

Historical Note:

After 1542, candidates for the Master of Arts degree at the University of Paris had to take an oath that they had read the first 6 books of the Elements

Pre-Requisite: Math 307

Time: MWF 11.10 – 12:00

Place: M 306

Instructor: Dr. Sriraman

Office: Math 301

Office Hours: MWF: 9.10-10.00

Phone & E-mail: 243-6714; sriramanb@mso.umt.edu

Texts: Thirteen Books of Euclid's Elements. Text is provided free as a pdf file.

What are The Elements?

Some Definitions, 5 Common notions and 5 Postulates to deduce an orderly chain of 467 theorems!

Other Material: Compass, protractor and straightedge. Geometer's Sketchpad.

Learning Outcomes: Upon completion of this course, a student will be able to:

- Construct mathematical proofs using the axioms of Euclidean geometry;
- Explore, conjecture, and prove mathematical ideas and theorems;
- Develop a facility with geometric theorems and proofs, through hands-on exploration;
- Explain different geometries and their development, through comparisons of their axioms, and the validity of basic theorems in different geometries.

To further the learning outcomes this is the course agenda:

Agenda: We will survey different geometries with a firm basis in axiomatic Euclidean geometry. The following topics will be covered

Geometry Explorations/Constructions using Sketchpad

Geometry and Numbers

Axiomatic Euclidean Geometry

Various Non-Euclidean Geometries such as

- Spherical Geometry
- Fractal Geometry [time permitting]

Important Dates:**Dates**

August 31, 2015

September 7, 2015

November 11, 2015

November 25, 2015

Description

Autumn classes begin

Labor Day Holiday – no classes, offices closed

Veteran's Day Holiday – no classes, offices closed

Student Travel Day – no classes

In class contributions

The only way to become proficient at proofs is to write and present a lot of them. Proof in the mathematics community is a “social” activity. One presents ideas and subjects them to scrutiny. Students will be assigned to groups of 2-3 and will read/present various proofs from the Books of the Elements. This may seem intimidating at first but with time, students will become comfortable and proficient. Students will also be accountable for the assigned readings and classroom participation.

3. Mid-terms and Final

Mid-terms 1 and 2 will be given approximately 1/3 and 2/3, respectively, of the way through the semester. The final will be cumulative in the traditional sense. It will be longer than the mid-term exams and will feature some questions relating directly to material taught earlier in the course. I will assign one mid-term (as a take home) over Moodle.

SOME “FREE” ADVICE

Factors that affect your grade

- Homework: There will be homework assigned on a regular basis in the form of Sketchpad Activities and readings from the Elements, which will be reviewed periodically in class. It is your prerogative to keep up with the material.
- Attendance: Students are expected to attend class, and although class attendance is NOT a component of the course grade, absences will impact your performance since you will miss the material covered in the lectures. Late assignments will not be accepted.
- Make-ups:
- THERE ARE NO MAKE-UPS regardless of the reason. Exam make-ups will ONLY be given under special and extenuating circumstances, such as a death in the family or illness, provided that: a note from the Health Service or doctor is furnished by the student AND permission is given by me prior to the exam. The final exam is compulsory and no exceptions can be made about the date/time at which it is held- this is decided a priori by the University Administration.

The Final Exam is scheduled for Thursday, December 17th, 8.00-10.00

Autumn 2015 Registration Deadlines

	August 31 – Sept. 9 @ 5pm	September 10 – Sept. 21 @ 5pm	September 22 – November 2 @ 5pm	November 3 – December 11 @ 5pm	December 12 & Beyond
Instructional Days	Day 1 – 7	Day 8 – 15	Day 16 – 45	Day 46 – Last Class Day Before Finals	After Last Regular Class Day
Add a Course	CyberBear	<i>Registration Override (paper or electronic) with instructor signature</i>	<i>Course Add/Change Form¹ with advisor² & instructor signatures + \$10.00 fee</i>	<i>Course Add/Change Form¹ with advisor² & instructor signatures + \$10.00 fee</i>	Only to fix registration errors (see reg. counter)
Drop a Course³ (see reg. counter to drop all/only course)	CyberBear	CyberBear	<i>Course Drop Form with advisor² & instructor signatures + \$10.00 fee (W on transcript)</i>	<i>Course Drop Form with advisor², instructor, & Dean’s signatures + \$10.00 fee (WP or WF on transcript)</i>	Not permitted
Switch Sections	CyberBear	<i>Registration Override (paper or electronic) with instructor signature to add; CyberBear to drop</i>	<i>Course Add/Change Form with both instructors’ signatures</i>	<i>Course Add/Change Form with both instructors’ signatures</i>	Only to fix registration errors (see reg. counter)
Credit/No Credit Grading Option (change to or from)	CyberBear	CyberBear	<i>Course Add/Change Form with advisor² & instructor signatures</i>	<i>Course Add/Change Form with advisor² & instructor signatures</i>	Not permitted
Adjust Variable Credit Load (variable credit courses only)	CyberBear	CyberBear	<i>Course Add/Change Form with advisor² & instructor signatures</i>	<i>Course Add/Change Form with advisor² & instructor signatures</i>	Not permitted
Audit (change to or from)	CyberBear (See reg. counter if not allowed online)	CyberBear (See reg. counter if not allowed online)	Not permitted	Not permitted	Not permitted

For assistance or questions about registration deadlines, please call the Office of the Registrar at (406)243-2995 or email registration@umontana.edu.

¹ Starting September 21st after 5pm, anyone not successfully registered for at least one credit or is re-registering after cancellation must instead [petition to late register](#).

² Advisor’s signature not required for Graduate & Post-Baccalaureate students.

³ Courses dropped after September 21st result in a “W”, “WP”, or “WF” on the student’s transcript, do not generate a refund, and may affect financial aid eligibility. If all courses are dropped, the Semester Withdrawal policy must be followed. **See Business Services for Semester Withdrawal [partial refund eligibility](#) by September 21.**