Course Information

Meeting Time and Place: TR 9:30 – 10:45 AM BH- 223
Instructor: Coulibaly Nene
E-MAIL: Nene.Coulibaly@tamucc.edu
Office Address: CI 304
Office phone: 361-825-2219
Office hours: MW 4:45 PM – 5:30 PM & TR 4:00 PM – 5:30 PM

Course Description

College Algebra provides students a college level academic experience that emphasizes the use of algebra and functions in problem solving and modeling. It also provides a foundation for quantitative literacy, supplies the algebra and other mathematics needed in science courses, and helps meet quantitative needs in and outside of academia. Students address problems as real world situation by creating and interpreting mathematical models. Solutions to the problems are formulated, validated, and analyzed using mental, paper and pencil, algebraic, and technology-based techniques as appropriate.

The course deals with the fundamental concepts of numbers, functions and graphs of functions, equations and applications. Emphasis will be placed in linear, quadratic, exponential and logarithmic functions, and solutions of systems of equations.

The course aims to:
1. Involve students in a meaningful and positive, intellectually engaging, mathematical experience.
2. Provide students with opportunity to analyze, synthesize, and work collaboratively on exploration and reports.
3. Develop students’ logical reasoning skills needed by informed and productive citizens.

Text and other supplies required

At least one of the following TI-(83, 84 or 89) graphing calculators is required.

LEARNING OUTCOMES

GENERAL GOALS
1. Develop students’ mastery of algebraic techniques necessary for problem solving and mathematical modeling.
2. Improve students’ ability to communicate mathematical ideas clearly in oral and written form.
3. Develop students’ confidence and competence in their problem solving ability.
4. Develop students’ ability to use technology for understanding and doing mathematics.
5. Enable and encourage students to pursue further studies in mathematics.
COMPETENCES

1. Problem solving
   Students should be able to:
   a. Solve problems in the context of real world situations with emphasis on model creation and interpretation
   b. Develop a personal framework of problem solving techniques:
      i. Read the problem several times
      ii. Express the problem in your own language
      iii. Understand what is given and what is asked
      iv. Define variables
      v. Sketch and label diagrams
      vi. Collect data and make conjectures
      vii. Use analytical, numerical, graphical solution methods as appropriate
      viii. Determine plausibility of and interpret solutions
      ix. Be able to explain to other the approach followed to solve the problem
   c. Create, interpret, and revise models and solutions to problems

2. Functions and Equations
   Students should:
   a. Understand the concept of a function and the rate of change.
   b. Effectively use multiple representations (numeric, graphic, symbolic, and verbal) to explore elementary functions.
   c. Investigate linear, exponential, power, logarithmic, and periodic functions, as appropriate.
   d. Use systems of equations to model real world situations.
   e. Master algebraic techniques and manipulations necessary for problem solving and modeling in this course.

3. Data Analysis
   Students should be able to:
   a. Collect (in scientific discovery or activities, or from the internet, textbooks, or periodicals), display, summarize, and interpret data in various forms.
   b. Fit an appropriate curve to a scatter plot and use the resulting function for prediction and analysis.
   c. Determine the appropriateness of a model via scientific reasoning.

4. Abilities to Master
   Students should:
   a. Master computational skills to solve “basic”
      i. Linear equations
      ii. Quadratic equations, or equations quadratic in form
      iii. Exponential equations
      iv. Logarithmic equations
      v. Solving rational equations that can be reduced to either linear or quadratic equations
      vi. Solving systems of linear equations
      vii. One-dimensional analysis problems
   b. Master technology to solve “basic” and “non-basic” equations.
   c. Master identifying data and graphs that are linear, quadratic, exponential, or logarithmic.
INSTRUCTIONAL METHODS AND ACTIVITIES

Through the activities in the class the instructor aims to:
- Facilitate the development of students’ competence and confidence in their problem solving abilities.
- Utilize and develop algebraic techniques as needed in the context of solving problems.
- Emphasize the development of conceptual understanding of the mathematics by the students.
- Facilitate the improvement of students’ oral and written mathematical communication skills.
- Provide student-centered, activity-based instruction, including small group activities and projects.
- Use technology (computer, graphing calculator, spreadsheets, and computer algebra systems) appropriately as a tool in problem-solving and explorations.
- Conduct ongoing assessment activities designed to determine when adjustments are warranted in the learning process.

