INSTRUCTOR

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(727) 791-2563  
Office Hours/Instructor Availability: MyCourses/Door  
Office Location: NM 108 (Clearwater Campus)

ACADEMIC DEPARTMENT

Dean: Jimmy Chang  
Office Location: SA 215B (St. Petersburg/Gibbs Campus)  
Office Number: (727) 341-4305  
Academic Chair: Dr Joy Moore  
Office Location: NM 120 (Clearwater Campus)  
Office Number: (727) 791-2542

COURSE INFORMATION

Course Description:
This course is a study of trigonometry with emphasis on circular functions. Major topics include: trigonometric and circular functions, inverse trigonometric functions, identities, equations, solution of triangles, complex numbers, vectors, parametric equations, polar coordinates and applications. Credit is not given for both MAC 1114 and MAC 1147. MAC 1114 may be taken concurrently with MAC 1140. There are 47 contact hours.

Course Goals:

- The student will communicate a knowledge of trigonometry.
- The student will apply the knowledge learned in this course.
- The student will demonstrate an ability to analyze the concepts in this course.

Course Objectives:

- The student will communicate a knowledge of trigonometry by:
  1. defining the following terms through correct usage:
     a. relation and function
     b. even and odd functions
     c. sine
     d. cosine
     e. tangent
     f. cotangent
     g. secant
     h. cosecant
     i. radian measure
     j. complex number
     k. vector
2. learning and synthesizing specific facts and methods such as:
   a. stating the domain and range of each of the six trigonometric functions.
   b. finding the fundamental values of $\pi/6$, $\pi/4$, $\pi/3$, and $\pi/2$ and their equivalents in the second, third, and fourth quadrants for each of the six trigonometric functions.
   c. stating the inverse relation and function for each of the six trigonometric functions and stating the domain and range for each.

   • The student will apply the knowledge learned in this course by:

   1. solving trigonometric problems such as:
      a. using the formulas for $\cos(a\pm b)$, $\sin(a\pm b)$ and $\tan(a\pm b)$.
      b. using the half- and double-angle formulas for the sine, cosine, and tangent functions.
      c. finding functional values for the inverse relations and functions of each of the six trigonometric functions.
      d. finding general and fundamental solutions of equations involving the six trigonometric functions.
      e. converting from radian to degree measure and vice-versa.
      f. defining the relationships of a right triangle in terms of the six trigonometric functions.
      g. performing operations involving complex numbers in standard and polar form.
      h. finding powers of complex numbers by using DeMoivre’s Theorem.
      i. finding the roots of a complex number using polar form.
      j. transforming polar points and equations to Cartesian points and equations and vice-versa.
      k. graphing polar points and equations.
      l. performing operations involving vectors such as addition, subtraction, scalar multiple, finding norm, magnitude, dot product, and direction.
      m. transforming parametric equations into an equation in rectangular or polar coordinates.

   2. analyzing and synthesizing trigonometry to solve real-world problems, such as:
      a. those involving right triangles.
      b. those requiring use of the Law of Sines and/or the Law of Cosines.

   3. graphing, identifying and analyzing the graphs of, trigonometric functions, such as:
      a. the sine and cosine functions, stating amplitude, period, and phase and vertical shift.
      b. the tangent, cotangent, secant, and cosecant functions and finding their asymptotes, stating period and phase shift.
      c. the sum and difference of functions by addition of ordinates.
      d. the product of two functions (damped trigonometric graphs).

   • The student will demonstrate critical thinking skills in this course by deriving a wide variety of trigonometric identities.

Prerequisites:
MAC 1105 with a grade of C or better, or appropriate score on the SPC mathematics placement test or program director approval.

REQUIRED TEXTBOOK & OTHER RESOURCES INFORMATION

Access to a computer and the internet.
Scientific calculator
TRIGONOMETRY (MAC 1114)
SYLLABUS—SPRING 2016 (406)

MEETING INFORMATION

<table>
<thead>
<tr>
<th>Course Location:</th>
<th>NM 101 (Clearwater Campus)</th>
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<tbody>
<tr>
<td>Meeting Days:</td>
<td>Tuesday/Thursday</td>
</tr>
<tr>
<td>Class Times:</td>
<td>9:30am – 10:45am</td>
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IMPORTANT DATES

