Mississippi Valley State University
Department of Mathematics, Computer & Information Sciences
Fall 2018

Course Number: MA 333 **Course Title: Concepts of Mathematics III**

The College of Education Theme: ***The Holistic Transformer: Scholars, Facilitators, Reflexive Thinkers and Life-Long Learners.***

Instructor: Candace Carter-Stevens
Class Meetings: MWF 1:00-1:50 pm-- CRB 104/141
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Phone: 662.254.3398
E-mail Address: ccarter@mvsu.edu
Office Hours: MWF 9-10am, 12-1pm, 2-3pm
TEXT MSG: text @mvsucol to the number 81010

Facebook: Stevens MathClass

Textbook: No textbook required.
There are no books or materials to purchase. I encourage you to bring a laptop, if you have one, but this is not required. We will make use of some online materials, such as

- Khan Academy , http://www.khanacademy.org
- Mississippi College and Career Readiness Standards for Mathematics, https://districtaccess.mde.k12.ms.us/curriculumandInstruction/Mathematics%20Resources/MS%20CCSSM%20Framework%20Documents/2016-MS-CCRS-Math.pdf

I. Course Description:

This course provides the essential elements of geometry needed to be successful in any course requiring a basic geometry prerequisite. Deductive reasoning points, lines, distance, rays, angles, angular measurements, bisector, congruent triangle, similar triangle, and overlapping triangle, transformations, reflections, translations, rotations, inequalities, exterior angle theorem, triangle side and angle inequalities, parallel and perpendicular lines, quadrilaterals. The prerequisite is College Algebra (MA 111) or Calculus 1 (MA 299).

II. Purpose:

The purpose of this course is threefold: a) To analyze characteristics and properties of two and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships, b) To specify locations and describe spatial relationships using coordinate geometry and other representational systems and c) to use visualization, spatial reasoning, and geometric modeling to solve problems.

III. Course Overview:

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This course represents a competency-based approach designed to enable students to develop skills specific to knowledge, comprehension, and application levels of learning. Topics include: Problem solving, logic, basic concepts of 2-dimentional and 3-dimentional geometry, congruence and similarity of triangles and measurement.

IV. Course Rationale:

This course should enable the students to: a) build new mathematical knowledge through problem solving, b) recognize reasoning and proof as fundamental aspects of mathematics, c) organize and consolidate their mathematical thinking through communication, d) recognize and use connections among mathematical ideas, and e) create and use representations to organize, record and communicate mathematical ideas.

V. Course Outcomes and Learning Objectives:

Class activities are centered on attainment of the outcomes and course learning objectives listed below. The objectives are reflective of those behaviors advocated by the College of Education, state and national standards we well as Praxis content teaching exam. Following each objective and enclosed in parenthesis are abbreviation and numbers that reference the standard.

Outcome I: Elementary education teacher candidates will demonstrate the subject matter content and professional knowledge that will distinguish the teacher candidate as a perspective Teacher as a Scholar.

A. Objective-Knowledge

1. Discuss the assessment of student=s mathematical understanding and the use of rubrics for scoring student=s work (NCTM 5).
2. Students use acceptable written, oral and nonverbal communications in class (NCTM 6), (INTASC 6).
3. Provides opportunities for students to cooperate, communicate, and interact with one another to enhance learning (INTASC 6).
4. Build new mathematical knowledge through problem solving (NCTM 1).
5. Recognize reasoning and proof as fundamental aspects of mathematics (NCTM 3), (INTASC 4).

Outcome II: Elementary education teacher candidates will demonstrate the principles of effective classroom management and the ability to use a range of strategies to promote relationships, cooperative, and purposeful learning in the classroom. Teacher as a Facilitator.

B. Objective-Knowledge

1. Teacher uses the discovery method to teach problem-solving (NCTM 1).
2. Provides opportunities for students to cooperate, communicate, and interact with one another to enhance learning (NCTM 3, 4).
3. Teacher uses a variety of appropriate teaching strategies (NCTM 1), (INTASC 7, 8).

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Outcome III: Elementary education teacher candidates will demonstrate Content knowledge, and reflect on their experiences in order to make changes. That is, demonstrating attributes of a Reflective Thinker.

C. Objective-Knowledge

1. Teacher use appropriate techniques for evaluating what students actually know and for correcting common error (NCTM 3, 4).
2. Teacher listens to students and demonstrates interest in what they are saying (NCTM 3). (INTASC 3).
3. Teacher uses assessment procedures that furnish useful information to both teacher and student (NCTM 5).

Outcome IV: Elementary education teacher candidates will seek opportunities to grow professionally. Therefore, becoming a Life-long Learner.

