MATH42   *Precalculus II: Trigonometric Functions*   **Spring2016**

Monday through Friday: 7:30 - 8:20am   **Room G5**

INSTRUCTOR: Nina Danilova   **E-MAIL:<danilovanina@fhda.edu>**

OFFICE HOURS: 9:30am-10:10 M-Th Tutorial Center
 Course Description: The theory of trigonometric functions and their applications.
Text: *Precalculus with Limits*, by Ron Larson, 3rd edition, 201, Brooks/Cole, Cengage Learning
More than ever in your past mathematics experience, *reading* your textbook will be essential. The exercise sets are written with the intent of forcing the student to approach problems graphically and numerically, as well as the traditional symbolic (algebraic) approach. There is such variety in the exercise sets, that a few lecture examples often can't illustrate every type of question in the homework. This make the reading a crucial part of the students day-to-day work. The De Anza College catalog advises students to do at least 2 hours of work outside the classroom for each hour spent in class.
Technology: Students must have a graphing calculator. The instructor will use a Texas Instruments TI-84 plus in lectures. Consequently, the TI-84 plus (or TI-84, TI-83+, TI-83) is recommended for the students, but any graphing calculator that has a "table" feature is acceptable. (The old TI-81 and TI-85 models do *not* have a table feature!). *Any calculators that can do symbolic mathematics such as TI*
 Pre-requisite: Mathematics 41 or equivalent (with a grade C or better); or a satisfactory score on the College Level Math Placement Test within the last calendar year *-89 or HP-49 are not allowed*

. The second course in this series, Math 42,focuses on the theories and concepts governing trigonometric functions.
We will cover the following sections from theLarson,Precalculus with Limits, 3rdedition, textbook:
Chapter 4(all sections)
Chapter 5(all sections)
Chapter 6(all sections)
§10.7 and10.8
In addition, in this course, we make use of graphical and numeric techniques to understand the concepts necessary to succeed in Calculus.
Student Learning Outcome Statements (SLO)
• Student Learning Outcome
: Formulate, construct, and evaluate trigonometric models to
analyze periodic phenomena, identities, and geometric applications.
Course Objectives
A.
Define and evaluate trigonometric functions using both degree and radian measure
B.
Solve oblique and right triangles
C.
Solve arc length and sector area problems
D.

Graph and analyze the six trigonometric functions
E.
Apply trigonometric identities to simplify and evaluate trigonometric expressions and verify other identities
F.
Analyze the inverse trigonometric functions
G.
Solve trigonometric equations
H.
Define the polar coordinate system and introduce polar graphs
I.
Examine complex numbers in the complex plane
J.
Perform operations with 2D vectors
K.
Examine the logic of conditional and bi-conditional statements as they appear in mathematical statements

Class Rules: Cheating will not be tolerated. While being in class, you should turn off your cell phone or beeper. No walking in and out please. Don't hesitate to interrupt me – your questions are very welcome.

Attendance: Attendance will be taken at each session. **You are expected to attend all classes on time.** If you miss 3 class meetings, you may be dropped from the class. However this is your responsibility to drop the course officially if you decide not to attend any longer.

The students are responsible for any material covered and any announcements made in their absence.

Homework: You are responsible for all assigned **problems of the sections covered in class and all problems given in my handouts. You have to spend two hours of doing homework for each hour in class. I will spend several minutes in the beginning of each class meeting to answer your questions, if any, about homework problems.** The instructor will collect (and grade) HWs *on the three midterm exam days.* Usually, no late home assignments will be accepted. You have to staple your homework. Each section should start from a new page. Put the number of each section and the numbers of problems assigned at the top of this page (it helps a lot in grading). Don't forget write your name on the first page.

Quizzes: There will be frequent quizzes usually not announced beforehand. **No make up quizzes!**

Midterms: Three one-hour examinations, each worth 100 points, will be given. Each midterm will be announced beforehand. **No make up examinations!** If you cannot take a midterm at the time assigned, you can take it earlier letting me know a couple of days earlier. The lowest midterm grade will be dropped.

Final Exam: There will be a mandatory comprehensive two-hour final exam worth 200 points, and this exam *must* be taken during the scheduled exam time

on Monday June 20 at   7:00am-9:00 am.

