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NUAMES

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Attention: Contact the College or University you wish to attend upon high school graduation to confirm this Concurrent Enrollment course will meet your goals for fulfilling General Education requirements or will count toward your chosen major.

Course Syllabus (revised January 2019)

Course Title*:*   MATH1060 – Trigonometry

Course Schedule*:*   1 semester (2 credits through Utah State University)

Textbook*:*   PRECALCULUS: A Unit Circle Approach by Ratti/McWaters, 3rd Edition

Web Resources*:*   http://jefflongnuames.weebly.com/

Instructor's Name*:*   Jeff Long

Telephone (school):   (801) 626-8613

School Address*:*   M3-100 Weber State University Ogden Campus
                            1465 Edvalson Street
                            Ogden, UT 84408

Email Address*:*   jelong@dsdmail.net

Availability*:*   Monday-Friday 11 – 11:30 AM, 2:40 – 3:30 PM

Welcome and Course Overview

Math 1060 is intended to prepare students for entry into the Calculus sequence by providing rigorous coverage of trigonometric functions, trigonometric identities, and vector analysis. Specifically, the course covers: angles, right triangle trigonometry, the unit circle, trigonometric functions and their graphs, inverse trig functions, proving trig identities and formulas, solving trig equations, Laws of Sine and Cosine, and vectors with their applications.

Instructor Bio

My name is Jeff Long. Math was my best subject in school and the most satisfying. Working through problems is like solving puzzles. I grew up overseas in Afghanistan (before 40 years of war destroyed the country) and then the Philippines. I graduated from BYU with a Bachelor of Science degree in Mechanical Engineering then spent 20 years in the U.S. Navy as a submarine officer. When I retired from the navy, our family settled here in Utah where I spent two years building my own log home (from raw logs). Needing to pay for it, I went back to school for a year and a half to become a certified math teacher. I taught at Roy High School for 9 years. This is my fifth year at NUAMES. Six years ago, I completed my Master of Mathematics degree at the Utah State University. In 2014, I was honored to be one of eight teachers in Utah to receive the Master Teacher Award from Math for America, a non-profit organization based in New York City. My wife and I are the proud parents of two grown children. I love reading, swimming, biking, kayaking, and walking our two standard poodles on the beautiful trails in the Ogden Valley where we live. I feel very fortunate to be able to work with this great faculty and teach math to such an excellent group of students at NUAMES!

CONTENT

Chapter 4: Trigonometric Functions of Angles
      Section 4.1 Angle Measure
      Section 4.2 Right Triangle Trigonometry
      Section 4.3 Trigonometric Functions of Angles
      Section 4.4 The Law of Sines
      Section 4.5 The Law of Cosines
      Review Exercises

Chapter 5 Trigonometric Functions of Real Numbers
      Section 5.1 Trigonometric Functions: The Unit Circle Approach
      Section 5.2 Graphs of the Sine and Cosine Functions
      Section 5.3 Graphs of Other Trigonometric Functions
      Review Exercises

Chapter 6 Analytic Trigonometry
      Section 6.1 Verify Trigonometric Identities
      Section 6.2 Sum and Difference Identities
      Section 6.3 Double-Angle and Half-Angle Identities
      Section 6.4 Product-to-Sum and Sum-to-Product Identities
      Section 6.5 Inverse Trigonometric Functions
      Section 6.6 Trigonometric Equations
      Review Exercises

Chapter 7 Vectors, the Complex Plane, and Polar Coordinates
      Section 7.1 Vectors
      Section 7.2 The Dot Product
      Section 7.3 Polar Form of a Complex Number (Optional)
      Review Exercises

POLICIES AND PROCEDURES

Students should be in their seats at the start of class. All preparation, including the gathering of materials, completion of homework, should be completed prior to the start of class. Materials include book, notebook, pencils, and calculator (when appropriate). Students should be fully ready to start class. A student may be marked tardy if he/she is not in their seat with the appropriate materials at the time class begins. **Since the pace of the course is demanding, excessive absences or tardies could obviously diminish one's grade.**

Citizenship grades: are based upon the following areas:
(1) work habits in class, (2) respect, (3) accountability, and (4) attendance.