<table>
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<tr>
<th></th>
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<tr>
<td>Drop/Add:</td>
<td>1/15/2016 (Friday)</td>
</tr>
<tr>
<td>Withdrawal Date:</td>
<td>3/23/2016 (Wednesday)</td>
</tr>
<tr>
<td>Final Exams:</td>
<td>5/2/2016 – 5/5/2016</td>
</tr>
<tr>
<td>College Closed:</td>
<td>1/18/2016 (Mon) Martin Luther King Jr’s Birthday; 3/6/2016 – 3/13/2016 (Spring Break); 3/25/2016 (Good Friday)</td>
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<tr>
<td>Financial Aid Deadlines:</td>
<td><a href="http://www.spcollege.edu/getfunds">http://www.spcollege.edu/getfunds</a></td>
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</tbody>
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DISCIPLINE SPECIFIC INFORMATION

**Conduct:**
You are expected to arrive on time and stay for the entire lecture. Turn off cell phones, PDAs, iPods, laptops, and other electronic devices not related to the course. Please be courteous to those around you, I will not tolerate rude or disruptive behavior in this class. Disruptive classroom behavior is any behavior that impedes the teaching/learning process. Examples of such behavior include frequently arriving late for class, frequently leaving class early, talking out of turn, using a cell phone during class, using indecent or abusive language, et cetera.

**Integrity:**
Cheating in any form will not be tolerated at St. Petersburg College. The College has an official policy on academic honesty. Please refer to SPC’s "Academic Honesty/Dishonesty Pamphlet" for further details. College policy states that a first offense is given a “zero” for the assignment with no possibility of replacing the score. I take this subject very seriously and will not tolerate academic dishonesty in the classroom.

**Calculator:**
TI-30 Scientific Calculator (or equivalent) is required. Graphing calculators such as the TI-83 and TI-84 (or equivalent) are not mandatory. Most of the tests do not allow the use of calculators. However, calculators such as TI-89s, TI-92s and TI Nspires are not permitted.

SUCCESS GUIDELINES

You may find the pace of this course to be considerably fast. You will not be able to learn everything during the lectures. The goal is not to teach you how to answer each problem individually, but to provide a framework in which to learn the material so that it can be applied. The average amount of time spent on this subject is 1:4. For every one hour of class, you will likely need to spend four outside the classroom. I find this to be the minimum for most students. Attend class regularly. Take complete notes during class and then rewrite your notes as soon after class as possible so you can add things you remember but did not include. Read the chapter sections before class and again after the material has been presented. Form a study group with other students and meet regularly. Ask questions during class and/or office hours for clarity. Keep up with your homework and do all the assignment exercises. Please come see me, call me, or email me with any questions you may have. The Learning Support Commons has a wealth of resources, including free tutoring. Please visit the web page at [http://www.spcollege.edu/tutoring/](http://www.spcollege.edu/tutoring/) for more information.

TECHNICAL SUPPORT

SPC helpdesk: (727)341-4357, [onlinehelp@spcollege.edu](mailto:onlinehelp@spcollege.edu) or [http://www.spcollege.edu/helpdesk/](http://www.spcollege.edu/helpdesk/)
ATTENDANCE

Students are expected to attend class regularly and on time. Except in an emergency, a student who needs to leave early should notify the instructor at the beginning of the period. Failure to do so may result in an absence. When absent, it is your responsibility to learn what was missed. Arriving late or leaving early counts as an absence.

The college-wide attendance policy is included in the Syllabus Addendum located at: http://www.spcollege.edu/webcentral/policies.htm. The policy notes that each instructor is to exercise professional judgment and define “active participation” in class (and therefore “attendance”), and publish that definition in each syllabus. For this class, active participation means that students have not missed more than four classes during the entire semester and have taken all scheduled tests.

Instructor will verify that students are in attendance at least once each week during the first two weeks of classes. Students classified as “No Show” for both of the first two weeks will be administratively withdrawn. Students will be withdrawn automatically at the beginning of the term for non-payment of course fees. Immediately following the 60% point of the term, instructor will verify which students are actively participating in class as defined above. Students classified as not meeting the criteria for active class participation will be administratively withdrawn with a “WF”.

The last day a student can withdraw from this course and receive a grade of W is 03/25/2015. It is the responsibility of the student to withdraw from the course themselves by the withdrawal deadline. Any student wishing to withdraw from the course should do so online at: http://my.spcollege.edu. In accordance with college policy, no student can withdraw from a course after the withdrawal deadline. Do NOT ask your instructor to withdraw you from the course. It is your responsibility.

Third attempts: Students attempting this course for the third time (or more) cannot withdraw (State of Florida regulation), and failing to meet the attendance requirement will result in a grade of WF.

TESTING AND GRADING

Your semester grade will be measured by the average of the five tests (100 points each), assignments, quizzes and homework (100 points) and a mandatory comprehensive final examination (100 points).

