Core Curriculum Course Submission
Criteria: Math

1. General Information

a. Originating Person	b. Contact Person's E-mail	c. Contact Phone	d. Date
Rebecca Streett	rastreett@ualr.edu	(501)569-8100	9-22-2014

e. College/School	f. Department/Program
College of Arts, Letters, & Sciences	Mathematics and Statistics

☒ **Submission Statement**

By submitting this form, we acknowledge our understanding that the Core Council has the authority to review approved courses to ensure they continue to meet the established goals and outcomes of that category of the core; that the Council has authority to develop a core assessment program; and that the Council will be developing review and assessment policies by the end of 2014. Further, we agree that if this course is approved, we will participate in the university-wide assessment of the core.

☒ **Chair and Dean Awareness**

A separate statement from the chair must be included that states that the department faculty have approved this course for submission to the core and that the chair takes responsibility for informing the Dean about the submission of the course.

2. Course Information

a. Course ID	b. Current Title
MATH 1303	Trigonometry

c. Catalog Description

Prerequisite: A grade of C or greater in MATH1302, an equivalent transfer course, or a suitable score on a mathematics placement test. Co-requisite with consent of instructor: MATH1302. Circular functions and their graphs, identities, angles and their measure, functions of angles, right triangles, Law of Sines, Law of Cosines, inverses of circular functions, solutions of trigonometric equations, complex numbers, and De Moivre's Theorem. Three hours lecture. Three credit hours. (ACTS Course Number MATH 1203)

d. How will your department ensure a level of consistency among sections of this course? Who will be responsible for this?

The Chair collects and reviews all syllabi for consistency of learning objectives. New faculty, adjunct faculty, and teaching assistants are given sample syllabi for the courses they teach. Chair and peer review committee are responsible for ensuring consistency among all sections of Trigonometry. All sections of Trigonometry use a mandatory online homework/quiz delivery system.

Educational Goals	Learning Outcomes students will	Learning Objectives: At the end of the course students will be able to	Assignments	Explanation
Knowledge 1 –Concepts, methodologies, findings, and applications of mathematics and the social and natural sciences, engineering and technology.	1. understand mathematical relationships among quantities;	Learning Objectives 1.1 define and identify a function, and classify if a relationship represents a function or not based on a graph, a set of ordered pairs, a mapping or an equation;convert degrees to radians, and radians to degrees;analyze the relationships between the graphs of many different functions with respect to their symmetry, translations, asymptotes, domain, range, x and y intercepts;convert complex numbers from rectangular form to trigonometric form, and vice versa.	Assignments 1.1 Class discussions, homework, quizzes, and exam.	Explanation 1.1 The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
	2. understand fundamental mathematical/algebraic operations;	Learning Objectives 1.2	Assignments 1.2	Explanation 1.2

			find and interpret function values obtained for any defined trigonometric function;apply algebraic operations on trigonometric functions in order to evaluate .	Class discussions, homework, quizzes, and exam.	The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.

Educational Goals	Learning Outcomes students will	Learning Objectives: At the end of the course students will be able to	Assignments	Explanation
	1. use basic mathematical formulas and terminology:	**Learning Objectives 1.1** solve equations using trigonometric identities and theorems;analyze right triangles and oblique triangles using Pythagorean Theorem, trigonometric identities, the Law of Sines, and the Law of Cosines;graph trigonometric functions, and identify vertical translations and phase shifts;evaluate circular and inverse circular functions; verify trigonometric identities.	**Assignments 1.1** Class discussions, homework, quizzes, and exam.	**Explanation 1.1** The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
Skills 1 – Communication				

