MATH 3312 College Geometry
Department of Mathematics and Statistics
Spring 2016

A. COURSE INFORMATION

Course number/section: CRN 73815 (lecture) MATH 3312.001
CRN 73817 (laboratory) MATH 3312.201
Class meeting time: Tuesday (lecture) 3:30pm-5:20pm
Thursday (laboratory) 3:30pm-5:20pm
Class location: Tuesday CI 128
Thursday CI 223
Course Website: TAMU-CC Blackboard https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Valentina Postelnicu
Office location: CI-357
Office hours: Tuesday & Thursday 2:00pm-3:15pm
Wednesday 11:30am-2:00pm, and by appointment
Telephone: (361) 825-3023 (office)
(480) 220-4961 (cell, for text and emergency only)
e-mail: Valentina.Postelnicu@tamucc.edu
Appointments: Please email me, and include information about your availability during the week you would like to meet with me.

C. COURSE DESCRIPTION

A careful study of the foundations of Euclidean geometry by synthetic methods with an introduction to non-Euclidean geometries. An introduction to transformational geometry.

D. PREREQUISITES AND COREQUISITES

Prerequisites: MATH 2413 and junior standing; MATH 3311 recommended.
Corequisites: Requires registration in lab.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required textbooks

Other References
- The First Six Books of the Elements of Euclid by John Casey and Euclid can be
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Demonstrate knowledge of the roles of definitions, axioms, proofs, models, and examples in geometry.
2. Apply and prove theorems, solve problems about triangles, quadrilaterals, and circles.
3. Demonstrate knowledge of the transformations of the plane and their compositions.
4. Discriminate between Euclidean and non-Euclidean geometries, based on the parallel postulate.
5. Use Geometer’s Sketchpad (GSP) to explore modeling various geometric objects and their properties.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

The course will be a combination of lectures, whole-class discussions, and many individual investigations of geometry. The heart of the instructional method for this course is student activity. Students will be challenged to solve many problems from the text, and communicate their solutions. Students will be required to give individual or group presentations. If needed, there will be alternative assignments in lieu of presentations. All participants are expected to engage in group and whole class activities by contributing knowledge and thoughtful evaluation of others’ contributions.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Grades will be based on the percentage of total points the student earns. There will be points given on the following:

accessed from http://www.gutenberg.org/.
Other references may be provided by instructor, as needed. It will be the students’ responsibility to find and access the recommended works.

Supplies
Regular access to high speed internet and Microsoft Office applications (e.g., Word, PowerPoint).
Coming to class prepared and actively participating in class activities and Blackboard Discussion Forum, learning each lesson and doing the homework on time will contribute to your success in this class. Quizzes will be unannounced, and contain 1-3 problems from the current topics. There will be 7-12 quizzes, two of them with the lowest grades will be dropped. Specific directions for course activities/assignments (e.g., content, format, submission, deadlines, feedback) will be announced in class and/or posted on TAMUCC-Blackboard, at https://bb9.tamucc.edu/. The papers and presentations (power point and oral presentations) will be graded both by the instructor and two peers, using the following **Grading Rubric**:

<table>
<thead>
<tr>
<th>Category</th>
<th>4 Exemplary</th>
<th>3 Good</th>
<th>2 Satisfactory</th>
<th>1 Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject knowledge</strong> 50%</td>
<td>Demonstrates subject knowledge throughout the entire assignment.</td>
<td>Demonstrates subject knowledge most of the time.</td>
<td>Demonstrates some subject knowledge.</td>
<td>Subject knowledge is not demonstrated.</td>
</tr>
<tr>
<td></td>
<td>All information is clear, appropriate, and accurate.</td>
<td>Most of the information is clear, appropriate, and accurate.</td>
<td>Some information is clear, appropriate, and accurate.</td>
<td>Information is confusing, insufficient, inappropriate, and inaccurate.</td>
</tr>
<tr>
<td></td>
<td>The solutions to all problems (if any) are correct.</td>
<td>Most of the solutions to problems (if any) are correct, some solutions have minor errors.</td>
<td>Some solutions to problems (if any) are correct.</td>
<td>Most of the problems (if any) have incorrect solutions.</td>
</tr>
<tr>
<td><strong>Organization</strong> 30%</td>
<td>The sequence of information/proof is logical and well organized.</td>
<td>The sequence of information/proof is well organized.</td>
<td>Some parts of the sequence of information/proof is organized.</td>
<td>The sequence of information/proof is disorganized.</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>Excellent written communication of ideas/ excellent integration of spoken and visual presentation.</td>
<td>Good written communication of ideas, most of the time/good integration of spoken and visual presentation, most</td>
<td>Some parts are well written, and ideas are communicated effectively / some parts of the presentation are coordinated orally</td>
<td>The written paper is hard to follow, ideas are not communicated effectively / the presentation is hard to follow, the</td>
</tr>
</tbody>
</table>
Final grades will be assigned according to the following table:

