CMI COURSE OUTLINE

CIP No. 33.0104 **Version No.**002

Math 099 **Alpha Number**
Fundamentals of Mathematics **Course Title**
Previous Alpha Number:

Course Description: Focuses on application of mathematical skills to solving problems that are relevant to Non-STEM students for Credit level Math that does not lead to College Algebra and Calculus. Topics include principles and applications of decimals, fractions, ratio, proportions, signed operations, properties of operations, order of operations, measurements, perimeter, area and volume of plane geometric figures, and introduction to Statistics and Probability.

Course originally prepared by: Adedayo Ogunmokun/Edward Alfonso STeM March/2021
Most recent revision by: Adedayo Ogunmokun/Edward Alfonso STeM June/2024

Course mode(s): __x__ Face to Face (including Zoom) ____ Hybrid ____ Distance Education

Credits calculated by: __x__ Credit Hour ____ Clock Hour

Contact Hours: ___60___

Type	No. of Hours	No. of Credits	Maximum No. of Hours Online
Lecture/Seminar/Workshop	60	4	
Clinical			
Practicum			
Lab			
Fieldwork			
Studio Time			
Total	60	4	

Purpose(s) of Course:
Degree Requirement _____
Degree Elective _____
General Education _____
Credit Certification _____
Developmental _____x_____
CTE/TVET _____
ABE/Adult HS _____

Distribution Area:
Humanities _____
Social Sciences _____
Mathematics (Credit) _____
Science _____

Prerequisite: Math 089 or Placement

4	LA Critical Thinking; LA Quantitative/Scientific Literacy GE Problem Solving GE Quantitative Literacy	P	The concept of chance and variation in life forms the fundamental basis of modern optimization methods, statistics, and risk modeling which can directly impact our lives.
5	LA Quantitative/Scientific Literacy GE Quantitative Literacy	M	Geometry and measurement develop an understanding of the connection between form and function of common shapes.
6	LA Quantitative/Scientific Literacy GE Quantitative Literacy	M	Understanding the complex world by collecting, organizing, analyzing, and interpreting data or making sense of observation and how to draw valid decisions.

Course Content: Students in this course will be able to understand:

1. Problem solving and sets
2. Number Sequences
3. Personal finance
4. Geometry and measurements
5. Counting principle and probability
6. Statistics

Higher Order Thinking Skills: Students in this course will experience:

__X_ Analyzing the basic elements of an idea, experience, or theory
__X_ Making judgments about the value or soundness of information, arguments, or methods
__X_ Applying theories or concepts to practical problems or in new situations

Recommended Methods of Instruction

___X__ Demonstration
___X__ Lecture
___X__ Small group discussion
___X__ Class discussion
___X__ Audio-Visual Aids
_____ Laboratory
___X__ Supervised Practice
_____ Field Trips
___X__ Other: Online learning support system, Rich Tasks, Projects

Recommended Assessment Tool Type(s):

_____ Case Study
_____ Critique of Performance
__x__ Exam/Quiz In-Course
_____ Exam/Quiz Standardized (attach narrative describing development and validation process) _____
Focus Group
__x__ Group Project
__x__ Individual Project
_____ Observation
_____ Portfolio Review
_____ Presentation
_____ Simulation
_____ Skill Performance

CMI COURSE CURRICULUM
COURSE ACTION

Course Title: College Trigonometry **Alpha Number:** MATH 121 **CIP No.** 27.0102

Type of Action:

_____New Course (attach narrative justification for course creation)

_____Substantive Revision (attach narrative justification for changes, including assessment and/or achievement data and feedback from the advisory committee if relevant)

Select all that apply:
_____Change in number of credit hours
_____Change in prerequisite
_____Substantive change in course content
_____Change to SLOs _____Other:

__x___Non-substantive Revision
Select all that apply:
_____Change in Alpha Number or Title (unless letter abbreviation has not previously been used)
_____Edit to course description that does not alter the substance of the course
___x__Change to recommended texts
___x__Other: Change in number of contact hours from 64 to 60, and rewording of SLO 3

