COURSE OUTLINE: MTH 94 - ACE CORE MATHEMATICS

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Course Code: Title	MTH 94: ACE CORE MATHEMATICS
Program Number: Name	8220: ACAD CAREER ENTRANCE
Department:	ACAD. UPGRADING SPONSORSHIP
Semesters/Terms:	18F, 19W, 19S
Course Description:	This ACE-level course serves as an introduction or review of basic geometry, linear (including piecewise linear) and quadratic functions compulsory - and trigonometry or proportional reasoning elective. (Students must complete course outcomes 1-4, students will choose between course outcomes 5 and 6.) It is possible, but not assumed, that the outcomes can be achieved in less than one semester. This course can stand alone as an ACE credit, or serve as a prerequisite to MTH 95, 96 or 97.
Total Credits:	5
Hours/Week:	5
Total Hours:	50
Prerequisites:	MTH050
Corequisites:	There are no co-requisites for this course.
Substitutes:	ACE035
This course is a pre-requisite for:	MTH 95, MTH 96, MTH 97
Essential Employability Skills (EES) addressed in this course:	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.
Course Evaluation:	Passing Grade: 70%, B
Books and Required Resources:	Mathematics for Work and Everyday Life MEL4E-B Lessons 1-5 by Independent Learning Center Mathematics for Work and Everyday Life MEL4E-B Lessons 6-10 by Independent Learning Center Mathematics for Work and Everyday Life MEL4E-B Lessons 11-15 by Independent Learning Center Mathematics for Work and Everyday Life MEL4E-B Lessons 16-20 by Independent Learning Center

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Upon successful completion of this course, the student will demonstrate the ability to apply geometric principles to problems involving angles, triangles, polygons, parallel lines and quadrilaterals.	1.1 Find the optimal values of various measurements of rectangles. 1.2 Solve problems involving two- and three- dimensional figures. 1.3 Use basic geometric terminology. 1.4 Use properties of angles, triangles, quadrilaterals and parallel lines to solve geometric problems.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2.Upon successful completion of this course, the student will demonstrate the ability to analyze linear functions both graphically and algebraically.	2.1 Write, solve and verify linear equations in the form of either direct or partial variation. 2.2 Determine graphically a point of intersection of two relations. 2.3 Solve a system of equations algebraically, using substitution or elimination.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Upon successful completion of this course, the student will demonstrate the ability to analyze situations that can be represented by piecewise linear graphs.	3.1 Explain situations that would reasonably involve piecewise linear functions. 3.2 Sketch a graph involving a piecewise linear function from a created table of values. 3.3 Answer questions related to piecewise graphs by interpolation and extrapolation.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Upon successful completion of this course, the student will demonstrate the ability to analyze quadratic functions and relationships.	4.1 Compare linear and quadratic functions. 4.2 Manipulate algebraic expressions that represent quadratic functions. 4.3 Determine the relationships between the graphs and the equations of quadratic functions. 4.4 Solve problems by interpreting the graphs of quadratic functions.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Upon successful completion of this course, the student will demonstrate the ability to solve problems involving right triangles using trigonometry, or involving similar triangles.	5.1 Determine properties of similar triangles. 5.2 Solve problems involving similar triangles. 5.3 Use the Pythagorean Theorem to calculate unknowns. 5.4 Solve problems involving use of the tangent ratio, sine ratio and cosine ratio. 5.5 Determine the appropriate trigonometric ratio needed to solve unknown sides and angles in right triangles.
Course Outcome 6	**Learning Objectives for Course Outcome 6**
6. Upon successful completion of this course, the student will demonstrate the ability to solve applied problems based on proportional reasoning.	6.1 Solve problems involving percent, ratio, rate and proportion. 6.2 Solve proportional problems using diagrams, fractions, tables and graphs. 6.3 Solve problems derived from a variety of applications, using proportional reasoning.

Evaluation Process and

Evaluation Type	Evaluation Weight	Course Outcome Assessed

Grading System:			
	Learning Activities	20%	
	Unit Tests	80%	
Date:	August 30, 2018		
	Please refer to the course outline addendum on the Learning Management System for further information.		