A. COURSE INFORMATION

Course number/section: CRN 71989, SMTE 1350.003
Class meeting time: TR 5:30 – 6:45 PM
Class location: CS-107
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Ms. Pragati Bannerjee
Office location: CI 308
Office hours: Tuesday & Thursday, 5:00- 5:30 PM
E-mail: pragati.bannerjee@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

Catalog Course Description
3 sem. hrs. (3:0) The conceptual framework for understanding and applying properties, models, and operations related to various number systems in problem solving settings. Prerequisite: MATH 1314. Fall, Spring, Summer. TCCNS Equivalent: MATH 1350

Extended Course Description
This course provides the conceptual framework for understanding and applying properties, models and operations of number systems. Related topics are studied in problem solving settings. Most students in this course have learned mathematics through a rule-based, abstract instructional program. This course is designed to emphasize in-depth basic understandings of number systems and arithmetic patterns, which are core ideas in the elementary mathematics curriculum. Communicating concepts, processes or solutions effectively, in oral and written forms, will be emphasized. In this course, you will explore what it means to learn mathematics from a student-centered perspective - you will be asked to think, problem solve, conjecture, reason, and explore mathematically. Through these processes you will construct and refine your mathematical knowledge for teaching (MKT).

D. PREREQUISITES AND COREQUISITES

Prerequisites
MATH 1314: College Algebra or equivalent, or placement beyond College Algebra on the departmental placement test.

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

REQUIRED: Mathematical Reasoning for Elementary Teachers: Long, Temple, Millman, 7th Edition and MyLabsPlus access. The MyLabsPlus access code can be purchased ONLY from our campus bookstore with the textbook or log on to www.tamucc.mylabsplus.com and purchase it online, and it will give you access to the e-book. Enter your username (your “Island ID”, the same you use for logging into your islander email and ask
for a password reset. The technical support line is 1-888-883-1299. SMTE 1350 will cover chapters 1-6 of the
textbook.

**OPTIONAL:** The hard copy of the text book “Mathematical Reasoning for Elementary Teachers, Edition 7” is
optional.

**SUPPLIES:** Graphing calculator. Regular access to high speed internet and Microsoft Office applications (e.g.,
Word, Power Point).

### 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 characteristics and patterns in numeration systems, and compare and
   contrast different numeration systems (e.g. base ten, other place-value-based systems, Babylonian, Roman
   Numerals).
2. Use, model, justify and explain binary operations and algorithms involving whole numbers, integers, and
   rational numbers.
3. Use, model, justify and explain concepts from number theory, including prime numbers, composite
   numbers, factors, multiples, GCF, and LCM, as well as divisibility rules.
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 numeration and quantitative reasoning, and use
   mathematical modeling techniques 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

The course will be a combination of lectures, individual and group work. Students are expected to participate in
group and whole class discussions by contributing with knowledge and thoughtful evaluation of the contribution
of others. Using physical models to teach the content topics and understanding how learning occurs through their
use will be a substantial portion of the class instructional plan.

### H. MAJOR COURSE REQUIREMENTS AND GRADING

Grades will be based on the percentage of total points the student earns. During the semester, for an
approximation of your overall grade you may look in Blackboard/My Grades, the column Weighted Total. The
exact overall grade will be known only at the end of the semester, when all the categories that compose the
overall grade will be known. 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. Labs will be unannounced, and contain problem sets from the current topics.
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/. Class participation will be graded based on attendance and your answers during class activities.