_____ Reinstitution of Archived Course (attach narrative justification for reinstitution, including evidence of demand, evidence of capacity, feedback from the advisory committee if relevant, and commentary that speaks directly to the reasons the course was initially archived)

_____ Reaffirmation of Course (only allowable if course completion rate exceeds ISS, the benchmark has been met for the majority of SLO assessments, and there is no evidence of inequitable levels of achievement across subpopulations; attach evidence)

Approvals:

	Name	Signature	Date
Department Chair	Edward Alfonso	DocuSigned by:	6/6/2024
Curriculum Committee Chair	Desmond Doulatram	DocuSigned by:	6/5/2024
Dean	Vasemaca Savu	DocuSigned by:	6/5/2024
VPASA	Dr. Elizabeth Switaj	DocuSigned by:	6/10/2024

CMI COURSE OUTLINE

CIP No. 27.0102 **Version No.** 002

MATH 121 — **Alpha Number**
College Trigonometry — **Course Title**
Previous Alpha Number:

Course Description: Provides foundational knowledge necessary for the study of calculus and essential skills for STEM pathways. Emphasis is placed on trigonometric functions and its graphs, identities and proofs, polar coordinates, and introduction to vectors.

Course originally prepared by: Mathematics Department STEM February/2003
Most recent revision by: Waisiki Baleikorocau STeM June/2024

Course mode(s): __x__Face to Face (including Zoom) ____ Hybrid ____ Distance Education

Credits calculated by: __x__Credit Hour ____ Clock Hour

Contact Hours: 60

Type	No. of Hours	No. of Credits	Maximum No. of Hours Online
Lecture/Seminar/Workshop	60	4	
Clinical			
Practicum			
Lab			
Fieldwork			
Studio Time			
Total	60	4	

Purpose(s) of Course:
Degree Requirement _____
Degree Elective _____LA_____
General Education _____LA_____
Credit Certification _____
Developmental _____
CTE/TVET _____ _____
ABE/Adult HS _____ _____

Distribution Area:
Humanities _____
Social Sciences _____
Mathematics (Credit) _____x_____
Science _____

Prerequisite: C or better in Math 111

Student Learning Outcomes: Upon completion of this course, students will be able to:

1. Prove trigonometric identities.
2. Solve trigonometric equations.
3. Apply real world problems utilizing the concepts of trigonometry.
4. Graph and analyze trigonometric functions and its transformations.

SLO Mapping:

Prerequisite Course SLO	Linked SLO from this Course	Explanation
Math 111 SLO 1: Solve equations and inequalities using appropriate algebraic properties.	1, 2	Apply the knowledge of manipulating algebraic expression and solving equations to prove trigonometric identities and solve trig equations.
Math 111 SLO 2: Solve real world problems by utilizing selected functions and equations.	3	Provide clear steps to word problems using trigonometric concepts.
Math 111 SLO 3: Graph functions to show the relationship between graphs and equations.	4	Extend the work on graphing linear, quadratic, and rational functions to graphs of trigonometric functions.
Math 111 SLO 4: Verify and communicate solutions of selected functions and systems of non-linear equations.	2, 3	Ensure solutions to equations meet the necessary conditions.

Links to Program Learning Outcomes:

SLO	Linked PLO	I/P/M	Explanation of Link
1	LA Critical Thinking LA Quantitative/Scientific Literacy GE Quantitative Literacy	P	Trigonometric identities are tools used to simplify complicated expressions and solve trigonometric problems efficiently and accurately. These tools have applications in engineering, physics, geography, and other fields.
2	LA Critical Thinking LA Quantitative/Scientific Literacy GE Quantitative Literacy	P	Utilize appropriate algebraic or trigonometric tools to solve the equation. Considering restrictions on the domain.
3	LA Critical Thinking LA Quantitative/Scientific Literacy GE Quantitative Literacy GE Problem Solving	P	The concepts in trigonometry has practical application in many aspects of our lives such as measure distances, solve problems, and understand the world around us.
4	LA Critical Thinking LA Quantitative/Scientific Literacy GE Quantitative Literacy	P	Allow students to illustrate the relationship of data visually considering the domain, range, asymptotes, vertical and horizontal phase shifts.

