Math 213

CENTRAL CONNECTICUT STATE UNIVERSITY
Department of Mathematical Sciences
Fall 2021

PLEASE READ THIS SYLLABUS CAREFULLY YOU ARE RESPONSIBLE FOR ITS CONTENT

I. Title: Structure of Mathematics II: Probability and Geometry, Math 213, 3 credits

II. Course Details:
Section: 213-01
Meeting Times: Tuesday, Thursday 10:50am to 12:05pm
Class Meeting Room: EDB 209
Office Hours: Ebenezer Bassett Hall
Tuesdays/Thursdays 12:05 to 2:05pm, Wednesdays noon to 1pm
Other times by appointment
Instructor: Dr. Maria Mitchell
Email: mitchellm@ccsu.edu preferred

Optional textbook that you may have used in MATH 113:
Mathematics for Elementary Teachers with Activities
by Sybilla Beckmann

- Copyright year: 2018

Supplemental Resources: *NCTM web site: http://www.nctm.org

Materials: Three-ring binder dedicated to this course. Include blank lined paper in the binder. All in-class handouts, class notes, readings and notes on readings, and problem sets and solutions will be kept in this binder.

IV. Calculators and Technology: All students will be expected to have an email account.

Technology will be an important component of classroom instruction and learning.

Students will use calculators and computers, e-mail, mail groups, and the Internet will be used to
Math 213

supplement course content and to research elementary education topics.

V. Prerequisite: Math 113, C- or higher

VI. Students for Whom Course Is Intended:

Students planning to be certified in Elementary, or Special Education

VII. Course Description: Second course of a two-course sequence (Math 113/213). Topics covered include: Probability and Statistics, Geometry as Shape, Geometry as Transforming Shapes, and Geometry as Measurement.

VIII. Basic Goals:

To develop statistics and geometry and measurements concepts through a problem solving approach, incorporating an extensive use of manipulatives

To encourage mathematical discourse through cooperative learning and written communication

IX. Course Requirements:

Attend and participate in class regularly.

Complete lesson handouts and homework assignments and make corrections as needed.

Take assessments on the dates scheduled.

Work with your classmates in a respectful, cooperative, and professional manner.

X. Class Participation and Attendance Policy:

Active classroom participation is an integral component of this course. It includes preparing for each class by completing all readings and assignments, engaging productively in classroom work and discussions, and taking an active role in reflecting on your own and others’ mathematical understanding.

Your success in this course depends on your level of interaction and participation throughout the term. Most of class time is spent sharing ideas, solution strategies, insights and questions. During class, your instructor will assess both your preparation for class (e.g. whether you have completed your assignments) and the quality of your participation in course activities.

Attendance grades are determined by what percent of the classes that you attended during the semester. This policy applies to all class meetings.

In the unlikely event that you are unable to attend a class session, please email me prior to class. It is the student’s responsibility to obtain assignments from other classmates in the event of an absence.

XI. University Policies:
Student Disability Services Policy

Central Connecticut State University (CCSU) complies with the letter and spirit of the Federal law—specifically the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act. CCSU Student Disability Services (SDS) staff approves and coordinates reasonable accommodations that provide equal access and educational equity to undergraduates and graduate students who have a documented disability. Through an individual interactive process, SDS arranges reasonable accommodations, auxiliary aids, and modifications to the learning environment and/or campus based on received documentation and functional limitations of the student.

While it is advisable that students arrange for accommodations prior to the start of the semester, a request and approval for accommodations can be made at any time during the semester. SDS notifies faculty of approved accommodations through an emailed accommodation letter, and students are copied and advised to discuss class accommodation arrangements with their instructors. SDS provides some auxiliary aids and a proctored testing center for accommodated exams. In some cases, SDS staff may contact and consult with faculty to discuss essential requirements of a course or program of study. SDS encourages faculty to also call when questions arise about accommodation arrangements.

In order to make students aware of Student Disability Services, we encourage faculty to include the following suggested syllabus statement and to bring attention to the statement with a general announcement at the beginning of the semester.

