

MATH 604 001 16608 Geometry for Teachers -- Spring 2011

Time/Place: Thurs 7:20 pm - 10:00 pm Robinson Hall B Room 108

Text: College Geometry – A Discovery Approach, David C. Kay, 2nd edition, Addison Wesley Longman, Inc, 2001

Prerequisites: Open to in-service teachers of mathematics at middle or secondary level. Others may enroll with permission of instructor.

Instructor: Dr. Michael R. Gabel, Mathematical Sciences & New Century College (Enterprise Hall room 410)

E-Mail: mgabel@gmu.edu **Phones:** My Office in NCC: (703) 993 1484 NCC Main Office: (703) 993 1436
Mathematical Sciences Main Office: (703) 993 1460

Office Hours: Tuesday/Thursday: 1:00 to 1:20, Wednesday: 4:00 to 4:20 and by appointment.

Course Web Site: There is a Blackboard site: Go to <https://courses.gmu.edu> and log in to find it.

Course Description (catalogue): Covers standard topics from Euclidean geometry, and includes discussion of non-Euclidean geometries. Emphasizes informal and explorative approach to geometry, and makes use of geometry sketchpad. Other topics include geometric constructions, and role of proof in geometry.

Text Material Covered: Bits of chapter 1, ch 2, ch 3, ch 4, ch 5, bits of chapter 6, and bits of chapter 7.

Course Topics:

Axiomatics; proof strategies; incident, absolute, Euclidean and non-Euclidean geometries; fundamental properties of lines, triangles, circles, polygons, transformations, coordinates, area and volume.

Philosophy of the Course and Some Advice:

We will not be able to cover all the material set out in chapters 2, 3, 4 and 5, so I'll choose what I think are the most important ideas. So, we will cover some topics well and other less thoroughly or not even at all. The key objective is for you to be competent and confident in not so much every particular concept/theorem/proof but to gain the skills so that if you need to learn/teach something that you have not seen or cannot remember in geometry then you'll be able to do so. That said, you must keep up with the material (I suggest you read ahead) and do ALL the assigned homework. Don't miss any classes. Take good notes. **Your goal should be complete understanding of all the material.** To this end, do not hesitate to ask questions in class and to come to see me during my office hours. Devour your text. This class will be participatory. I'll expect you to be prepared to both ask and answer questions during the class. I'll not simply lecture for the whole period.

Geometer's Sketchpad - <http://www.dynamicgeometry.com/>

We will be using Geometer's Sketchpad in this course. In fact, this tool is integrated into our text (although it's not a logical requirement of the text). There are two purchase options.

Student

Single-Student Home-Use Non-Expiring License for Sketchpad 5

ISBN: 978-1-60440-095-3

Price: \$29.95

[Place Order](#)

Intended user must be an enrolled student in an educational institution to order. Each Student Home-Use license allows installation and use on up to three personal or family-owned computers, provided only one copy of Sketchpad is in use at one time. The license does not expire.

Single-Student Home-Use 1-Year License for Sketchpad 5

ISBN: 978-1-60440-097-7

Price: \$9.95

[Place Order](#)

Intended user must be an enrolled student in an educational institution to order. Each 1-Year Student Home-Use license allows installation and a year of use on up to three personal or family-owned computers, provided only one copy of Sketchpad is in use at one time.

Homework/Class notes: Homework will be assigned each day we meet and you should complete the assignment by the next class. You should keep a **loose-leaf** Class Notebook containing all the homework you do, together with your class notes (**very strong suggestion:** copy them over – that's how you'll learn the material), preferably **annotated**. I'll regularly collect a subset of this Notebook (that's why it's loose-leaf) and provide you feedback on your progress. This Notebook must be very neat and organized. Otherwise I'll not look at it. Your homework needs to be written as though you are teaching someone, not as though you are proving to me that you understand. That's a significant difference from what you may be used to doing when

you've done homework. Your homework section should contain just the best version of the solution to you have found - not all the ideas you tried which did not work. You should have two sections for class notes: one that is for copied over/annotated notes and the other for your original notes.

Final Exam: There is a comprehensive final exam. All or part of the final may be take-home. Any take-home part would be due at the end of the course's scheduled final exam period. The final is scheduled for Thursday, May 12, 2011 from 7:30 pm to 10:15 pm.

Exams/Quizzes: In addition to the final exam, there will be two exams. Each will be announced at, at least, the two proceeding class periods. We may have several quizzes. Quizzes will be announced at, at least, the preceding class period. All or part of the exams or quizzes may be take-home.

NOTE: If you feel you must miss an exam or a quiz, due to illness or other emergency, you *must* notify me in person or via telephone [e-mail is much better than nothing, but I really need to talk to you] *before* the exam or quiz in order to determine what (if any) make-up procedure will be used. **Do not simply show up in class after the exam or quiz has been given or is due and expect any consideration for a makeup.**

Grades: The final grade will be based on the exams, the quizzes, and the final exam. Performance on homework and, particularly, the final exam will be used to decide borderline grades. Your Final Course Grade will be determined as follows and, except in special circumstances, the grade ranges will be as follows:

Basis of Final Course Grade		[Probable] Grade Ranges			
Hour Exams and Quizzes	60%	A+	98-100	C+	77-79
Final Exam	40%	A	93-97	C	73-76
		A-	90-92	C-	70-72
		B+	87-89	D	60-69
		B	83-86	F	Less than 60
		B-	80-82		

HONOR CODE: GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. Except when explicitly stated to the contrary, all work is to be your own work. In particular, collaboration on homework is permitted. Exam and quiz work is to be your own. Evidence of violation of this policy constitutes grounds for referral to the University Honor Committee.

GMU EMAIL ACCOUNTS Students must use their Mason email accounts—either the existing “MEMO” system or anew “MASONLIVE” account to receive important University information, including messages related to this class. See <http://masonlive.gmu.edu> for more information.

OFFICE OF DISABILITY SERVICES If you are a student with a disability and you need academic accommodations, please seeme and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS: <http://ods.gmu.edu>

COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS): (703) 993-2380: <http://caps.gmu.edu>

UNIVERSITY POLICIES The University Catalog, <http://catalog.gmu.edu>, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at <http://universitypolicy.gmu.edu/>. All members of the university community are responsible for knowing and following established policies.

DROP DATE: (without a Dean's permission): Friday, Feb 25, 2011 at 5 pm.