MAT 122

Finite Mathematics

Course Description
This course includes the following topics: logic; sets; Venn diagrams; counting problems; probability; matrices; systems of equations; linear programming, including the simplex method and applications; graphs; and networks.

Prerequisite: MAT 102.

3.0 Cr (3 lect/pres, 0 lab, 0 other)

Course Focus
Upon satisfactory completion of this course, students should be able to perform the following tasks:
- Solve and graph solutions to systems of linear equations and inequalities.
- Use matrices to solve systems of equations.
- Find maximums of linear programming problems.
- Use counting principles to determine the totals of combinations and arrangements.
- Find terms in a binomial series.
- Evaluate factorial/permutation notation.
- Compute probability.
- Use tree diagrams and Bayes’ theorem.
- Apply the measures of central tendency, variance and standard deviation.
- Understand and apply the math of finance in interest, annuities, and amortization problems.

Text and References

Course Goals
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. Appreciate algebra
2. Apply matrices real problems
3. Apply measure standard deviation
4. Apply measures variance
5. Apply measures central tendency
6. Calculate compound interest
7. Calculate continuous compounding
8. Calculate discount loan
9. Calculate future value simple interest
10. Calculate future value, present value ordinary annuity
11. Calculate present value compound interest
12. Calculate simple interest
13. Calculate sum terms
14. Compute basic matrix operations
15. Compute basic probability
16. Compute combinations
17. Compute factorial
18. Compute matrix products and inverses
19. Compute permutations
20. Estimate a given set data
21. Factor polynomials
22. Find maximums linear programming
23. Graph linear equations
24. Graph linear inequalities
25. Graph quadratic equations
26. Graph quadratic inequalities
27. Simplify radical expressions
28. Simplify rational expressions
29. Solve absolute value equations
30. Solve linear application problems
31. Solve linear programming problems
32. Solve quadratic equations
33. Solve radical equations
34. Solve rational equations
35. Solve systems linear equations
36. Understand set notation
37. Understand Venn diagrams
38. Use addition rule of probability
39. Use Bayes formula
40. Use counting principles
41. Use Gauss-Jordon method
42. Use product rule for probability
43. Use properties exponents
44. Use set notation
45. Use technology graph
46. Use technology solve matrices
47. Use tree diagrams
48. Use Venn diagrams
49. Write an equation given a set of data

Student Contributions
A minimum of 6 hours per week should be spent outside of class to practice and prepare for the material uncovered in the course.

The attendance policy for this course is consistent with TCL's attendance policy found in the student handbook.
In order to take the final exam, a student must have an overall average of 70%.

Course Evaluation
Evaluation for this course will come from 3 components: Homework, Unit Tests, and the Final Exam.

Students must earn a minimum score of 70% to pass this course and continue with his/her math sequence.

Current grade for this course can be found on the Course Compass website under your login.

Course Schedule
The class meets for 3 lecture/presentation hours per week.

Revised: November 2011

ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ACADEMIC MISCONDUCT
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

ATTENDANCE
The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Reinstatement requires the signature of the division dean.

In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.
When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance or under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.
- A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

HAZARDOUS WEATHER

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVH 101.1, WSOK 1230 AM, WAEG 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. [www.tcl.edu/textalert.asp](http://www.tcl.edu/textalert.asp)

EXTRA:

Emergency Text Message Alert

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to [www.tcl.edu](http://www.tcl.edu). On the homepage, click on “emergency TextAlert at TCL” and fill out the form or go to [www.tcl.edu/textalert.asp](http://www.tcl.edu/textalert.asp)

GRADING METHODOLOGY

The final grade must be 70 or more in order to pass the course and progress in the program. Students absent from an examination or presentation will receive a “0” grade for the examination unless other arrangements are made with the individual instructor prior to the examination or presentation day or on the examination or presentation day before the test/presentation is scheduled to be given.

The student is responsible for notifying the instructor for the reason of the absence. It is also the responsibility of the student to contact the appropriate instructor to arrange to make up the examination. Arrangements may be completed by telephone.

If the instructor is not available, a message should be left on the instructor’s voice mail AND with another member of the faculty or administrative assistant. The make-up exam will be scheduled and the instructor will decide the method of examination. Messages sent by other students are unacceptable.