	2. explain orally and in writing the mathematical "reasonableness" of a statement that is presented as being implied by data	**Learning Objectives 1.2** explain why an obtained answer may not make sense in a given application problem;use estimation skills to determine the reasonableness of an answer obtained when solving equations (trigonometric and polar) and application problems.	**Assignments 1.2** Class discussions, homework, quizzes, and exam.	**Explanation 1.2** The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
	3. communicate about math precisely orally and in writing	**Learning Objectives 1.3** communicate, orally and in writing, their solutions to problems or their procedures for solving problems.	**Assignments 1.3** Class discussions, homework, quizzes, and exam.	**Explanation 1.3** The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
Educational Goals	**Learning Outcomes students will**	**Learning Objectives: At the end of the course students will be able to**	**Assignments**	**Explanation**
	1. interpret, analyze, and identify appropriate applied math models, data and graphs;	**Learning Objectives 2.1**	**Assignments 2.1**	**Explanation 2.1**

	analyze trigonometric and polar equations using the following theorems: Pythagorean , Product and Quotient, and De Moivre's; explain the characteristics of trigonometric functions and their asymptotic behavior;interpret and analyze graphs and mathematical models based on important characteristics such as shape, parent function, transformations, symmetry, asymptotes, initial conditions.	Class discussions, homework, quizzes, and exam.	The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
2. develop abstract and quantitative reasoning ability;	**Learning Objectives 2.2**	**Assignments 2.2**	**Explanation 2.2**

| | | | make predictions regarding any general function based on their understanding of functions and the operations on functions;estimate and check answers to the mathematical problems encountered in the course in order to determine reasonableness, identify alternatives, and select optimal results;understand how real-world problems and social issues can be analyzed using the power and rigor of mathematical models. | Class discussions, homework, quizzes, and exam. | The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam. |

Educational Goals	Learning Outcomes students will	Learning Objectives: At the end of the course students will be able to	Assignments	Explanation
Skills 3 – Information Technology	1. make appropriate decisions regarding the use of technology when solving problems, recognizing both the insight to be gained and the limitation;	**Learning Objectives 3.1** **effectively use a graphing calculator to analyze the graphs of trigonometric functions;determine when the use of the technology is appropriate and when it is not.**	**Assignments 3.1** **Class discussions, homework, quizzes, and exam.**	**Explanation 3.1** The learning objectives will be accomplished via in-class problem solving where instructors share their strategies and insights on proper use of the technology (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
	2. use information resources like the internet reflectively for inquiry, exploration, and communication;	**Learning Objectives 3.1** **use the internet to communicate via email, and as a resource for supplemental explanations.**	**Assignments 3.1** **Online homework and quizzes.**	**Explanation 3.1** This learning objective will be accomplished via the internet. Students are encouraged to seek alternate explanations via the internet. Instructors may communicate with students via email at any time during the semester.
Educational Goals	Learning Outcomes students will	Learning Objectives: At the end of the course students will be able to	Assignments	Explanation
Values 1 – Personal Responsibility and Ethical Behavior	1. take responsibility for completing assignments in an honest and ethical manner, working on their own when required and acknowledging resources when used;	**Learning Objectives 1.1** **understand the importance of following the UALR policies on academic integrity.**	**Assignments 1.1** **Proctored exams.**	**Explanation 1.1** **Throughout the semester, students are reminded of the importance of following the UALR, departmental and course (stated on the syllabus) policies of academic dishonesty to accomplish this objective.**
	2. understand the duty to be precise and accurate with data;	**Learning Objectives 1.2**	**Assignments 1.2**	**Explanation 1.2**

		understand that precision and accuracy are critical components of interpreting data and solving problems correctly, and will be precise and accurate when communicating to others the conclusions of their results.	Class discussions, homework, quizzes, and exam.	The learning objectives will be accomplished via in-class problem solving where instructors share their strategies and insights on proper use of the technology (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.
Educational Goals	**Learning Outcomes students will**	**Learning Objectives: At the end of the course students will be able to**	**Assignments**	**Explanation**
Value 3-Global and cultural Understanding	1. analyze "real world" implications and develop mathematical models that aid in the understanding of current global issues.	**Learning Objectives 3.1** understand how real-world problems and social issues can be analyzed using the power and rigor of mathematical models;recognize that many mathematical models will only work under a given set of initial conditions.	**Assignments 3.1** Class discussions, homework, quizzes, and exam.	**Explanation 3.1** The learning objectives will be accomplished via in-class problem solving and discussion (online Q&A discussion boards) and will be assessed via online homework assignments, tests, quizzes and the final exam.

Additional Comments:

Johanna M Thomas   10/6/14   _[signature]_   10/27/2014

Approved by Core Curriculum Committee   Date   Approved by Provost   Date

_____   10-22-14
Approved by Chancellor   Date