No Make-Up tests will be given. If you miss a test, your final exam score will replace the missed test score. If you have taken all the tests, your lowest test score will be replaced by your score on the final exam, if this is higher than your lowest test score. If more than one test is missed, a zero will be recorded for the score. Extremely extenuating circumstances may be discussed with your instructor. Documentation must be provided.

The grade scale is A (100-90), B (89-80), C (79-70), D (69-60), F (59-0)

STUDENT SURVEY OF INSTRUCTION

The student survey of instruction is administered in courses each semester. It is designed to improve the quality of instruction at St. Petersburg College. All student responses are confidential and anonymous and will be used solely for the purpose of performance improvement.

LEARNING SUPPORT CENTER & LIBRARY HOURS:
Monday-Thursday: 7:30 a.m. – 9:00 p.m.
Friday: 7:30 a.m. – 4:00 p.m.
Saturday: 10:00 a.m. – 5:00 p.m.

*: You need to be early enough to finish your test before the Testing Center closes.

BOOKSTORE HOURS:
Monday-Thursday: 7:45 a.m. – 7:00 p.m.
Friday: 7:45 a.m. – 2:00 p.m.

ACADEMIC TEST HOURS*:
Monday & Thursday: 9 a.m. – 6:00 p.m.
Tuesday & Wednesday: 9 a.m. – 3:30 p.m.
Friday: 9 a.m. – 12:00 p.m.(noon)
SYLLABUS ADDENDUM
Please visit the Syllabus Addendum web page at http://www.spcollege.edu/webcentral/policies.htm for the most current information and policies.

SIGNATURE
I have read, understand, and agree to abide fully by the parameters set in this syllabus and Syllabus Addendum.

Student Signature: Date:

