A. COURSE INFORMATION

Course number/section: MATH 5326.001
Class meeting time: M 7:00 – 9:30 PM
Class location: CS – 107
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: George Tintera
Office location: CI 319
Office hours: Tuesday to Thursday, 1 to 3 pm.
Telephone: 361-825-6028
E-mail: george.tintera@tamucc.edu
Appointments: Appointments outside of office hours are available by request

C. COURSE DESCRIPTION

Algebraic reasoning incorporating the use of technology. This course includes investigations of patterns, relations, functions, and analysis, with a focus on representations and the relationships among them.

D. PREREQUISITES AND COREQUISITES

Graduate Standing. There are no co-requisites.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Textbook: Fostering Algebraic Thinking, Driscoll, Heinemann, 1999
Supplies: Graphing Calculator and Internet Access

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 students 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.

Upon successful completion of this course, students should be able to:
1. Algebraic Reasoning: Be able to describe the three habits of algebraic thinking and recognize examples of each in multiple contexts.
2. Algebraic Structures: Perform computations and analyze properties of operations in previously unfamiliar algebraic structures.
3. Patterns: Translate patterns and sequences among multiple representations, including pictures, tables, words, numbers, and algebraic symbols.
4. Functions: Recognize and describe the processes of doing and undoing functions, relations, and algorithms in a variety of contexts.
5. Linear Change: Recognize linear change in multiple forms and be able to find the equation of a linear relationship presented in numerical, graphical, verbal, or symbolic form.
6. Families of Functions: Identify linear, quadratic, exponential, and other common families of functions when represented in patterns, graphs, equations, and tables.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

The class uses the lecture format with student participation and discussion. The primary tool for investigations will be homework and office hours.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Grades will be calculated by homework, test, and exam, according to the following percentages.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class/Homework</td>
<td>30</td>
</tr>
<tr>
<td>Projects</td>
<td>30</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
</tr>
</tbody>
</table>

- **Class/Homework:** Participate in inquiry tasks, whole class discussion, and group work activities during regularly scheduled class time. Homework may require high speed internet access and word processing software.

- **Projects:** (1) select a challenging concept in algebra and prepare a report on research-based approaches for teaching the concept. (2) modify an inquiry based algebra activity for classroom teaching.

- **Quizzes:** demonstrate your mastery of sleect student learning outcomes during 20-45 minute individual assessments.

- **Final Exam:** Wednesday, May 8 from 4:30 to 7 PM. It will be comprehensive.
Your final grade will be assigned according to the following table:

<table>
<thead>
<tr>
<th>Point Total</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥450 points</td>
<td>A</td>
</tr>
<tr>
<td>≥400 points</td>
<td>B</td>
</tr>
<tr>
<td>≥350 points</td>
<td>C</td>
</tr>
<tr>
<td>≥300 points</td>
<td>D</td>
</tr>
<tr>
<td>Below 300 points</td>
<td>F</td>
</tr>
</tbody>
</table>

I. COURSE CONTENT/SCHEDULE

Important dates:
- January 14: First Day of Classes
- March 11-15: Spring Break
- April 5: Last Day to Drop a Class
- May 1: Last Day of Classes
- May 2: Reading Day

Course Schedule:

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 14</td>
<td>Algebra in the Schools</td>
<td>Pretest Habits</td>
</tr>
<tr>
<td>Jan 21</td>
<td>No Class, MLK Day</td>
<td></td>
</tr>
<tr>
<td>Jan 28</td>
<td>Algebraic Reasoning</td>
<td>Farmer</td>
</tr>
<tr>
<td>Feb 4</td>
<td>Linear Change</td>
<td>Tiling Garden Beds, Toothpick Patterns</td>
</tr>
<tr>
<td>Feb 11</td>
<td>Quadratics</td>
<td>Window Problem</td>
</tr>
<tr>
<td>Feb 18</td>
<td>Linear Functions</td>
<td>Going to School, Quiz</td>
</tr>
<tr>
<td>Feb 25</td>
<td>Operations</td>
<td>Arithmagons</td>
</tr>
<tr>
<td>Mar 4</td>
<td>Representations</td>
<td>Models for Algebraic Operations</td>
</tr>
<tr>
<td>Mar 11</td>
<td>No Class</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Mar 18</td>
<td>Exponentials</td>
<td>Requesting a Reward, Families of Problems</td>
</tr>
<tr>
<td>Mar 25</td>
<td>Algebraic Structures</td>
<td>Clock Math, Quiz</td>
</tr>
<tr>
<td>Apr 1</td>
<td>Functions</td>
<td>Permutations</td>
</tr>
<tr>
<td>Apr 18</td>
<td>Inverses</td>
<td>Arithmagons revisited</td>
</tr>
<tr>
<td>Apr 15</td>
<td>Equations</td>
<td>Putting on the Pounds, Balancing Act</td>
</tr>
<tr>
<td>Apr 22</td>
<td>Algebraic Structures</td>
<td>Cyclic Functions, Modular Arithmetic</td>
</tr>
<tr>
<td>Apr 29</td>
<td>Non linear Change</td>
<td>Polygonal Numbers</td>
</tr>
</tbody>
</table>
Final Exam,  
May 6, 7:15 – 9:45 pm

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**
  I will check the attendance in every class. Attendance is mandatory by Texas A&M University. Please save absences for emergencies.

- **Late Homework Assignments**
  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 exams or in-class activities.

- **No Make-up for Midterm/Final Exams**
  **Missed Exam:**
  No make-ups will be given without written evidence of an Official University excused absence. For an absence to be considered excused, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible (e.g. accident or emergency) the student must provide notification by the end of the second working day after the absence. In the case of illness or injury, students are required to obtain a confirmation note from a health care professional affirming date and time of a medical office visit regarding the illness or injury.

- **Extra Credit**
  There will be no extra credit for this course. Do your best to complete the work assigned.

- **Cell Phone Use**
  Please silence phone before coming to class. If you need to make a call, please go outside the classroom. **ANY USE OF A CELL PHONE OR WIRELESS DEVICE DURING A TEST CARRIES THE PRESUMPTION OF CHEATING. A GRADE OF 0 WILL BE AWARDED FOR THAT ASSIGNMENT FOR USING, TOUCHING OR GLANCING AT A CELL PHONE OR WIRELESS DEVICE.**

- **Laptop Use**
  Laptops, or any form of a new technology device is **NOT** allowed in the classroom during lecture and exam.
• **Food in Class**  
  Food is not allowed in the classroom.

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/](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.
M. 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.