Course Content: Students in this course will be able to understand:

1. College algebra review
2. Angles in degrees and radians, arc length, unit circle
3. Right triangle trigonometry
4. Graphs of trigonometric functions
5. Inverse trigonometric functions
6. Trigonometric identities
7. Solving trigonometric equations
8. Law of sines and cosines
9. Vector applications
10. Applications and models

Higher Order Thinking Skills: Students in this course will experience:

__x_ Analyzing the basic elements of an idea, experience, or theory
__x_ Making judgments about the value or soundness of information, arguments, or methods
__x_ Applying theories or concepts to practical problems or in new situations

Recommended Methods of Instruction

___x__ Demonstration
___x__ Lecture
___x__ Small group discussion
___x__ Class discussion
___x__ Audio-Visual Aids
_____ Laboratory
___x__ Supervised Practice
_____ Field Trips
___x__ Other: Online learning support system

Recommended Assessment Tool Type(s):

_____ Case Study
_____ Critique of Performance
__x__ Exam/Quiz In-Course
_____ Exam/Quiz Standardized (attach narrative describing development and validation process)
_____ Focus Group
__x__ Group Project
__x__ Individual Project
_____ Observation
_____ Portfolio Review
_____ Presentation
_____ Simulation
_____ Skill Performance
_____ Supervisor Evaluation
_____ Survey
__x__ Written Assignment

Required Forms of Regular and Substantive Interaction for Hybrid or Distance Education Courses (Select at Least Two):

_____ Direct instruction through:
_____ Live video lectures
_____ Live audio-only lectures
_____ Live text chats
_____ Assessing or providing feedback on a student's coursework
_____ Providing information or responding to questions about the content of a course or competency through:
_____ Live video discussions
_____ Live audio-only discussions
_____ Live text chats
_____ Asynchronous message boards or text chats
_____ Facilitating a group discussion regarding the content of a course or competency through:
_____ Live video discussions
_____ Live audio-only discussions
_____ Live text chats
_____ Asynchronous message boards or text chats
_____ Other, specify:

Note: for distance education courses, if only two are selected, both must occur within the course on a weekly basis. If more than two are selected, the instructor may choose which two are used during each week.

Equipment and Materials:

1. Recommended texts: James Stewart, Precalculus Mathematics for Calculus, 8th Edition, Cengage Learning, 2024. ISBN-13: 9798214031811

2. Equipment/Facilities: Calculators (scientific & graphing), computer lab.

3. Materials and Supplies:

Connection to College Mission:

The College of the Marshall Islands will provide our community with access to quality, higher and further educational services, prioritize student success through engagement in relevant Academic, Career and Technical Education, and be a center for the study of Marshallese Culture. It will also provide intellectual resources and facilitate research specific to the needs of the nation. *EC approved 4th Nov, 2020.BOR approved 1st December, 2020*

The course is designed for students that are interested in other fields in mathematics, sciences, or engineering. Every field has specific tools to solve problems and trigonometry offers new tools to understand a problem, apply the appropriate tools in order to get the result.

Connection to Department Mission:

The mission of the Science, Technology, and Mathematics (STeM) Department is to provide science, technology and mathematics courses to support academic programs and prepare students seeking careers in marine science or an advanced education in a STeM discipline.
Approved by CC on March 5, 2018. Approved by IEC on March 14, 2018.

MATH 121 course supports the Department mission by providing students the necessary competencies that complements their academic program and preparedness for future careers or advanced education in a STEM discipline

Justification for Changes:

In the changes of students' learning outcome “Utilize and apply technology to solve real world problems” was removed and integrated into the revised SLO “Apply real world problems utilizing the concepts of trigonometry”. There is also a change of recommended textbook from Blitzer to Cengage textbook.