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CLASS TIMES / OFFICE HOURS.

MWF 10.10-11.00 in Roop 213 / MWF 9.25-9.55, MF 11.00-11.45* and W 3.20-4.00

REQUIRED TEXTS AND MATERIALS.

All three of *The Four Pillars of Geometry* by Stillwell, *Euclid's Elements* and *The Bones*, the latter two published by Green Lion Press are required. A compass and a straightedge are also required. There will also be a number of articles posted on the course website or handed out in class that are required reading.

COURSE OBJECTIVES AND TOPICS.

Math 475 intends to provide an insight into the *origin and development of Euclidean and other geometries including axiomatic systems, mathematical proof and special topics from incidence geometry*. We will spend the first six or so weeks covering various books of Euclid which will complement the first two chapters of the "Pillars" text. A discussion on impossibility will also take place here. This will be followed by a focus solely on topics from "Pillars": coordinate geometry(Ch 3-4), part of projective geometry(Ch 5 only) and Non-Euclidean geometry(Ch 7-8).

With the discussion of non-Euclidean geometry the course culminates with one of the monumental achievements of mathematics, akin to the creation to the calculus, the creation of a space that satisfies all the Euclidean axioms except the fifth postulate.

The course should be thought of as being similar to one in the humanities in so far as you are very much expected to *come to class with the reading being reflected upon and critiqued*.

CLASS PARTICIPATION + NOSE-POINTS.

Class will be run in a seminar-style where anyone can be called upon to go to the board and explain what they've read and the problems they have thought about since the previous day. Others can help and/or fill in gaps for the person at the board too.

When I tap my nose while looking at you, it means you get a "nose-point" for participation. A decent board solution will get feedback according to the ASSESSMENT RUBRIC below but will only be recorded as two nose-points. One nose-point is assigned if you say something that's true and relevant to the discussion. The most points you can get in any day is four.

Class participation carries the sizeable chunk of 25% of the total grade and will be added at the end of the semester.

Word to the wise (and not so-wise) Coming to class without working and thinking hard about the problems and without a first sincere reflection on the assigned reading is a recipe for being completely lost in class (in utilitarian terms, that means spending your semester in that hinterland between course grades D and F) and getting very little out of the course as a whole.

IN CLASS TESTS AND FINAL EXAM.

There will be short in-class tests every other Friday. These tests will last for 15 minutes. The questions will be taken from the homework and from points raised in class discussion – since these are all topics raised before it means that you will have less time than a standard test.

The first test will be on Friday, 9/5 with an additional test on Friday, 11/21, the Friday before the Thanksgiving break. There are no makeups but there are especially no makeups for the pre-Thanksgiving test. **The in class tests are worth a total of 45% of the total grade.**

The final exam will be an individual oral exam held during the last week of class and finals week. A list of questions will be provided beforehand. The oral exam will last 30 minutes. **The oral final exam is worth a total of 30% of the total grade.**

There is a possibility of a trial group oral exam in the last week of classes that would be a practice run for the oral final exam during finals week. If this runs, this group oral test will carry 5 out of the 45 % for the in-class test but only if it improves that score on the in-class test.

ASSESSMENT RUBRIC

As already stated above 25% of the grade is for class participation, 45% for the fortnightly in-class tests and 30% for the final oral exam. I have the freedom (but not the obligation) to raise a grade if the final oral exam is especially strong.

Every in class tests will contain questions. Questions will be graded on an **A/B/C/D** scale.

A: Excellent and complete solution/argument with the smallest of gaps allowed.

B: A decent, close to complete argument that nonetheless would need one major hint to complete or two minor ones. Questions acheiveing this grade should be re-read carefully with the holes filled in.

C: Proposed argument contains something that is true and relevant. Can also be given to arguments that have serious errors and are not easily fixed.

D: Argument might contain a thread of something that is true and relevant, or be little more than the student's name on the page and/or scribbles.

How to get a sense of your grade from the in-class tests? Almost all questions carry equal weight. Occasionally, some test questions might be weighted more. For example, a challenging and/or necessarily long question might be weight double. To get a sense of your overall grade give yourself 5 for every A, 4 for every B, 3 for every C, 2 for every D, 0 for every missed/absent assignment. Compute your average, being sure to count tests and class days missed. Try to account too for the participation points.

If your cumulative average is 4.5 or above then you are guaranteed an A, equal or above 3.6 but less than 4.5 then you are guaranteed a B, equal or above 2.7 but less than 3.6 is guaranteed a C, and a D is between 2.0 and 2.6. Plus/minus grades will be assigned accordingly.

FIRST WEEK ATTENDANCE POLICY

At the instructor's discretion, any student registered for a class in the Department of Mathematics and Statistics who does not attend at least one of the first two scheduled meetings of the class (or does not attend the first scheduled meeting of a class that meets once a week) **MAY** be administratively dropped from the class. Students will be notified by e-mail if they will be dropped. Students who fail to attend should not assume they will be administratively dropped by their instructor; it is the students responsibility to drop the course on their own or they will receive a grade at the end of the semester. All students are responsible for verifying the accuracy of their schedules and changes made in their schedules.

GENERAL JMU POLICY

Go to www.jmu.edu/syllabus for university wide policies on Attendance, Academic Honesty and Safe-Assign, Adding/Dropping Courses, Disability Accommodations, Inclement Weather and Religious Accommodations.