SDS appreciates your cooperation and collaboration in ensuring accessibility throughout our campus. Please contact our office if you have any questions or concerns.

Sincerely,
SDS Staff

Statement on Discrimination and Harassment

Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex, (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns about should contact the Office of Diversity and Equity (ODE) at 860-832-1652, Student Affairs at 860-832-1601, or his/her faculty member. The ODE is located on the main floor of Davidson Hall, room 102.

Academic Integrity

Academic Integrity is the responsibility a student assumes for honestly representing all academic work. Cheating or plagiarism on any test, quiz, final exam, or assignment will result in a grade of zero. Cheating or plagiarism is defined as turning in someone else’s work as your own. It is not cheating to work with others. Sharing the learning and teaching is an important part of the course.

You are responsible for understanding and abiding by the University’s policy on academic integrity. Information on the policy may be found at http://www.ccsu.edu/AcademicIntegrity/. This policy is rigorously enforced by the Department of Mathematical Sciences.
Math 213

Communication Policy
Communication and updates regarding the course will be sent via email. Please note, I use Blackboard Learn to email the class.

Email Policy
Please make sure you consult the course outline/syllabus, other handouts, and/or Blackboard before submitting inquiries by email.

Attendance Policy
I expect that you will be prepared for each class by completing all assignments, engage productively in classroom work and discussions, and take an active role in reflecting on your own and others’ mathematical understanding.

XII. Evaluation: The grade for the course will be determined in the following manner:

Grading: Class Lesson Work and Homework 30%
Quizzes 20%
Projects/TESTS: 30%
Final Exam: 20%

Evaluation Categories, Detailed Explanation:
Course Assignments:
1. Homework (30%)
   a) Weekly Lesson Handouts will be posted on the BlackBoard site and will be submitted on BB for a grade. Weekly Lessons will be done in groups. Homework handouts are also required to be submitted each week for a grade.

   Within each weekly lesson, I will also include questions called “Summarize & Connect.” These are broader, conceptual questions that address the key mathematical ideas within a lesson. The purpose of these questions is for you to reflect on and articulate your thinking regarding the key mathematical ideas that we examine during class. Typically, responses to these questions are longer and require more thought and work than responses to other homework problems.

   Submitted problems will be graded primarily on your ability to provide thorough and complete explanations of your solutions. Solutions without adequate explanations and/or work shown will not receive any credit. Your lowest homework grade of the semester will be dropped.

   b) Readings will be assigned throughout the semester. You must complete all readings by their due dates. For each reading, write the following:
      a. 2-3 sentences summarizing the main points of the article;
      b. 1 question that arose from the reading that you want to discuss or learn more about; and,
      c. 1 comment about something in the reading that you found interesting.

Mathematics Topic Analysis. I will provide an article on a specific mathematical topic that we have studied in the course. Provide a summary of the article, describe the key mathematical ideas in the article, identify any CCSS-M standards relevant to the topic, and explain how the article and our work in class impacts your own understanding of this mathematical topic.
Math 213

2. **Projects (20%).** Four projects will be due throughout the semester to help make connections between mathematical content and the K-6 classroom. A brief description of each project is below. Details will be provided separately.

   a) *Explaining Mathematics: Tessellation Project, Dream Room Project, Statistics Project* Videotape yourself at a whiteboard presenting your Project to the class. Your presentation must focus on the rubric provided.

3. **Assessments (30%).** There will be several tests (20%) and one final exam (10%). Both are cumulative. Questions on each assessment will cover material from your readings, homework assignments, classwork, discussions and activities.

**Topic & Assignment Schedule (TENTATIVE)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignments &amp; Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thur, Aug 26</td>
<td>Course Introduction, Expectations, Review of Syllabus</td>
<td>Attributes Lesson Handout</td>
</tr>
<tr>
<td>Tuesday, Aug 31</td>
<td>Attributes</td>
<td>Attributes Homework due</td>
</tr>
<tr>
<td>Thursday, Sept 2</td>
<td>Angles</td>
<td>Angles Lesson Handout</td>
</tr>
<tr>
<td>Sept 7</td>
<td>Angles Continued</td>
<td>Angles Homework due Article: How Wedge You Teach the Unit-Angle Concept? (Millsaps, 2012)</td>
</tr>
<tr>
<td>Sept 9</td>
<td>Parallel and Intersecting Lines</td>
<td>Parallel and Intersecting Lines Lesson Handout</td>
</tr>
<tr>
<td>Sept 14</td>
<td>Parallel and Intersecting Lines</td>
<td>Parallel and Intersecting Lines Homework due</td>
</tr>
<tr>
<td>Sept 16</td>
<td>Polygons</td>
<td>Polygons Lesson Handout Due</td>
</tr>
<tr>
<td>Sep 21</td>
<td>Polygons (cont’d) Classifying Triangles</td>
<td>• Polygons Homework Due</td>
</tr>
<tr>
<td>Sept 23</td>
<td>Constructing Triangles</td>
<td>Constructing Triangles Lesson Handout</td>
</tr>
<tr>
<td>Sept 28</td>
<td>Constructing Triangles</td>
<td>Constructing Triangles Homework due</td>
</tr>
<tr>
<td>Sept 30</td>
<td>Classifying Quadrilaterals</td>
<td>Classifying Quadrilaterals Lesson Handout</td>
</tr>
<tr>
<td>Oct 5</td>
<td>Classifying Quadrilaterals</td>
<td>Classifying Quadrilaterals Homework due</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Handout/Assignment</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>Oct 7</td>
<td>Interior Angles of Polygons</td>
<td>Interior Angles of Polygons Lesson Handout</td>
</tr>
<tr>
<td>Oct 12</td>
<td>Interior Angles of Polygons</td>
<td>Interior Angles of Polygons Homework due</td>
</tr>
<tr>
<td>Oct 14</td>
<td>Tessellations</td>
<td>Tessellations Lesson Handout</td>
</tr>
<tr>
<td>Oct 19</td>
<td>Tessellations</td>
<td>Tessellations Homework Due</td>
</tr>
<tr>
<td>Oct 21</td>
<td>Tessellation Project Assigned</td>
<td></td>
</tr>
<tr>
<td>Oct 26</td>
<td>Tessellation Project</td>
<td></td>
</tr>
<tr>
<td>Oct 28</td>
<td>Area Concepts</td>
<td>Area Concepts Lesson Handout</td>
</tr>
<tr>
<td>Nov 2</td>
<td>Area Concepts</td>
<td>Area Concepts Homework</td>
</tr>
<tr>
<td>Nov 4</td>
<td>Area and Perimeter</td>
<td>Area and Perimeter Lesson Handout</td>
</tr>
<tr>
<td>Nov 9</td>
<td>Area and Perimeter</td>
<td>Area and Perimeter Homework due</td>
</tr>
<tr>
<td>Nov 11</td>
<td>Dream Room Project Assigned</td>
<td></td>
</tr>
<tr>
<td>Nov 16</td>
<td>Dream Room Project</td>
<td></td>
</tr>
<tr>
<td>Nov 18</td>
<td>Data Analysis Collecting and Analyzing Data Class Project Assigned</td>
<td></td>
</tr>
<tr>
<td>Nov 23</td>
<td>Measures of Center and Spread (Mis)Representing Data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Happy Thanksgiving</td>
<td></td>
</tr>
<tr>
<td>Nov 30</td>
<td>Box and whiskers, normal distribution, weighted averages</td>
<td></td>
</tr>
<tr>
<td>Dec 2</td>
<td>Standard Deviation and Variance Class Project Due</td>
<td></td>
</tr>
<tr>
<td>Dec 7</td>
<td>Last class Meeting day</td>
<td>Dream Room Presentations and Project Due</td>
</tr>
<tr>
<td>Dec 9</td>
<td>Cumulative Final Exam and/or Project Reflection DUE10:30 to 12:30PM</td>
<td></td>
</tr>
</tbody>
</table>