Navajo Technical University
http://navajotech.edu

P.O. Box 849, Crownpoint, NM 87313-0849   Telephone: (505) 786-4100   FAX: (505) 786-5644

Technical Math
MTH-113 (3 Credit Hours)
Spring 2022

Instructor: **Jose Ernie Vanguardia**   **Email:**   jvanguardia@navajotech.edu
Office : Tech Rm 322   **Office Phone Number: 505-387-7401**
Office Hours: M/W 9:00 12::00pm (by appointment)
Office Hours Online: Email anytime but will respond within 24 hours Monday-Thursday, will respond within 48 hours Friday-Sunday.

Class Location & Meeting Times: Student Union Building Room 213
Required Materials:
    Texts: Elementary Technical Mathematics, 12th Edition
        Dale Ewen,
        ISBN-: 978-1-337-63058-0
        Textbook Cost: (price may vary)
    Tools: Scientific Calculator

      Math 113 – 2 - 3:00- 4:20   (MW - Traditional – Face-to-Face) (SUB 213)
      Math 113- 1 - 10:00 -11:20   (TR- Traditional – Face-to-Face))   (SUB 213)

    Lab Fee: None
Mission Statement
    Navajo Technical University's mission is to provide college readiness programs, certificates, associate, baccalaureate, and graduate degrees. Students, faculty, and staff will provide value to the Diné community through research, community engagement, service learning, and activities designed to foster cultural and environmental preservation and sustainable economic development. The University is committed to a high quality, student-oriented, hands-on-learning environment based on the Diné cultural principles: *Nitsáhákees, Nahátá, Íína, Siihasin.*

Course Description
Technical Mathematics II will cover lessons pertaining to Basic Concepts, Signed numbers, Metric system, Equations & Formulas, Ratio and Proportion, Linear equations, Geometry, and Right Triangle Trigonometry. Also, the course will be integrated to other fields of study to make it real and relevant. At times, the learning process relating to the Navajo culture in the areas of Nitsahakees, Nahatah, Iina, and Sihasin will be covered.

Course Objectives
At the end of the semester the students will:
- apply basic computation rules;
- define / describe technical math concepts;
- solve problems involving technical mathematics; and
- solve problems involving geometry and right triangle trigonometry.

Assessments:

Pre/post Survey. At the beginning and at the end of the semester, students will complete an attitudinal survey to ascertain growth in competence and confidence in mathematics. The survey will help identify opportunities to improve the course in the future. **Classroom Assessments.** Classroom Assessments are ungraded activities conducted in class. They provide feedback on whether or not students understand course material so that adjustments can be made before the end of the term. They are ungraded.

1. **Assignments.** Every week students will have assignments due the following week.
2. **Quizzes.** At the end of each chapter students will have a quiz. A total of six quizzes will take place by the end of the semester.
3. **Exams.** There will be a final exam.
4. **Projects.** Each student will be responsible for ta project that involves a real-life problem. Each project will be assessed using Skills Rubric that derives from the New Mexico Higher Education Department – in Quantitative Reasoning. Student learning data from the project assignments will be used to improve MTH 113 and the University's General Education Program as a whole. The NMHED Skills Rubric is provided below.

COURSE OUTCOMES	COURSE MEASUREMENTS
Students will apply techniques and strategies in solving technical mathematics computation skills	Formative assessment, Summative assessment, Applications, Projects / Presentations
Students will solve real-world application problems that measures basic mathematics skills	
Students will use algebraic formulas to demonstrate skills in solving real-world problems	
Students will solve problems involving missing dimension(s) of geometric figures.	
Students will solve problems using trigonometric ratios.	