A Tentative Schedule is provided on the next page. This schedule may be changed as some material can be covered more quickly while other topics may require more time to cover in sufficient detail. Also note that the final exam is comprehensive and designed to assess an overall understanding of the material covered in this course.
## Tentative Weekly Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Section</th>
<th>Topics</th>
<th>Pg</th>
<th>Exercises (eoo—every other odd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/12</td>
<td>6.1</td>
<td>Angles and Their Measures</td>
<td>364</td>
<td>1–10 (all), 11–103 eoo and 111</td>
</tr>
<tr>
<td></td>
<td>1/14</td>
<td>6.2</td>
<td>Trigonometric Functions: Unit Circle Approach</td>
<td>380</td>
<td>6–12 (all) 15–115 eoo, 121 and 123</td>
</tr>
<tr>
<td>2</td>
<td>1/19</td>
<td>6.3</td>
<td>Properties of the Trigonometric Functions</td>
<td>395</td>
<td>5–10 (all), 11–37 odd, 43, 45, 53, 55 and 59–91 eoo</td>
</tr>
<tr>
<td></td>
<td>1/21</td>
<td>6.4</td>
<td>Graphs of the Sine and Cosine Functions</td>
<td>409</td>
<td>3–8 (all), 13–45 eoo, 59–71 odd and 87</td>
</tr>
<tr>
<td>3</td>
<td>1/26</td>
<td></td>
<td>Review for Test 1</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1/28</td>
<td>6.5</td>
<td>Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions</td>
<td>419</td>
<td>3–6 (all), 19–39 eoo</td>
</tr>
<tr>
<td>4</td>
<td>2/2</td>
<td>6.6</td>
<td>Phase Shift; Sinusoidal Curve Fitting</td>
<td>429</td>
<td>1–2 (all), 3–27 eoo</td>
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<tr>
<td></td>
<td>2/4</td>
<td></td>
<td>TEST 1 Sections 6.1–6.6</td>
<td>434</td>
<td>1–31 odd, 33–39 (odd), 43, 45, 48 and 49–55 odd</td>
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<tr>
<td>5</td>
<td>2/9</td>
<td>7.1</td>
<td>The Inverse Sine, Cosine, and Tangent Functions</td>
<td>450</td>
<td>7–12 (all), 13–35 odd, 37–51 odd and 61–67 odd</td>
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<tr>
<td></td>
<td>2/11</td>
<td>7.2</td>
<td>The Inverse trigonometric Functions (Continued)</td>
<td>457</td>
<td>4–8 (all), 9–65 eoo</td>
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<tr>
<td>6</td>
<td>2/16</td>
<td>7.3</td>
<td>Trigonometric Equations</td>
<td>464</td>
<td>7–10 (all), 11–83 eoo, 93 and 103</td>
</tr>
<tr>
<td></td>
<td>2/18</td>
<td>7.4</td>
<td>Trigonometric Identities</td>
<td>474</td>
<td>3–8 (all), 9–101 eoo</td>
</tr>
<tr>
<td>7</td>
<td>2/23</td>
<td>7.5</td>
<td>Sum and Difference Formulas</td>
<td>485</td>
<td>5–10 (all), 13–37 eoo, 41, 47–67 eoo, 73–83 odd and 91–95 odd</td>
</tr>
<tr>
<td></td>
<td>2/25</td>
<td>7.6</td>
<td>Double-angle and Half-angle Formulas</td>
<td>495</td>
<td>1–6 (all), 7–27 eoo, 29, 31, 47–67 eoo, 69–93 odd, 94 and 95</td>
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<tr>
<td>8</td>
<td>3/1</td>
<td>7.7</td>
<td>Product-to-Sum and Sum-to-Product Formulas</td>
<td>500</td>
<td>1–41 eoo, 43 and 45</td>
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<tr>
<td></td>
<td>3/3</td>
<td></td>
<td>TEST 2 Sections 7.1–7.7</td>
<td>503</td>
<td>1–41 odd, 45–79 odd, 42–44 all</td>
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<tr>
<td>9</td>
<td>3/8</td>
<td></td>
<td>NO CLASS</td>
<td></td>
<td>SPRING BREAK!</td>
</tr>
<tr>
<td></td>
<td>3/10</td>
<td></td>
<td>NO CLASS</td>
<td></td>
<td>SPRING BREAK!</td>
</tr>
<tr>
<td>10</td>
<td>3/15</td>
<td>8.1</td>
<td>Right Triangle Trigonometry; Applications</td>
<td>516</td>
<td>4–8 (all), 9–41 eoo, 49–57 odd, 61, 63 and 71</td>
</tr>
<tr>
<td></td>
<td>3/17</td>
<td>8.2</td>
<td>The Law of Sine</td>
<td>527</td>
<td>4–8 (all), 11–35 eoo and 47–53 odd</td>
</tr>
<tr>
<td>11</td>
<td>3/22</td>
<td>8.3</td>
<td>The Law of Cosines</td>
<td>535</td>
<td>3–8 (all), 9–41 eoo, 45, 49</td>
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<tr>
<td></td>
<td>3/24</td>
<td>8.4</td>
<td>Area of a Triangle</td>
<td>540</td>
<td>2–4 (all), 5–21 eoo and 27–35 eoo</td>
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<tr>
<td>12</td>
<td>3/29</td>
<td>8.5</td>
<td>Simple Harmonic Motion; Damped Motion; Combining Waves</td>
<td>550</td>
<td>2–4(all), 7–39 eoo</td>
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<tr>
<td></td>
<td>3/31</td>
<td></td>
<td>TEST 3 Sections 8.1–8.5</td>
<td>553</td>
<td>1–33 odd, 39–43 odd and 44</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Section</td>
<td>Topics</td>
<td>Pg</td>
<td>Exercises</td>
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<tr>
<td>13</td>
<td>4/5</td>
<td>9.1</td>
<td>Polar Coordinates</td>
<td>567</td>
<td>5–8 (all), 9–81 eoo</td>
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<tr>
<td></td>
<td>4/7</td>
<td>9.2</td>
<td>Polar Equations and Graphs</td>
<td>583</td>
<td>7–10 (all), 13–33 eoo, 37, 43, 45, 49, 53</td>
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<tr>
<td>14</td>
<td>4/12</td>
<td>9.3</td>
<td>The Complex Plane; De Moivre’s Theorem</td>
<td>591</td>
<td>5–10 (all), 11–59 eoo</td>
</tr>
<tr>
<td></td>
<td>4/14</td>
<td>9.4</td>
<td>Vectors</td>
<td>603</td>
<td>1–8 (all), 9–69 eoo, 73 and 75</td>
</tr>
<tr>
<td>15</td>
<td>4/19</td>
<td>9.5</td>
<td>The Dot Product</td>
<td>612</td>
<td>2–6 (all), 7–23 eoo, 25, 29</td>
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<tr>
<td></td>
<td>4/21</td>
<td>10.7</td>
<td>Plane Curves and Parametric Equations</td>
<td>694</td>
<td>2–6 (all), 7–19 eoo and 33</td>
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<td>16</td>
<td>4/26</td>
<td>REVIEW</td>
<td></td>
<td></td>
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<td>17</td>
<td>4/28</td>
<td>TEST 4</td>
<td>Sections 9.1-9.5, 10.7</td>
<td>629</td>
<td>1–37 odd, 47, 51, 53, 59 and 61</td>
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<td></td>
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<td>699</td>
<td>35</td>
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</table>

#: Test 5 is a review Test, intended to prepare you for the final (MML).
##: The final exam is comprehensive, mandatory and designed to assess an overall understanding of the material covered in this course.