>
<td>15 - 30%</td>
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</tbody>
</table>
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.

Grading Scale

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>

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)