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Content &amp; Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08/28</td>
<td>Course Introduction, Chapter 1.1 -1.3</td>
<td>Syllabus, An Introduction to Problem Solving</td>
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<td></td>
<td>08/30</td>
<td></td>
<td>Polya’s Problem Solving Principles, More Problem-</td>
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<td>Solving Strategies</td>
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<td>2</td>
<td>09/04</td>
<td>Chapter 1.4-1.6</td>
<td>Algebra as a Problem-Solving Strategy, Additional</td>
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<td></td>
<td>09/06</td>
<td>Chapter 2.1</td>
<td>Problem-Solving Strategies, Reasoning Mathematically</td>
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<td></td>
<td>Sets and Operations on Sets</td>
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<tr>
<td>3</td>
<td>09/11</td>
<td>Chapter 2.2-2.3</td>
<td>Sets, Counting, and the Whole Numbers</td>
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<td></td>
<td>09/13</td>
<td></td>
<td>Addition and Subtraction of Whole Numbers</td>
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<tr>
<td>4</td>
<td>09/18</td>
<td>Chapter 2.4</td>
<td>Meanings of Addition, Subtraction, Multiplication and</td>
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<td>09/20</td>
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<td>Division</td>
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<td>5</td>
<td>09/25</td>
<td>Chapter 3.1-3.2</td>
<td>Test Chapters 1 &amp; 2</td>
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<td></td>
<td>09/27</td>
<td></td>
<td>Numeration and Non-Decimal Systems</td>
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<tr>
<td>6</td>
<td>10/02</td>
<td>Chapter 3.3-3.5</td>
<td>Algorithms for Addition, Subtraction, Multiplication</td>
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<td></td>
<td>10/04</td>
<td></td>
<td>and Division of Whole Numbers, Mental Arithmetic</td>
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<td>7</td>
<td>10/09</td>
<td>Chapter 4.1-4.2</td>
<td>Divisibility of Natural Numbers &amp; Divisibility Tests</td>
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<td>10/11</td>
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<td>8</td>
<td>10/16</td>
<td>Chapter 4.3</td>
<td>GCD &amp; LCM</td>
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<td>10/18</td>
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<tr>
<td>9</td>
<td>10/23</td>
<td>Chapter 5.1</td>
<td>Test Chapters 3 &amp; 4</td>
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<td></td>
<td>11/25</td>
<td></td>
<td>Representations of Integers</td>
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<tr>
<td>10</td>
<td>10/30</td>
<td>Chapter 5.2-5.3</td>
<td>Addition, Subtraction, Multi and Division of Integers</td>
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<td>11/01</td>
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<tr>
<td>11</td>
<td>11/06</td>
<td>Chapter 6.1-6.2</td>
<td>The Basic Concepts of Fractions and Rational Numbers</td>
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</table>
Addition and Subtraction of Fractions

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<thead>
<tr>
<th>Date</th>
<th>Quiz/Exam/Activity</th>
<th>Notes</th>
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<tbody>
<tr>
<td>11/08</td>
<td>Chapter 6.3-6.4</td>
<td>Operations on Fractions and Rational Numbers</td>
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<tr>
<td>11/13</td>
<td>Chapter 6.3-6.4</td>
<td>Operations on Fractions and Rational Numbers</td>
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<td>11/15</td>
<td>Thanksgiving</td>
<td>Operations on Fractions and Rational Numbers</td>
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<tr>
<td>11/20</td>
<td>Chapter 6.1-6.4</td>
<td>Operations on Fractions and Rational Numbers</td>
</tr>
<tr>
<td>11/22</td>
<td>Thanksgiving</td>
<td>Test Chapters 5 &amp; 6</td>
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<tr>
<td>11/27</td>
<td>Chapter 6.3-6.4</td>
<td>Operations on Fractions and Rational Numbers</td>
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<tr>
<td>11/29</td>
<td>Review</td>
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<td>12/04</td>
<td>Review</td>
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<td>12/13</td>
<td>Final Examination</td>
<td>Thursday 12/13/18 Location: CS-107 Time: 4:30-7:00 PM</td>
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</tbody>
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* Thanksgiving Day, no classes

** Date, Time & Location may change as per the Department Schedule

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. You are responsible for all notes, assignments and announcements made in class. Please check BlackBoard.

- **Late Work and Make-up Exams**
  Late assignments will not be accepted, unless exceptional circumstances prevent you from completing them. Submit proper to Student Services for extenuating circumstances. 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 will be no extra credit for this course.

- **Cell Phone Use**
  Please silence phones before coming to class. There is a zero-tolerance policy for texting or any other cell phone use in class. If you expect an important phone call, please inform me before class and quietly excuse yourself when you receive it.

- **Participation**
  An important aspect of learning to teach is, in part, a function of being a member of a community of learners that interacts to build knowledge about teaching and children’s learning. Another important aspect of learning to teach is engagement and collaborative work. Effective teachers are committed to professional growth through participation and collaboration to improve their practice. You are expected to actively participate in class, as this course is designed to draw upon the experiences and insights of your peers and your participation makes for a richer experience for all. Simply attending class does not constitute participation.

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.

I. 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.