EVALUATIONS AND GRADE ASSIGNMENTS

Your final grade will be determined by

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance/Class Participation</td>
<td>5%</td>
</tr>
<tr>
<td>Group Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>10%</td>
</tr>
<tr>
<td>Midterms</td>
<td>40%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

Final grades will be assigned as follows

- 90% - 100% = A
- 80% - 89% = B
- 70% - 79% = C
- 60% - 69% = D
- Below 60% = F

COURSE POLICIES

Attendance/Class Participation
- Attendance is mandatory. Attendance will be checked each class period.
  You are expected to participate actively in your learning process. Based on your daily activities in class I evaluate your participation in a scale from 1-5 where 5 is excellent and 1 is poor. In case you don’t attend class you will receive 0 points. This is the checklist of items I will use to determine the extent of your participation.
- Ready to discuss assigned topics in the group and with classmates
- Asks meaningful questions
- Help others by explaining concepts
- Positive attitude toward subject and group
- Communicates well
- Shows respect for others

Group Homework

Each student will have a folder to keep all the work done for this class. The purpose of the homework is for you to go over old material and explore new one. Any assigned homework will be discussed the next class. Students will be called to contribute with their solutions to homework. Be prepared to show your work and explain it. You can use the doc cam to show your work. Make an earnest effort to do and understand the assigned homework.

Your homework has to be clearly written and organized. These are the guidelines I will follow to give credit to a solution to a homework problem:
- The problem statement should be included
• The main steps in the solution should be explained. Most of the time you don’t have to show every single step in the process, but you should show enough work to evidence your understanding.
• Conclude your problem with a written interpretation of the solution, using complete sentences.

This is the process we’ll follow to discuss homework at the beginning of each class:
• 5 minutes: students will discuss within their groups any difficulties on homework. Any questions not answered in the group will be put on the board.
• 5-10 minutes: Instructor addresses any problems on the board and asks questions about homework.

No late homework is collected.

Quizzes
• There will be many quizzes during the semester. The quizzes will be a check for me to see how you understand the material by yourself. Quizzes will be individual assessments focusing on material most recently covered.

Project
• There will be one major group project during the semester. Possible topics will be announced in class.

Midterm
• Two Midterm tests will be administered in class. Midterms also will be individual assessments, and the dates will be announced in class.

Final Exam
• The final exam will administered on Tuesday, December 11th from 8:00AM – 10:30AM, it will be a comprehensive examination along with material from the class/textbook which student skills still need to be evaluated. The final exam has two parts. The first part deals only with computational part where no technology will be allowed. The second part is a conceptual part and applications where graphing calculators can be used.
• IT IS MANDANTORY TO TAKE THE FINAL. ABSOLUTELY NO EARLY FINAL EXAMINATION, so make travel arrangements accordingly.

Others
• A grade of incomplete will only be given in exceptional circumstances, such as a death in the family or personal injury that might prevent someone from taking the final exam. (Please notice that an incomplete grade can only be given to students that are passing the course but have not completed the required work for reasons beyond the students’ control). In this case, it is the responsibility of the student to notify me as soon as possible, preferably by email, and to fill the required "Incomplete Form" available from the University Registrar. If this is not done, a score of 0% will be assigned for any incomplete exams and a final grade will be computed using the criteria described above.
• Please check carefully the date and time of the tests as I cannot change them for any other reasons not considered truly exceptional, that is; beyond the students’ control.
• 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 grade of 0% on that assignment or test.

- Although obviously I hope all goes smoothly for you this semester, events can sometimes occur that make dropping a course necessary or wise. I encourage you to consult with me before you decide to drop to be sure it is the best thing to do. 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. **FRIDAY November 15th, is the last day to drop a class with an automatic grade of “W” this term. I cannot personally assign a grade of W.**

- The instructor reserves the right to make changes to the above with due notice to the students. These changes will be announced in class and each student is responsible for keeping herself/himself informed of such changes.

**Preferred methods of scholarly citations**

**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.

**Grade Appeals**

As stated in University Rule 13.02.99.C2, Student Grade Appeals, 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 Rule13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

**Disabilities Accommodations**

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 or visit Disability Services at (361) 825-5816 in Driftwood 101. 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.