Prerequisites: MA 211

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Office Hours: M, W 2:30 – 3:30; T, R 1:30 – 3:00; other times by appointment

Course Overview: MA 331 Geometry 1 is a required course for all secondary mathematics education students and an elective course for other mathematics students. The primary purpose of this course is to study content essential for teachers of high school geometry.

Required Materials:

- **Text:**   D. Alexander and G. Koeberlein. *Elementary Geometry for College Students*. Brooks/Cole, 5th Edition, 2011.

- **Computer technology:** You must have *Geometer's Sketchpad* (GSP) installed on your laptop. (Take your computer to the Help Desk if you do not yet have it. **Do this immediately.** You will begin using GSP in a few days.)

- **Calculator:** A calculator is required. Have it with you in class at all times.

- **Mathematics "tool kit":** The following items will be used frequently. Gather them into a kit that you **bring to class with you every day**. You will also need these things when you are studying, working on problems, and taking tests. Include the following items in your kit:

    - ruler marked in both inches and centimeters
    - compass
    - protractor
    - mechanical pencils
    - colored pencils
    - eraser
    - scissors (for cutting paper)
    - graph paper (Graph paper is readily available wherever you get school supplies.)
    - plain, unlined paper will be needed for some activities

    Compile your toolkit immediately. You will need compass and straightedge (ruler) on day 2 (next class period) and thereafter.

Course Overview: Success in this course means that you:

- Demonstrate understanding of basic concepts, relationships, and results of fundamental Euclidean geometry.

- Speak and write the "language and symbolism" of geometry with accuracy and precision.

- Apply "reasoning and sense making" to everything you study, and present clear, precise, solid justification ("proof") for claims or conclusions that you make.

- Make conjectures, explore cases, and draw and justify conclusions based on your explorations.

- Solve challenging problems that require reasoning and sense making about geometry.

Course Requirements and Expectations:

- Attend every class and participate actively in class discussions and activities. Roll will be taken daily, and absences or late arrivals, as well as failure to participate, will negatively impact your grade.

- Complete all assignments on time. Homework assignments will be recorded. Selected assignments or parts of assignments will be graded. Missed or late assignments will not be credited.

- Read and study all of the assigned text material. You are responsible for material in the assigned readings, even if it is not directly addressed in class, and that material will be included in quizzes and tests. If you do not understand something in the reading, it is your responsibility to ask questions and get clarification. Questions are always welcome in class as well as in the office.

- Working with other students and discussing ideas with them can be very beneficial. <u>You are required to write your own solutions in your own words when completing assignments</u>, but you are also encouraged to study and discuss ideas with others. Much can be learned from explaining ideas to a peer.

- When writing up homework problems, it is essential that you give complete explanations and clearly explain your thinking (how you got the answer). A "naked answer" (like "12" or "triangle") will no receive credit, period. Every solution write-up must include a clear statement of the problem. (It should never be necessary to go back to the text to look up what the problem is that you are solving.)

- An assignment that was submitted on time but for which you received a poor evaluation may be reworked and resubmitted for additional consideration <u>within one week of the date on which the original assignment was returned</u>.

Assessment: Assessment of your progress will take place through graded assignments, quizzes, tests, examinations, and class participation.

Quizzes may be given at any time and will usually be unannounced. Missed quizzes cannot be made up. The lowest quiz score will be eliminated from the final grade; all other quizzes will be counted.

Mid-term exam will be given on **Friday, March 1**. This is the last class before the winter break. **There will be NO DEVIATIONS to this schedule.** The mid-term exam will be over all of the material covered to date. (Mid-term exam: 100 points.)

Final exam will be given according to the published NMU exam schedule **(Wednesday, May 1, 12:00–1:50 pm)**. It will be a comprehensive exam covering the entire course. (Final exam: 200 points.)

Two other tests will be given, one before the midterm and one between the midterm and the final. Dates and further details will be given in class approximately one week before the respective tests. (These tests: 100 points each.)

Homework assignments will be recorded. Selected assignments or parts of assignments will be graded. Missed or late assignments will not be credited.

Class attendance and active class participation will be weighed into the final grade. An "active participant" attends class every day, arrives on time, completes all assignments by their deadlines, asks and answers questions in class, and engages in group discussions and problem-solving activities. (A maximum of 100 points can be earned for perfect attendance and active class participation. Points will be deducted for classes missed, for late arrivals, and for lack of participation.)

Grading: Points will be assigned for quizzes, tests and examinations, homework, and class participation. Your grade will be determined by the percentage of the total possible points that you earn, as follows:

A = 93–100%; A– = 90–92%; B+ = 88–89%; B = 83–87%; B– = 80–-82%;
C+ = 78–79%; C = 73–77%; C– = 70–72%; D = 60–69%; F = below 60%