D. Objective-Knowledge

1. Teacher demonstrates an understanding of how to use software resources, computer activities, and internet resources (NCTM 3, 6), (INTASC 1, 9, 10).
2. Utilize professional literature as a resource for current trends in elementary mathematic education (INTASC 9).
3. Teacher demonstrates an understanding of how children learn by employing research theories on learning, assessment and effective instruction (NCTM 3, 4), (INTASC 1, 9, 10).

VI. Outline of Course Content:

- **a.** Understand transformations in a plane
- **b.** Understand how to prove geometric theorems such as those about lines and angles, triangles, and parallelograms
- **c.** Understand how geometric constructions are made with a variety of tools and methods
- **d.** Understand congruence and similarity in terms of transformations
- **e.** Understand and apply theorems about circles
- **f.** Understand arc length and area measurements of sectors of circles
- **g.** Understand how perimeter, area, surface area, and volume formulas are used to solve problems
- **h.** Know how to visualize relationships between two-dimensional and three dimensional objects
- **i.** Know how to apply geometric concepts in real-world situations
- **j.** Understand the properties of parallel and perpendicular lines, triangles, quadrilaterals, polygons, and circles and how they can be used in problem solving

VII. Learning Activities:

a. Solve all problems in exercise sets (Khan Academy)
b. Demonstrations of mathematical concepts, skills and strategies,

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c. Participate in class discussion.
e. Participate in exams and final examination.
f. Search Websites for articles/related exercises.
g. PowerPoint presentations

Technology Infusion

Student presentations will be done using PowerPoint. Students will use the internet to explore activities on a given concept. ***Note** *You are responsible for submitting your work* Khan Academy. *I do not have control over technical issues you may encounter with YOUR computer at home when using* Khan Academy *Therefore, if you do no submit your work to me by the deadline because of technical issues, then you should find another avenue to do your work. (The Math Lab 108/109 is open for your convenience from 8am-5pm).*

Calendar of Activities/Course Outline/Schedule

Exam 1 Material

Week	Dates	Section Title Points & Lines, Angles, and Planes	Important Information
1	8/20-8/24	Introductions, Syllabus, Lab accounts,	**8/20 Classes Begin** • Late Registration Fee - $100.00 Assessed
2	8/27-8/31	Khan Academy Review, Group Assignments *Lines and Planes,* KA: • Recognizing rays, lines, and line segments • Drawing rays, lines, and line segments • Points, lines, and planes • Geometric definitions	
3	9/3-9/7	***9/3 (MONDAY)-LABOR DAY HOLIDAY-NO CLASS*** *Angles* KA: • Measuring Angles • Angle types • Complimentary and supplementary angles • Vertical angles	

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		• Finding Angle Measure 1 • Finding Angle Measure 2	
4	9/10-9/14	Parallel and Perpendicular Lines KA: • Equation practice with congruent angles • Recognizing parallel and perpendicular lines • Parallel lines	**9/10** **Last Day to Drop/Add Classes** **Registration Closes** **9/14 Financial Clearance/Report of Non-Attendance**

Exam 1 *is 9/17 Failure to report for exam will result in a penalty. See exam rules.*

Exam 2 Material

Week	Dates	Section Title TrianglesPolygons	Homework and Quiz Expiration Date
5	9/17-9/21	**Exam 1** **Monday, 9/12**	
6	9/24-9/28	*Triangles* KA: • Recognizing triangle types • Find Angles in Triangle • Determine similar triangles AA • Determine similar triangles SSS • Solving Similar Triangles (Basic) • Area of triangles	
7	10/1-10/5 **Wednesday, 10/3**	*Pythagorean Theorem and Special Right Triangles* KA: • Pythagorean Theorem • Pythagorean Theorem word problems	**10/3** **MID-TERM EXAM**
8	10/8-10/12	*Quadrilaterals* KA: • Quadrilateral Types • Quadrilateral problems on the coordinate plane	**10/8*Monday-10/10Wednesday*** Academic Advisement **10/11** ***Thursday*** Online Registration begins for Spring 2019

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Week	**Dates**	**Section Title** **Transformations**	
9	10/15-10/19	*TRANSLATIONS* KA: • Perform translations • Draw image of a translation • Find the translation that maps a given figure to another *ROTATIONS* KA: • Perform rotations • Draw the image of a rotation about the origin	**10/10** ***Monday-10/12 Wednesday*** Academic Advisement **10/13** ***Thursday*** Online Registration begins for Spring 2017
10	10/22-10/26	*REFLECTIONS* • Reflecting points on the coordinate plane • Perform reflections • Draw the image of a reflection *SYMMETRY* KA: • Identifying lines of symmetry and symmetrical figures	
11	10/29-11/2	*Circles* KA: • radius, diameter, circumference • area of circle • Arc length • area of a sector	