Week	Chapters	Assignment	Quiz

1-2	Chapter 1
	    Review of Basic Concepts
	    1. Operations with Whole Numbers
	    2. Operations with Fractions
	    3. Operation with Decimal, Fractions, and Percent.
		Review classes	Quiz 1

3	Chapter 2 Signed Numbers and Powers of 10	TBA	Quiz 2
4	Chapter 3 The Metric System	TBA	Quiz 3
5	Chapter 5: An Introduction to Algebra	TBA	Quiz 4
6	Chapter 6 :Equations and Formulas	TBA	Quiz 5
7	Chapter 7: Ratio and Proportion		
8	MIDTERM EXAM		
9-10	Chapter 7: Ratio and Proportion	TBA	Quiz 5
11-12	Chapter 8: Graphing Linear Equations	TBA	Quiz 5
13	Chapter 12: Geometry	TBA	Quiz 5
14-15	Chapter 13: Right Triangle Trigonometry	TBA	Quiz 5
16	FINAL EXAM		

Schedule Disclaimer: The course schedule is subject to adjustment depending on the needs of the class to focus more on a specific chapter.

Grading Plan:

Quizzes	20%	A → 90 to 100%	
Homework/Classwork	20%	B → 80 to 89%	
Midterm/Finals	50%	C → 70 to 79%	
		D → 60 to 69%	
Attendance/Participation	10%	F → 59% and below	

Federal Compliance - Credit Hour Allocation: 2:1
- **For every credit hour spent in a class, a student is expected to spend two (2) hours outside of class studying the course materials.**

Course Policies

Grading Policy
 Student accountability is one key component to success. In order to achieve desired results in learning concepts in Technical Math II, the students are encouraged to practice solving problems to reinforce the lesson. Furthermore class participation will allow the students to share their ideas through their different learning styles. Cheating and plagiarism are strictly forbidden of which include copying other student's work, lifting text from copyrighted published work, and other similar forms of infringement.

Class Expectations
1. Class starts on time and ends on time.
2. Participate in class activities.
3. Use of electronic devices are prohibited (in case of emergency notify the teacher).
4. In case of makeup test a valid written note is required.
5. Be respectful at all times.

Participation
Students are expected to attend and participate in all class activities- as listed above, as it is part of 10% of the grade. Points will be given to students who actively participate in class activities that include cooperative learning activities, discovery learning activities, classwork, and sharing

Electronic Devices Policy
For courtesy sake, please turn cell phones off or place them on silence or vibrate mode BEFORE coming to class. Also, answer cell phones **OUTSIDE OF CLASS** (not in the classroom). Exercising cell phone use courtesy is appreciated by both the instructor and classmates. Headphones are to be removed before coming to class.

Attendance Policy
The students are required to follow the course schedule. To promote integrity of attendance, the students will be awarded 10% of the total grade based on attendance earned throughout the semester. Furthermore, a student who misses 4 or more days of classes (not necessarily consecutive days), will be dropped from the class or be given with a grade of "F". Also, if a student is already absent for 3 days that are not necessarily consecutive days, he or she may be referred to the counseling office.

Note: (1) Missing a lot of classes may jeopardize a student's chance to earn enough percentage to pass. (2) Excused absences (i.e. with doctor's slip) will not jeopardize attendance percentage but missed works are never excused. Rare instances will not be sufficient to jeopardize grades but recurring instances may. **See also Late Assignments / Work**

Late Assignments or Work
Due dates are assigned during the class. Practice assignments done in class are due the same day unless the teacher assigns an extension date of submission. Submitting work beyond the date will incur a grade penalty. Scores will be capped to 60% for up to 3-day late submissions. Submitting work that is 2 weeks late will not receive any more grades but the teacher will accept the work for completion purposes.

Academic Integrity
Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the college community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor.

Diné Philosophy of Learning
Nitsáhákees – higher ordered thinking skills
Nahátáh – motivation; task-based planning
Íína – livelihood education; practical knowledge
Sihasin – application and affirmation of the three philosophies

Student with Disabilities
The Navajo Technical University and the General Science program are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability, or needs special accommodations should inform the instructor privately of such so that accommodations arrangement can be made. Students who need an accommodation should also contact the Special Needs Counselor.