

MATH 312-001: Geometry
Syllabus, Spring 2022

Course goals. To develop basic concepts of geometry. Topics include analytic geometry and transformation geometry.

Prerequisite. Grade C or better in MATH 114.

Textbook. *Thinking geometrically*, by T. Q. Sibley, Math. Assoc. of America, 2015.

Additional recommended (but not required) textbooks.

1. *Analytic geometry*, by G. Fuller and D. Tarwater, Pearson, 7th edition, 1992 (related files F1-F3 will be posted on the Blackboard).
2. *Transformation geometry*, by G.E. Martin, Springer, 1982.

Classes. MW, 9:00 am–10:15 am, Exploratory Hall L111.

Instructor. Dr. Valeriu Soltan. Email: vsoltan@gmu.edu.

Office hours. MW, 11:00 am – 1:00 pm, Exploratory Hall 4202.

Homework. Problems for the homework are given in the course outline (see next page). Although these will not be collected, success in tests and final exam strongly depends on their completing and understanding.

Tests and exam. There will be four tests and the final exam. All tests and the final are open-notes. Calculators are allowed.

Grading. Each test and the final exam are 20% worth of the total grade. There is no grade curving, dropping, etc. Equivalence between scores and letters, recommended by GMU, is given in the table below.

A+	A	A-	B+	B	B-	C	F
100-96+	96-92+	92-90+	90-86+	86-83+	86-76+	70-60+	60-0

Attendance and make-ups. Each student is expected to attend class regularly. No make-ups for tests are allowed unless you provide a serious written excuse. Excused tests should be taken within a timely fashion before the last day of classes.

GMU policies on final exams. The final exam may not be given during the last week of classes. If you need to change the date of your final exam for unusual circumstances or because you have three final exams scheduled in one day, you have to obtain professor's approval at least a week prior to the last day of classes. Retaking quizzes, midterms, and final exam is not permitted.

Absence from the final exam will not be excused except for sickness on the day of the exam confirmed by physician's note or for other causes approved by the student's academic dean or director. If a student missed the final exam due to illness or a family emergency, an incomplete grade (IN) may be assigned provided the student took all three tests with a total score 36 or higher. If absence from the final exam is unexcused, the grade for the course is F.

Academic integrity and university policies. Mason is an Honor Code university. See for other policies at <http://universitypolicy.gmu.edu/>. Students are responsible for knowing and following established policies.

ODS. If you are a student with disability, please see me and contact the Office of Disability Services. All academic accommodations must be arranged through this office.

Religious holydays. If you observe upcoming religious holidays (see <https://ulife.gmu.edu/religious-holiday-calendar/>), please inform me one week in advance about a possible overlap with a day of quiz, midterm, or final exam.

COURSE OUTLINE

Class Date	Sections	HW Problems
01/24	F1.1	F1.1: 20, 22, 26, 34, 36.
01/26	F1.2	F1.2: 24, 28, 36, 44, 50.
01/31	F1.3	F1.3: 12, 14, 26, 28, 30.
02/02	F1.4	F1.4: 1, 2, 7, 9, 11.
02/07	Practice	
02/09	Test 1	Sections F1.1-F1.4
02/14	F2.1	F2.1: 10, 24, 34, 42.
02/16	F2.2	F2.2: 10, 18, 22, 28, 32.
02/21	F2.4	F2.4: 4, 8, 16, 20.
02/23	F2.6	F2.6: 6, 10, 12, 16, 20, 28.
02/28	Practice	
03/02	Test 2	Sections F2.1, F2.2, F2.4, F2.6.
03/07	F3.1	F3.1: 6, 8, 12, 14, 18, 24, 26.
03/09	F3.2	F3.2: 2, 4, 10, 16, 20, 24, 28.
03/14	F3.3	F3.3: 14, 18, 22, 26, 28, 32, 36.
03/16	<i>Spring Recess</i>	
03/21	<i>Spring Recess</i>	
03/23	F3.4	F3.4: 10, 12, 14, 18, 20, 22, 24.
03/28	Practice	
03/30	Test 3	Sections F3.1-F3.4
04/04	S5.1	S5.1: 5.1.5-5.1.7, 5.1.9-5.1.11.
04/06	S5.2	S5.2: 5.2.7, 5.2.9(a-c), 5.2.13.
04/11	S5.3	S5.3: 5.3.8, 5.3.9(a-e).
04/12	S5.4	S5.4: 5.4.3 (fixed points only)
04/18	Practice	
04/20	Test 4	Sections S5.1-S5.4.
04/25	S6.1, S6.2	S6.1: 6.1.7, 6.1.9(a). S6.2: 6.2.3(a-c), 6.2.5(a-c).
04/27	S10.2	S10.2: 10.2.8(a), 10.2.10(a).
05/02	S10.3	S10.3: 10.3.4, 10.3.7
05/04	Practice	
05/16	Final Exam	10:30 am-1:15 pm