I will interpret the accountability portion, to mean that you "take ownership for your own education" and will assign citizenship grades as follows:
"H" (high): 0-2 missing HW assignments;
"S" (satisfactory): 3-4 missing assignments;
"N" (needs improvement): 5-6 missing assignments;
"U" (unsatisfactory): more than 6 missing assignments.

For the **attendance** portion of the citizenship grade I will assign grades as follows:
"H" (high): 0-1 tardies;
"S" (satisfactory): 2 tardies;
"N" (needs improvement): 3-4 tardies (per 2017-2018 NUAMES policy);
"U" (unsatisfactory): 5 or more tardies, or 3 or more unexcused absences, or 6 or more parental excused absences (per 2018-2019 NUAMES policy)

If you are more than 5 minutes late I will not admit you to class without a note from the head secretary in the main-office. Please be on time.

Use of calculators: The recommended calculator is the TI-84, however, the TI-83 is sufficient. Each student must have their own calculator. Students may also use the scientific calculator from CE Math 1050.
Use of electronic devices, including cell phones, PDA's, and media players is forbidden, as they are a distraction to the educational environment. Such devices will be confiscated according to school policy. Calculators may be used during the work session, as is appropriate.

Behavior: Students at NUAMES rarely have behavior issues. You are an exceptional group of students. I reserve the right to reassign seating to ensure everyone remains on task. If there is a behavior problem, it will be handled according to the following sequence of infractions:
1st offense: Student/teacher conference at the end of class;
2nd offense: I will contact your parents;
3rd offense: student/teacher contract;
4th offense: parent/teacher conference;
5th offense: referral to the administration.

By "offense" I mean a significant behavior problem. If I ask you to focus or stop talking, that's just me trying to keep you on task. I'll let you know if you need to stay after class to see me about your behavior.

Feedback: I usually enter the grades for submitted homework assignments before I leave for the day. If you would like your homework returned after I enter your grades I will do so, otherwise, I will file it. You can access your current grades on the Davis Schools web site (http://www.davis.k12.ut.us/).

Late Work: Late assignments are penalized 20%. They will not be accepted after we take the test for that material. Late work is defined as any work that has not been turned in at the beginning of class on its due date. If you are absent you will be expected to turn your work in the next attended class period. An extended absence will be handled on a case by case basis.

Academic Honesty: Academic honesty is highly valued at NUAMES. You must submit work that represents your own efforts. While it is appropriate to work with others in obtaining a solution, it is inappropriate to copy directly and submit it as your own work.

Web Resources: On the website jefflongnuames.weebly.com there are the following resources:

- Schedule of assignments
- Links to class notes

GRADING CATEGORIES (grades are weighted)

Category	Number	Weighted Percentage of Final Grade
Tests	4	40%
Quizzes	10	20%
Final Exam	1	30%
Homework	30	10%

Tests: Following each of the 4 chapters, there will be a comprehensive test. There will be no test retakes for poor-performance. If you are absent the day of the test, you must take it after school upon your return.

Quizzes: There will be two or three quizzes in each unit for a total of 7 quizzes. Quizzes are used to assess a student's current comprehension of the material. The points per quiz will vary depending upon the number of questions on the quiz. There will be no retakes on quizzes. If you are absent the day of a quiz, you may take it during lunch or after school upon your return.

Final Exam: There will be comprehensive at the end of the course. This exam is prepared by the Utah State University (USU) Mathematics and Statistics Department. Only in the case of extenuating circumstances, approved by USU and myself, will students be allowed to re-schedule a final exam time. ***The date of the Final exam is during class time on Friday 8 May 2020***. The final exam is weighted at 30% of the overall grade.

Homework: The Class Schedule and Assignments table below (subject to change) provides the topics we will cover during the class session and the assignment problems from the textbook. Each lesson has an associated homework assignment. You must show your work to receive full credit. While obtaining the correct answer is important, I am much more interested in how you derive your answer. Consequently, homework problems that are submitted with just answers and no work to justify how the answer was derived will receive no credit. Problems that are non-computational will usually require a complete sentence or two to demonstrate your understanding.

Feedback: Grades will be posted daily and made available for student and parental review on the Davis School District web site (http://www.davis.k12.ut.us/). Students may request a hardcopy progress report from the instructor at any time.

