

## Math for Liberal Arts

MAT K146 T2

Tues./Thurs.: 12:30 – 1:45 PM, Room D221

**Instructor – Kathy Hemenway**

**Text:** Excursions in Modern Mathematics by Peter Tannenbaum, 9<sup>th</sup> Edition  
Publisher: Pearson, ISBN 13:978-0-13-446837-2

### Course description: 3 CREDIT HOURS

The course covers areas which combine mathematics in a real-world interface. Focus will be placed on topics of social choice with applications in politics, social science, and government, growth of biological and human populations, personal finance and consumer debt, and explorations of shape and form.

**Measurements:** Tests (4)– 60%  
Projects (2) – 30%  
Homework – 10%

**Attendance:** It is very important that you attend **ALL** classes. Your attendance in the classroom, participation in classroom work /projects and preparation for each class is required and is essential to your success in the course.

**Support Services:** Tutorial services. Most Important: Meet with me for an extra help.

**Office Hours:** TBA and by arrangement via email.  
E-mail: khemenway@trcc.commnet.edu

**Class Cancellation:** In case of inclement weather, check the college website for class cancellations or call 860-215- 9000 for recorded message on the college phone.

### Course Topics:

#### Social Choice

The Mathematics of Elections  
The Mathematics of Power  
The Mathematics of Sharing  
The Mathematics of Apportionment

#### Growth

Population Growth Models  
Financial Mathematics

#### Statistics

Censuses, Surveys, Polls, and Studies  
Graphs, Charts, and Numbers  
Probability, Odds, and Expectations  
The Mathematics of Normality

## Projects (details and due dates to be announced):

#1 – PowerPoint Presentation on How Math Impacts My Career/Major Choice.

#2 – Presidents Statistical Project

## Course Objectives:

Upon the completion of this course students will be able to:

1. Determine the basic elements of an election, calculate winners of elections based on selected voting methods, and discuss the fairness of voting systems.
2. Calculate the voting powers using appropriate indexes and calculate numbers of subsets and permutations.
3. Determine the division of assets using multiple sharing methods.
4. Solve apportionment problems using multiple methods and determine quota rules and apportionment paradoxes.
5. Determine sequences and population sequences and calculate projected growth using linear, exponential, and logistic growth models.
6. Solve problems involving personal finance topics, including percentages, simple interest, compound interest, and consumer debt.
7. Practice the mathematics of symmetry: rigid motions, reflections, rotations, translations, glide reflections, symmetry, and patterns.
8. Explore the geometry of nature through the examples of the Koch snowflake, self-similarity, Sierpinski gasket and the chaos game, as well as the Mandelbrot set.

**ACCEPTANCE POLICY:** After reading this syllabus, choosing to stay registered for this course exemplifies your acceptance of the syllabus and all policies and consequences outlined in the syllabus. If you do not agree with any of the terms in the syllabus, you are free to withdraw.

**DISCLAIMER:** The instructor has the right to change/modify this syllabus at any time with proper notification to the class.

## Sexual Misconduct:

**BOARD OF REGENTS FOR HIGHER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY**

### **Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:**

“The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence.”

## **Title IX:**

### **UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:**

“Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient’s educational programs and activities.”

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Vicki Baker, the Diversity Officer and Title IX Coordinator: 860-215-9208 (vbaker@trcc.commnet.edu)

### **ACCOMMODATIONS:**

Students with learning disabilities should contact the Learning Specialist, Matt Liscum, at 860-215-9265 or via email at [mliscum@trcc.commnet.edu](mailto:mliscum@trcc.commnet.edu) as soon as possible to ensure timely accommodations. Students with physical disabilities should contact Elizabeth Willcox at 860-215-9289 or via email at [ewillcox@trcc.commnet.edu](mailto:ewillcox@trcc.commnet.edu) to facilitate accommodations. All testing accommodations MUST be discussed with the instructor in a timely manner, that is, *at least* one to two class meetings **prior** to any scheduled test for which accommodations are needed.

### **ACADEMIC DISHONESTY POLICY:**

Academic integrity is essential in all aspects of college coursework and learning. I have zero tolerance for academic dishonesty. It is expected that **YOU** complete all your assigned ALEKS work. Communication or collaboration of ANY sort is ABSOLUTELY PROHIBITED during any exam. Academic Misconduct is punishable in a number of ways, including a score of a zero on the assignment where the cheating took place, a grade of an F in the course and/or possible censure on your permanent record. All cases of academic dishonesty will be referred to the Academic Dean. Do not let yourself come under the suspicion of academic dishonesty.)

### **DIGICATION:**

As a student you will maintain an online learning portfolio using a college-designed template in Digication. Through this electronic tool you will have the opportunity to monitor your own growth in college-wide learning. It may even help you determine a major that is best suited to you. You will be able to keep and maintain your learning portfolio after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. If your work is selected and reviewed for assessment purposes, it will remain anonymous and private. Digication provides a “place” where you will connect your learning from the classroom, college, and life in general. Sometimes when you review all of the work you have done and think about it, you end up learning something different and perhaps unexpected. Please review your course outlines to determine what assignments to upload into the TRCC Digication template and please post your own choices, as well. Have fun in learning!