

Marshall University

MTH 122 – SEC 203: Plane Trigonometry CRN 3909 – Spring 2018

Class Time: TR 12:30 – 1:45 PM

Location: (Smith Hall) SH 509
(Tentative Syllabus)

INSTRUCTOR: Dr. Ansam Al-Aqtash

OFFICE: (Smith Hall) SH 740C

OFFICE PHONE: 304-696-3036

E-mail: alaqtasha@marshall.edu

OFFICE HOURS: **M** 12:00 – 2:00 PM, **W** 11:00 AM – 2:00 PM, **F** 11:00 AM – 12:00 NOON, others by appointment.

UNIVERSITY POLICIES: By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to

<http://www.marshall.edu/academic-affairs/policies/>

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment. The most recent revision of the 2015-2016 undergraduate catalog can be obtained at

http://www.marshall.edu/catalog/files/UG_15-16_final_published.pdf

Academic Integrity:

- ✦ The University Rules, including the Code of Conduct, and other documented policies of the department, college, and university related to academic integrity, will be enforced. **Any violation of these regulations will be dealt with on an individual basis according to the severity of the misconduct.**
- ✦ Please note that **any act of *Plagiarism*, *Cheating*, or/and *Academic Dishonesty*** will be **prosecuted to the maximum extent according to MU catalog.**

CLASS RULES:

1. **SILENT YOUR PHONES.**
2. If you need to leave the class early, inform your instructor before the class begins. Please **show your respect** to your classmates and your instructor.
3. **Good attendance is a major key to success in this (or any) class!** Students are expected to attend all scheduled classes.

PREREQUISITES: MTH 130 (concurrently) or MTH 127 or Math ACT 21

COURSE CATALOG DESCRIPTION: Plane Trigonometry (3 credit hours): A study of the trigonometric functions, graphs of the trigonometric functions, identities, equations, inverse trigonometric functions, vectors, complex numbers, and applications.

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Course Student Learning Outcomes:	How students will practice each outcome in this Course	How student achievement of each outcome will be assessed in this Course
<p>Students will ...</p> <hr/> <p>Understand, and use effectively, all six trig functions, defined both by right triangles and also by the unit circle..</p> <p>Graph each of the six trig functions on its extended domain, and know the features of each function.</p> <p>Verify trig identities using proper mathematical techniques and solve conditional equations which involve trig and/or inverse-trig functions</p> <p>Understand vectors and polar-form complex numbers so that physics problems can be solved and so that products, quotients, powers and roots can be computed easily</p>	<p>} in-class activities, classroom discussions & homework</p>	<p>} midterms & final exam</p>

EBOOK: Trigonometry (MyMathLab access code), by **Dugopolski, 4th ED**, 2015, Pearson.

<https://www.pearsonmylabandmastering.com/northamerica/>

Your Course Name: **MTH 122 - SEC 203 - CRN 3909 - Trigonometry - Dr. Al-Aqtash**

Your Course ID: **al-aqtash06892**

Waiting for financial aid? **Get temporary access without payment for 14 days.** Use an access code, credit card, or Paypal to stay in your course.

REQUIRED CALCULATOR: TI-30 (any of the TI-30 family is acceptable, but TI-34 or 36 are not)

- You may use the calculator on all work and assignments in this class.
- You may **not** use your phone, iPad, laptop, etc. as a calculator on any quiz or exam.
- **No** other technology may be used in class without permission.

Course Contents:

Right-Triangle Trigonometry: Angles & measurements (degrees, minutes seconds, decimal degrees). Arithmetic of angle measures. Similar triangles and ratios of sides of right-triangles. Exact values compared to decimal approximations. Accuracy of approximations. Optional: measurements and rules of rounding values to the appropriate number of significant digits.

Circular Trigonometric Functions: The unit circle with angles measured in radians. Angles in standard position and trig ratios involving x, y and distance, r, from the origin. Reference angles. Arc length and central angle; linear and angular velocity.

Graphing Trigonometric Functions: Amplitudes, periods and translations of sines and cosines. Periods, asymptotes and graphs of tangent, cotangent, secant and cosecant.