Academic Honesty: Academic honesty is highly valued at the NUAMES. You must always submit work that represents your own efforts. While it is appropriate to work with others in obtaining a solution, it is inappropriate to copy directly and submit it as your own work.

Accommodations: We will utilize accommodations set forth in existing 504 documents or Special Education IEP's. If you do not have an existing accommodation document, and you want to apply for an education accommodation, you must contact USU's Services for Students with Disabilities (SSD). For more information see the website: usu.edu.

Class Fee: There will be a $10 fee to take this class (not included in tuition). The fee will cover the cost of printing out lesson notes and the online version of the textbook.

Prerequisites

ACT Math score of at least 23 or equivalent SAT Math score Or a Satisfactory score on the Math Placement Exam	AP Calculus AB score of at least 3	Grade of C- or better in MATH 0995 or MATH 1050
See ***http://catalog.usu.edu/content***		

Class schedule and Assignments

	Math-1060 Spring 2020			Assignment (due next class period)
T	21-Jan	A	Session 1: Section 4.1 (Angle Measure)	**page 376:** 3, 7-45 (every other odd), 51, 53, 57-111 (every other odd), 123, 129, 131, 133
Th	23-Jan	A	Session 2: Section 4.2 (Right Triangle Trigonometry)	**page 394:** 3-30 (every other odd),35,41,45-69 (every other odd), 70, 73, 91, 101, 105
Sa/Su				
M	27-Jan	A	Session 3: Section 4.3 (Trig Functions of Angles Part 1)	**page 414:** 1, 5, 15-75 (every other odd), 77, 84, 89, 91, 105
W	29-Jan	A	Session 4: Review and *Quiz 1*	*Quiz 1,* **HW** handed out in class
Fri	31-Jan	A	Session 5: Section 4.4 (The Law of Sines)	**page 428:** 9-33 (every other odd), 37, 38, 41, 69, 70
Sa/Su				
T	4-Feb	A	Session 6: Section 4.5 (The Law of Cosines)	**page 440:** 3-27 (every other odd), 35, 37, 39, 45, 49, 51, 57, 59, 81, 89
Th	6-Feb	A	Session 7: Review and *Quiz 2*	*Quiz 2*, **page 450:** 3, 7, 9, 13,1 5, 17, 21-37 (odd), 43, 47, 49, 51, 59, 61, 65, 69, 73-117 (every other odd) **page 452**: 1, 5, 7, 8, 9-19 (odd), 23
Sa/Su				
M	10-Feb	A	Session 8: Review	HW Handout
W	12-Feb	A	Session 9: *Test 1 (Chapter 4)*	*Test 1 (Chapter 4)*
Fri	14-Feb	A	Session 10: Section 5.1 (Trig Functions: The Unit Circle Approach)	**Pg 462**: 3-57 (every other odd), 91, 92, 93
Sa/Su				