<u>**Grade computation:**</u>

3 midterms	200	**A**	**(89% and more, 534 points)**
Final	200	**B**	**(76% - 88.9%, 456 – 533)**
Quizzes	70	**C**	**(64% - 75.9%, 384 - 455)**
Home assignments	60	**D**	**(51 - 63.9%, 306 - 383)**
Class activities	40	**F**	**(<51%, < 306points)**
Project	30		
TOTAL	600		

Homework Assignment

Section   *Problems*

HW1   <u>4.1</u>   ##1-6(all), 16, 32, 46, 48, 50, 58, 64, 66, 70, 72, 80, 82, 88, 92, 98, 102, 107, 112, 115, 119

HW2   <u>4.2</u>   ##1-4(all),6,10,12,16,24,28,30,34,42,46,52,54,56,58,59,60

HW3   4.3   ##1-4(all), 6, 8, 10, 12, 14, 16 ,20, 24, 28, 30, 32, 34, 38, 42, 44, 46, 48, 56, 60, 64, 67, 69, 70, 71,72, 74, 88

HW4   4.4   ##10, 12, 14, 16, 22, 24, 26, 28, 36, 38, 44, 46, 50, 52, 54, 56, 58, 60, 62, 66, 72, 82, 86, 92, 94, 97, 98, 100, 101, 102

HW5   4.5   ##1-4(all), 6, 8, 10, 12, 22, 24, 28, 32, 34, 38, 40, 52, 58, 62, 66, 68, 70, 74, 78, 80, 87, 90, 94

HW6   4.6   ##1, 2, 5, 6, 7, 9, 16, 34, 36, 44, 50, 51, 52, 54, 62, 64, 66, 72, 73, 86, 90, 91, 92, 93, 95

HW7   4.7   ##1-4(all), 6, 8, 10, 12, 14, 18, 20, 22, 26, 34, 42, 44, 46, 52, 54, 56, 58, 60, 62, 68, 72, 80, 84, 86, 88, 98, 102, 105, 106

HW8   4.8   ##1, 4, 6, 8, 10, 14, 16, 19, 21, 23, 24, 25, 26, 27, 29, 30, 33, 34, 37, 39, 41, 44, 46, 56, 60, 65

HW9   5.1   ##1-4(all), 6, 12, 14, 16, 18, 24, 25-30(all), 31-36(all), 38, 42, 46, 48, 50, 52, 54, 56, 60, 62, 63, 64, 66, 68, 70, 72, 76, 78, 80, 82, 86, 92, 93, 98, 100, 102, 108, 123

HW10 5.2   ##1-8(all), 12, 14, 18, 20, 22, 28, 32, 38, 40, 42, 46, 48, 50, 58

HW11 5.3   ##1-4(all), 6, 12, 14, 16, 17, 18, 20, 22, 24, 26, 28, 30, 32, 36, 40, 46, 56, 62, 72, 80, 88, 89, 93, 95

HW12 5.4   ##1-6(all), 8, 9, 10, 12, 14, 18, 24, 28, 32, 34, 46, 48, 53, 64, 66, 70, 76, 78, 84, 88, 90

HW13 5.5   ##1-10(all), 12, 16, 20, 22, 26, 27, 30, 34, 38, 42, 43, 50, 52, 53, 58, 60, 70, 74, 78, 82, 86, 90, 93, 98, 108, 116, 132, 137

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HW14 6.1   ##1-4(all), 6, 7, 8, 10, 18, 22, 26, 30, 36, 40, 42, 45, 46, 47, 48, 49, 50, 51, 52, 53, 55, 56

HW15 6.2   ##1-4(all), 7, 8, 10, 16, 21, 26, 30, 32, 34, 38, 41, 43, 44, 46, 47, 49, 58

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HW16   10.7   ##1-4(all), 6, 8, 10, 12, 16, 20, 24, 26, 32, 36, 40, 46, 48, 50, 52, 56, 60

HW17   6.4   ##2, 3, 4, 6, 8, 11, 14, 18, 22, 24, 26, 28, 29, 32, 34, 36, 38, 40, 44, 46, 50, 54, 56, 58, 64, 68, 72, 74, 92

HW18   6.5   ##1-4(all), 6, 10, 12, 14, 16, 18, 20, 22, 24, 34, 36, 39, 40, 44, 48, 52, 54, 62, 68, 72, 82, 84, 86, 88, 92, 94, 98, 100, 102

HW   10.8