

Course: Math 233 - Measurement & Geom for Tchrs

Catalog Description: I, II, S. 3 Hr. PR: MATH 126 and Math 232 with a "C" or better. (For pre-service elementary education majors only.) Use of properties of real numbers, algebra, measurement and geometry to illuminate conceptual understanding and enhance problem solving techniques. The use of technology and manipulatives is infused throughout the course.

Semester: Fall 2012

Course Format: 2 hr Lecture. 1 hr Laboratory. 3 hr Credit

Prerequisites: Math 126 and Math 232 with a C or better

Location: Room 422 Armstrong Hall

Course Objectives: The objectives of this course are to improve the use and understanding of basic concepts and skills in the topic areas of measurement and geometry and to analyze elementary and middle school measurement and geometry topics from an advanced perspective. Computer laboratory explorations, experiments, and detailed problem-solving sessions will supplement the materials covered in the lecture part of the course.

Expected Learning Outcomes:

Upon successful completion of this course:

1. Students will be able to use dimensional analysis, coordinate geometry, similarity and congruence, and transformations with problem solving strategies to solve authentic problems.
2. Students will be able to explain and recognize levels of the Van Hiele Theory.
3. Students will be able to analyze various polygons and polyhedra and use their properties to solve problems.
4. Students will be able to use 3-dimensional models and manipulatives to explain geometric concepts and solve problems.
5. Students will be able to use the English and Metric system of measurement fluently.
6. Students will be able to apply and use the Pythagorean Theorem.
7. Students will be able to perform and justify straightedge constructions.
8. Students will be able to use postulates, axioms, and definitions of Euclidean geometry.
9. Students will be able to develop formal and informal proofs and arguments using deductive and inductive reasoning.

Required Text: Mathematics for Elementary Teachers: A Contemporary Approach with Student Activity set Edition 9. Publisher: Wiley ISBN: 13-978-0470-53134-1  
Accompanying Activity Manual; Laboratory Manual (Pyzdrowski)

Equipment Needed: Equipment Needed:

Although students may not be allowed to use calculators for some assignments and tests, students are expected to have a calculator (a graphing calculator is not required) at each class meeting, lab and testing session. Cell phone calculators are not permitted, nor may calculators be shared. In addition to a calculator, students will be required to purchase and use a compass, protractor, and a straight edge.

Grading: 3 Exams 37.5 %

Group Assignments (in and out of class): 12.5 %

Laboratories: 12.5 %

Reflection Paper(s) and Individual Assignments: 12.5%

Final Exam: 25 %

Total: 100 %

Grade Assignment: 100 – 90 A

89 – 80 B

79 – 70 C

69 – 60 D

59 – 0 F

**Grading Policy:**

- No make-up exams except by prior arrangement with instructor
- Late assignments will only be accepted at the next class meeting with a 10% penalty.
- Missed in-class laboratories will be made up during last class meeting. Students must be present in the laboratory to earn credit for doing the in-class laboratory assignments.
- Exam grading appeals must be submitted in writing on the day the exam is returned.
- For any grading issues not resolved by the student and instructor, a Math 232 Committee form should be filled out within two week of the issue's occurrence and no later than the first day of finals. The form should be turned in to the course instructor.

**Assignments:** Assignments will typically be given once or twice weekly. Some assignments are completed in a group and some are completed individually. All group and individual assignments are weighted equally. The total worth of group assignments, individual assignments and reflection paper(s) is 25%.

**Reflection Paper(s):** Students will receive a class handout describing the content expectations for this assignment as well as the parameters used for its assessment.

**Attendance Policy:** Consistent with WVU guidelines, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take a make up exam at an alternate time. Make-up exams for absences due to any other reason will be at the discretion of the instructor. Missed in- class assignments may not be made-up.

**Cell Phone and Texting Policy:** The use of cell phones and texting during class is disruptive to the class and interferes with your ability to focus on learning. For this reason, cell phone use and texting is prohibited during class and lab time. For a first occurrence of this activity, you will be asked to leave and may not return until the next class meeting. A second occurrence during the semester, implies a meeting with both the instructor and the course coordinator before you are permitted to return to the class and a letter regarding the matter will be sent to the College of Human Resources and Education.

**Social Justice Statement:** "West Virginia is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and nondiscrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class. Please advise me and make appropriate arrangement with Disability Services (293-6700)."

**Academic Integrity Statement:** "The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at <http://www.arc.wvu.edu/rightsa.html> Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter."