SMTE 1351 Fundamentals of Mathematics II Department of Mathematics and Statistics
Spring 2020

A. COURSE INFORMATION

Course number/section: CRN 20813, SMTE 1351.002

Class meeting time: Tuesday, Thursday 11:00AM-12:15AM
Class location: CS-107, and online components Blended 65%
(unless specified otherwise by Course Schedule)
Course Website: TAMU-CC Blackboard https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. Celil Ekici
Office location: CI-312
Office hours: Monday, Wednesday, Thursday 9:00AM-11:00AM
Telephone: (361) 825-2819 (office)
E-mail: celil.ekici@tamucc.edu

Appointments: Please email me, and include information about your availability during the week you would like to meet with me. You can also meet by an appointment or online via Webex.

COURSE DESCRIPTION

Catalog Course Description The conceptual framework for understanding and applying properties, models, and operations related to various data systems in problem solving settings.

Extended Course Description This is a required mathematics content course addressed to future teachers.

D. PREREQUISITES AND COREQUISITES

Prerequisites: SMTE 1350 Fundamentals of Math I. Corequisites: None.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbooks
MyLabsPlus Access is required for this class. The hard copy of the textbook is not required (MyLabsPlus will give you access to a digital copy of the textbook).

We recommend the same textbook used for SMTE 1350 Mathematical Reasoning for Elementary Teachers by Long, De Temple, and Millman 7th edition with MyMathLab Access, Custom Package for Texas A&M University Corpus Christi, Pearson Custom Publishing. Students will be required to have an access code for MyLabsPlus (needs to be purchased from our campus bookstore only if it is the first time students use it, otherwise the old access credentials used for SMTE 1350 should work – if associated with Long’s 7th edition).

The Website for MyLabsPlus is www.tamucc.mylabsplus.com. Students will use their Island ID as their username and either use a previous password or ask for a new one. The MyLabsPlus help line is 1 888-883-1299.

The following online framework will be used as a supplemental resource:

Blackboard as Learning Management System: You will be supplied materials in Blackboard for three chapters from the textbook:

**Proportional Reasoning** with Decimals and Reals (chapter 7),

**Statistics** (Chapter 13),

**Probability** (Chapter 14) to review before and after class sessions. You are expected to follow, review and complete the online assignments.

**MyLabsPlus:** Online homework assignments will be posted with due dates in MyLabsPlus (amounting to 20 percent of your grade). You are expected to follow and maintain your progress throughout the semester.

Optional Textbooks or Other References We will incorporate resources from NCSU Friday Institute’s On Teaching Statistics Through Inferential Reasoning and Statistics tasks design and analysis. Please visit https://place.fi.ncsu.edu/ for online resources and professional development support

Texas Essential Knowledge and Skills for Mathematics [http://ritter.tea.state.tx.us/rules/tac/chapter111](http://ritter.tea.state.tx.us/rules/tac/chapter111)

**Supplies:** A graphical calculator TI 83, TI 84 or TI 84 Plus, regular access to high speed internet and MS Office applications (e.g., Word, Power Point, Excel). Softwares such as GeoGebra available from geogebra.org for experimentation.

**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. Use, model, justify and explain relationships, operations and algorithms involving rational numbers, ratios, proportions and percent; as well as compare and contrast proportional and non-proportional relationships.

2. Create, use and explain a variety of appropriate data displays (tables, charts, graphs) and basic descriptive statistics that summarize data sets; compare and contrast the various representations.

3. Create, use and evaluate simulations and models that explore simple and compound experimental probability events. Use, justify and explain appropriate counting techniques, including permutations and combinations, to determine theoretical probabilities. Discuss the similarities and differences between experimental and theoretical probabilities.

4. Identify correct and incorrect mathematical reasoning, and analyze error patterns present in EC-6 student work, and suggest remediation for these errors.

5. Write, and solve mathematical problems that involve proportional, probabilistic, and statistical reasoning, as well as basic ideas of mathematical modeling, in a variety of mathematical or non-mathematical settings.

6. Communicate mathematical ideas appropriately through multiple representations, including oral and written words, concrete manipulative materials and pictures, graphs, tables, and symbols.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
This is a blended course with up to 50 percent online components, recommended only for highly disciplined students who can commit to a rigorous schedule of individual study. The in-class instructional activities are designed under the assumption that students will have completed their online assignments before coming to class. Those in-class instructional activities will build upon the mathematical content of the online assignments. Students will be required to justify their solutions and critique their peers’ solutions to problems publically (i.e., in class, in front of their peers), give individual or group presentations, and participate in whole-class discussions and activities.

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:

<table>
<thead>
<tr>
<th>ACTIVITY/ASSIGNMENT</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Homework (MyLabsPlus)</td>
<td>20%</td>
</tr>
<tr>
<td>Assignments and Quizzes (online, face-to-face, in class)</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam (face-to-face)</td>
<td>15%</td>
</tr>
</tbody>
</table>
Active Participation & Attendance: Points will be given for active participation in the group work, leading, presenting discussions and supporting each others’ learning as future teachers 15%

Term Project (face-to-face): Proposal, Sample Group Activity, Reflections as prospective teachers on their work and others. 15%

Final Exam (face-to-face) 20%

The Online Homework, Quizzes and the Exam will be graded based on the number of correct answers. 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 Final Project and some of the classroom activities requiring a presentation will be graded using the following rubric:

**Category** 4 Exemplary 3 Good 2 Satisfactory 1 Unsatisfactory

**Subject knowledge 50%**

4 Demonstrates subject knowledge throughout the entire assignment. All information is clear, appropriate, and accurate. The solutions to all problems are correct.

3 Demonstrates subject knowledge most of the time. Most of the information is clear, appropriate, and accurate. Most of the solutions to problems are correct, some solutions have minor errors.

2 Demonstrates some subject knowledge. Some information is clear, appropriate, and accurate. Some solutions to problems are correct.

1 Subject knowledge is not demonstrated. Information is confusing, insufficient, inappropriate, and inaccurate. Most of the problems have incorrect solutions.

**Organization 30%**

4 The sequence of information/proof is logical and well organized.

3 The sequence of information/proof is well organized.

2 Some parts of the sequence of information/proof is organized.

1 The sequence of information/proof is disorganized.

**Communication (written paper, and/or ppt and oral presentation) 20%**

4 Excellent written communication of ideas/ excellent integration of spoken and visual presentation.

3 Good written communication of ideas, most of the time/good integration of spoken and visual presentation, most of the time.

2 Some parts are well written, and ideas are communicated effectively / some parts of the presentation are coordinated orally and visually.

1 The written paper is hard to follow, ideas are not communicated effectively / the presentation is hard to follow, the spoken and visual presentation are not integrated.

Final grades will be assigned according to the following table:

**Percentage Grade** If Grade ≥90.0% - A; if Grade ≥80.0% - B; if Grade ≥70.0% - C; if Grade ≥60.0% - D; if Grade, Below 60% F.

---

I. COURSE CONTENT/SCHEDULE

**Weeks**

- **Topics Chapter Assignments**
  - **Week 1-2**
    - 7.1 Decimals and Real Numbers Chapter 7.1
    - Online Homework 7.1 (MyLabsPlus & Discussion Forum)
    - 7.2 Computations with Decimals Chapter 7.2
    - Online Homework 7.2 (MyLabsPlus & Discussion Forum)
    - 7.3 Proportional Reasoning Chapter 7.3
    - Online Homework 7.3 (MyLabsPlus & Discussion Forum)
    - Online Homework 7.4 (MyLabsPlus & Discussion Forum)
  - **Week 3**
    - 7.4 Percent Chapter 7 Online Review Chapter 7 (MyLabsPlus)
  - **Week 4 Midterm Exam Chapter 7 Midterm**
  - **Week 4**
    - • Statistics vs mathematics? (Materials on Blackboard)
    - • Statistical Investigation Cycle in a Classroom
• Teaching Statistics in the Mathematics Curriculum
13.1 Organizing and Representing Data
• Supports for Learning to Do Statistical Investigations
• A guiding Framework for Teaching Statistics Chapter 13 Statistics
Read and Watch Materials are on Blackboard
Read & Watch Quiz Online
Homework 13.1, 13.2 (MyLabsPlus &Discussion Forum)
Reading and Reflections on Framework
Week 5-6 • Tasks as Opportunities for Statistical Learning
• Investigating Older Roller Coasters in the US 13.2 Measuring the Center and Variation of Data
• Discuss Learning statistics through investigations with real data
• Compare and Contrast Online Data Analysis Tools Statistics
Learn from Practice by reading and watching
Learning by Doing Statistical Investigations: Group discussions
Develop Fluency with Technology for Statistical Data Analysis: Homework with Reflections and Artifacts
Week 7 • Expert Teacher Interview on Tools & Resources
• Teaching Statistics Using Multiple Technologies 13.3 Statistical Inference
• Investigating More Roller Coasters
Read and Watch (Blackboard)
Chapter 13 Statistics Online Homework 13.3 (MyLabsPlus &Discussion Forum)
Engage with Data - HW
• Examining Students' Work on Statistical Tasks
• Supporting Statistical Discourse with the Roller Coaster Task
• Analyze Statistical Tasks and Discuss
Week 8 • Analysis of Statistical Tasks and Discuss
Review Chapter 13 Synthesize and apply
• Starting Projects Project Based Learning Overview Online Review Chapter 13 (MyLabsPlus)
Week 9 14.1 Experimental Probability, Chapter 14
Online Homework 14.1, 14.2 (MyLabsPlus &Discussion Forum)
Week 10 14.2 Principles of Counting Chapter 14
Online Homework 14.3 (MyLabsPlus &Discussion Forum)
Week 11 14.3 Permutations and Combinations Chapter 14
Online Homework 14.4(MyLabsPlus &Discussion Forum)
Week 12 14.4 Theoretical Probability Online Review Chapter 14
(MyLabsPlus)
Week 13 Project Presentations/ Reports & Reflections
Week 14 Final Review Chapters 7, 13, 14
• Please note that 65 percent of the class work will be online

Important Days from Academic Calendar
January 20, Monday Martin Luther King, Jr. Holiday – Campus Closed
January 28, Tuesday Last day to register or add a class
March 4-25, Wednesday-Wednesday Mid-Term Grading
March 9-13, Monday-Friday Spring Break
March 12-13, Thursday-Friday Campus Closed
April 10, Friday Last day to drop a class
April 16, Thursday Last day to apply for Spring graduation
May 6, Wednesday Last day of classes
May 7, Thursday Reading Day
May 8, Friday; Final examinations
May 11-14, Monday-Thursday
May 15-18, Friday-Monday Grading days
May 16, Saturday Spring Commencement
May 19, Tuesday Spring grades due
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. Two of the lowest grades for quizzes will be dropped (i.e., will not count toward the overall grade).

Extra Credit There will be no extra credit for this course.

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)** I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. **Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course.** Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. 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.