**Percentage Grade**

- ≥90.0%  A
- ≥80.0%  B
- ≥70.0%  C
- ≥60.0%  D
- Below 60%  F

### I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
<th>Chapters/Sections</th>
<th>ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/21</td>
<td>Introduction to Geometry and Geometer’s Sketchpad</td>
<td></td>
<td>Discussion Forum (Topics: Syllabus, Introductions)</td>
</tr>
<tr>
<td>1/26, 1/28</td>
<td>Definitions, Axiomatics and Proofs, Examples and Models</td>
<td>Chapter 1 Exploring Geometry</td>
<td>Discussion Forum (Topic: Chapter 1 Exploring Geometry)</td>
</tr>
<tr>
<td>2/9, 2/11</td>
<td>Triangle Congruence Theorems</td>
<td>Chapter 3 Foundations of Geometry 2</td>
<td>Discussion Forum (Topic: Chapter 3 Foundations of Geometry 2)</td>
</tr>
<tr>
<td>2/16, 2/18</td>
<td>More on Triangles and Quadrilaterals</td>
<td>Chapter 3 Foundations of Geometry 2</td>
<td>Discussion Forum (Topic: Chapter 3 Foundations of Geometry 2)</td>
</tr>
<tr>
<td>2/23, 2/25</td>
<td>Midterm Review</td>
<td>Chapters 1-2 and Chapter 3</td>
<td>Discussion Forum (Topic: Midterm Review)</td>
</tr>
<tr>
<td>3/1, 3/3</td>
<td><strong>Midterm Exam</strong></td>
<td>Chapters 1-2 and Chapter 3</td>
<td><strong>Midterm March 3rd</strong></td>
</tr>
<tr>
<td>3/8, 3/10</td>
<td>Circles</td>
<td>Chapter 3 Foundations of Geometry 2</td>
<td>Discussion Forum (Topics: Chapter 3 Foundations of Geometry 2, Flatland Part 2)</td>
</tr>
<tr>
<td>Spring Break</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/14-3/18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/22, 3/24</td>
<td>Parallelograms and Trapezoids</td>
<td>Chapter 4 Euclidean Geometry</td>
<td>Discussion Forum (Topics: Chapter 4 Euclidean Geometry, Flatland Part 2) Flattland paper due</td>
</tr>
<tr>
<td>3/29, 3/81</td>
<td>Similar Triangles, Pythagorean Theorem, Trigonometry</td>
<td>Chapter 4 Euclidean Geometry</td>
<td>Discussion Forum (Topic: Chapter 4 Euclidean Geometry)</td>
</tr>
<tr>
<td>4/5, 4/7</td>
<td>Transformations</td>
<td>Chapter 5 Transformations</td>
<td>Discussion Forum (Topic: Chapter 5 Transformations)</td>
</tr>
</tbody>
</table>
Note: Changes in this course schedule may be necessary and will be announced to the class by the instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Attendance/Tardiness
You are expected to attend every class session, and arrive on time. There is no make up for class activities, you need to be present to participate. All the absences will be considered “unexcused” unless you have an exceptional situation (e.g., documented illness, family situation), and you email the instructor about it.

Late Work and Make-up Exams
Late assignments will not be accepted, unless exceptional circumstances prevent you from completing them. Extension of deadlines will be at the instructor’s discretion. Late assignments may result in partial or total loss of credit. There are NO make-ups for quizzes, exams, or in-class activities.

Extra Credit
There may be extra credit offered for this course. This possibility will be announced and discussed in class.

Cell Phone Use
Please silence phones before coming to class. If you need to take a call, please go outside the classroom.

Laptop Use
In general, you cannot use your laptops during class activities or exams. For special circumstances (e.g., presentations), or special needs, please talk with the instructor.

Food in Class
Refrain from bringing food to class. For special needs or occasions, please talk with the instructor.
Missed Exam
Exceptional circumstances (e.g., documented illness, family situations) may be considered at the instructor’s discretion.

Participation
You are expected to come to class prepared every time, and participate in class activities.

K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop
process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.
L. OTHER INFORMATION

- Academic Advising
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.