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12	11/5-11/9 **Wednesday, 11/ 7**	Cross Sections (Handouts) **Exam3**	**11/9 Friday** Last Day to Withdraw from a Class

***Exam 3* is 11/7 Failure to report for exam will result in a penalty. See exam rule**

Continuation of Material

Week	Dates	Section Title Area and Volume	Homework and Quiz Expiration Date
13	11/12-11/16	*Surface Area* KA: • Nets of polyhedra • Surface area using nets • Surface area	**11/11 Friday** Last Day to Withdraw from the University
14	11/19-11/23	**NO CLASS**	**FALL BREAK/ THANKSGIVING HOLIDAY**
15	11/26-11/30	*Volume* KA: • Solid geometry word problems Volume word problems with cones, cylinders, and spheres	
16	12/3-12/7	**Final Exam Review Week**	

NOTE: Failure to adhere to any of the preceding statements could cause a decrease in the FINAL GRADE!!!!!!

VIII. Methods of Assessing Objectives/Grading

In-Class Activities and Khan Academy	40%
PowerPoint Presentations and Exams	60%

IX. Grading Scale

General Rubrics for classroom participation/journal writing.

AA@ Excellent: Full accomplishment

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AB@ Proficient: Substantial Accomplishment
AC@ Marginal: Partial Accomplishment
AD@ Unsatisfactory: Little Accomplishment

Along with daily quizzes, a total of four tests will be given. The mid-term and final examinations are included in the four tests.

Grading Scale:
89.5% - 100% = A
79.5% - 89.499. % = B
69.5% - 79.499...% = C
59.5% - 69.499...% = D
Below 59.5% = F

X. Plagiarism Policy:

All students enrolled at MVSU are expected to be honorable and to observe standards of conduct appropriate to a community of scholars. All acts of dishonesty in any academic work constitute academic misconduct. Verified cases of cheating, plagiarism, or fabrication will receive a zero grade on the assignment or test in which it occurs. A second case of cheating will be reported to the Vice President for Academic Affairs

XI. Attendance Policy:

Regular and punctual attendance is required of all students for all classes and related activities. All absences in this course are counted until this course has been officially dropped. Students who are absent for any reason whatsoever are expected to do the full work of the course, and are responsible to the instructor for work missed through late registration, illness, or any other cause. The student must realize that while absence from class itself is not justification for receiving a failing grade in a course, missing tests or assignments due to absence from class is a legitimate cause for failure (Student Handbook, pg. 16). It is the responsibility of the student to make arrangements with the instructor in instances where there has been a legitimate reason for the absence which can be documented.

Whenever students have three or more unexcused absences, instructors are required to report the absences to the office of the Dean of Student affairs. *In evening and weekend classes, a student is permitted only one unexcused absence. The student will receive an F in the course when he/she accumulates 3 unexcused absences.*

XII. Missed Exams:

All students can make up a missed exam with an approved absence. However, you do have the option to use the score of the next exam in place of the missed exam. Thus, the exam grade will be recorded twice. **No make-up work.**

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XIII. Special Needs Statement:

Students having any special needs (handicaps, problems, or any factors that may affect their performance in class or require special instructional strategies) should make these special needs known to the instructor during the **first week** of the course. The instructor meets with the student to insure access of available resources in the university and make appropriate instructional modifications

APA Accommodation:

If you have a disability that qualifies under the American with Disabilities Act (ADA) and require accommodations, contact the Services for Students with Disabilities (SSD) program for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. You can contact SSD if you are not certain whether a medical condition/disability qualifies. (see INFO BELOW)

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester. If you are determined to be eligible after your confidential consultation, you will be provided with a Memo of Accommodations that must be submitted to each of your instructors.

For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr.

Mr. Billy Benson, Jr., ADA Coordinator
Mississippi Valley State University
Office for Disability Accommodations, EMAP Computer Lab
Technical Education (IT) Building
Itta Bena, MS 38941
Telephone: 662-254-3005 or University College: 662.254.3442
Email: billy.benson@mvsu.edu

XIV. Cheating, Plagiarism/Academic Integrity and Penalties:

Cheating is a serious offense and will not be tolerated. You are expected to complete your own work for the homework assignments submitted on Hawkes Learning Systems for a grade, although you are free to seek assistance with similar problems before submitting your homework problems.

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Any student found cheating on homework or any other class activity will be subject to disciplinary action. Penalties for academic dishonesty might include the assignment of an "F" for the course grade and/or other administrative penalties consistent with the policies of the university.

XV. Pagers or Cell Phones

The volume of cell phones and pagers must be turned **off/vibrate** if you have these items with you in class. The noise is distracting not only to the instructor but to your classmates as well.

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