Trigonometric Identities: Identities distinguished from conditional equations. Appropriate methods and procedures for verifying identities. Pythagorean, angle-sum, double-angle, half-angle, product-to-sum and sum-to-product identities.

Solving Trigonometric Equations: Inverse-trig functions. Solving equations which have one or more trig and/or inverse-trig functions. Exact-value solutions versus approximations.

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Trigonometric Applications:

- Law of sines (including ambiguity) and law of cosines. Solving oblique triangles from appropriate partial information. Optional: solution check using Mollweide's formula.
- Vectors, operations, and dot product, including physical problems. Solutions will involve oblique triangles.
- Complex numbers, polar coordinates and polar form. Products, quotients, powers, roots and DeMoivre's Theorem. Optional: notations $e^{i\theta}$ and/or $\text{cis}\theta$.

MATERIAL: We will cover most of the chapters of the text, with additional topics as time allows.

Week 1-6: Chapter P, 1, 2, 3 (Test#1)

Week 7-11: Chapter 4, 5 (Test#2)

Week 12-15: Chapter 6 & Final Test Review.

GRADED WORK: (550 points)

1. Exams

There will be two in-class midterm tests and a final exam. The final exam will be comprehensive. In case of extreme emergency, serious illness, or university related activity, when I have been notified with evidence or approval, or excused absences approved by the Dean of Student Affairs, the student will be allowed to make up the missed exam.

Test #1: Thursday, February 15th, 2018 (100 points) ~ 18.18%

Test #2: Thursday, March 29th, 2018 (100 points) ~ 18.18%

Final Exam: Tuesday, May 1st, 2018, 12:45 – 2:45 PM (150 points) ~ 27.27%

2. **Quizzes/Classroom Activities** (50 points) ~ 9.09%
3. **Homework Assignments (MyMathLab)** (100 points) ~ 18.18%
4. **ATTENDANCE** (50 points) ~ 9.09%

Good attendance is a major key to success in this (or any) class!

Attendance Policy:

- ✚ Students are expected to attend all scheduled classes. **I'll reserve the right to drop 2 points for each absence.** It is the student's responsibility to find out what was discussed in a missed class.
- ✚ **In case of an emergency, when I am notified ahead of time, or when the absence is excused by the office of the dean of affairs, a student will be allowed to makeup a missed work.**

Roughly speaking 90% is at least an A, 80% is at least a B, 70% is at least a C, 60% is at least a D. Final grades will be determined by the end of the semester.

MATH TUTORING SERVICES: Marshall University provides multiple options for free on-campus tutoring. It is the student's responsibility to take advantage of these facilities in addition to utilizing office hours.

- The Mathematics Department tutoring lab is located in Smith Hall 625. The tutoring hours are:
 - Monday-Thursday: 10:00am to 4:00pm, 5:00 to 6:30.
 - Friday: 10:00am to noonThe current schedule can be found at <http://www.marshall.edu/math/tutoring/>
Schedules for the new semester are usually posted during the second week of classes.
- The University College has a tutoring lab Smith Communications Building (Room 211). Information regarding this facility can be found at <http://www.marshall.edu/uc/tutoring-services/>

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DROP: The last day to drop class (no entry to academic record) is Friday, January 12th, 2018.

Martin Luther King, Jr. Holiday (Monday January 15th 2018) – University closed.

Withdrawals: Friday (March 16th, 2018) is the last day to withdraw “W” from the class.

Spring Break (Monday March 19th – Saturday March 24th) Classes dismissed.

Dead Week (Monday April 23 – Friday April 27).

The complete academic calendar is available at

<http://www.marshall.edu/academic-calendar/academic/spring2018/>

Blackboard / Electronic Communications:

MUonline <Blackboard> will be used to post pertinent class information and course documents. For technical problems with Blackboard contact IT Services Desk 304-696-3200.

Special Needs Policy:

Policy for Students with Disabilities: Marshall University is committed to equal opportunity education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disability Services (ODS) in Prichard Hall 117 (304.696.2467) to provide documentation of their disability. Following this, the ODS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experience, outside assignment, testing, and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, access the website for the Office of Disabled Student Services:

<http://www.marshall.edu/disabled>