M	17-Feb		President's Day	No school
W	19-Feb	A	Session 11: Section 5.2 (Graphs of the Sine and Cosine Functions)	**Page 489:** 1-10, 12-39 (every other odd), 41-47 (odd), 49-59 (odd), 61, 67, 71, 77, 95, 96, 125, 127,137, 139
Fri	21-Feb	A	Session 12: Review and *Quiz 3*	*Quiz 3* HW Handout
Sa/Su				
T	25-Feb	A	Session 13: Section 5.3 (Graphs of the otherTrig Functions)	**Page 511:** 1-8 (all), 9, 11, 13, 17, 21, 29, 31, 37, 39, 47, 49, 51, 57, 61, 67, 68, 83, 87, 88
Th	27-Feb	A	Session 14: Review	**Page 520**: 1-21 (odd), 22-27 (all), for 31 and 33 (identify amplitude and period then check w/calculator) , for 35, 37, 39, 41, 45, 47, 51, 53, 55 (identify any transformation then check w/calculator)
Sa/Su				
M	2-Mar	A	Session 15: *Test 2 (Chapter 5)*	*Test 2 (Chapter 5)*
W	4-Mar	A/B	State ACT test for Juniors	State ACT test for Juniors
Th	5-Mar	A	Session 16: Section 6.1 (Verifying Trig Identities)	**Page 533:** 1, 3, 5, 9-78 (every other odd), 81, 107, 109
Sa/Su				
M	9-Mar	A	Session 17: Section 6.2 (Sum and Difference Identities)	**Page 546:** 1-19 (odd), 23-47 (odd), 51, 53, 55, 59, 61
W	11-Mar	A	Session 18: Section 6.3 (Double-Angle and Half-Angle Identities)	**Page 561:** 1-21 (odd), 25, 27, 29, 33, 41, 51, 55, 57, 63, 67, 71, 77, 83, 89, 91, 139
Fri	13-Mar	A	Session 19: Review and *Quiz 4*	*Quiz 4,* HW Handout
Sa/Su				
T	17-Mar	A	Session 20: Section 6.4 (Product-to-Sum and Sum-to-Product Identities)	**Page 571:** 1 ,3, 5, 15, 17, 19, 29, 33, 35, 41, 69
Th	19-Mar	A	Session 21: Section 6.5 (Inverse Trig. Functions)	**Page 589:** 3-87 (every other odd), 94, 111, 113, 125, 126
Fri	20-Mar	B	End of 3rd Term	End of 3rd Term
Sa/Su				
M	23-Mar		No School	No School
T	24-Mar	A	Session 22: Section 6.6 (Trigonometric Equations)	**Page 605:** 1, 3, 5, 7, 11, 13, 14, 19, 21-39 (odd), 41-49 (odd), 57, 61, 63, 69, 71, 73, 75, 79, 81, 83, 85, 89, 95, 99, 103, 139, 140
Th	26-Mar	A	Session 23: Review and *Quiz 5*	*Quiz 5*, HW Handout
Sa/Su				
M-F			Spring Break	Spring Break
Sa/Su				
M	6-Apr	A	Session 24: Review	HW Handout
W	8-Apr	A	Session 25: *Test 3 (Chapter 6)*	*Test 3 (Chapter 6)*
Fri	10-Apr	A	Session 26: Section 7.1 (Vectors Part 1)	**Page 634:** 3-53 (odd)
Sa/Su				
T	14-Apr	A	Session 27: Section 7.1 (Vectors Part 2)	**Page 635:** 62-65 (all) , 67, 72-75 (all), 81, 107, 108, 111, 112

Th	16-Apr	A	Session 28: Section 7.2 (The Dot Product Part 1)	**Page 645:** 1-41 (odd), 42-49 (all) , 53, 55, 81, 87, 88
Sa/Su				
M	20-Apr	A	Session 29: Section 7.2 (The Dot Product Part 2) and *Quiz 6*	*Quiz 6,* HW Handout
W	22-Apr	A	Session 30: Review (for Chapter 7 Test)	**page 690:** 1-39 (odd)
Fri	24-Apr	A	Session 31: *Test 4 (Chapter 7)*	*Test 4 (Chapter 7)*
Sa/Su				
T	28-Apr	A	Session 32: Review #1 for Final Exam	HW Handout
Th	30-Apr	A	*Quiz 7,* Session 33: Review #2 for Final Exam	*Quiz 7,* HW Handout
Sa/Su				
M	4-May	A	Session 34: Practice Final Exam (*Counts as 2 Quizzes)*	*Quiz 8/9 (Practice Final)* HW Handout
W	6-May	A	Session 35: Review #3 for Final Exam	HW Handout
Fri	8-May	A	Session 36: *Final Exam (Chapters 4 - 7.2)*	*Final Exam (Chapters 4 - 7.2)*
Sa/Su				
T	12-May	A	Session #37 (Ferris Wheels and Oscillating Springs)	HW Handout
Th	14-May	A	Session #38 (Oscillating Springs and Damped Oscillation)	HW Handout
Sa/Su				
M	18-May	A	Session #39 (Modeling daylight, phases of the moon with sinusoids)	HW Handout
W	20-May	A	*Quiz 10*	*Quiz 10*
Fri	22-May	A		
Sa/Su				
M	25-May		Memorial Day	No School
T	26-May	B	Yearbooks and LUAU	LUAU, yearbooks
W	27-May	A	Graduation 10 AM (Early Out @ 12)	Graduation
Th	28-May	B	Lagoon Day	Lagoon Day
Fri	29-May	A/B	End of school year (teacher checkout)	End of 4th Term