Syllabus

Course Information
- MAT135 – Topics in Contemporary Math
- Monday 6:30pm to 9:15pm
- Room Number D222

Instructor Information
- Office Hours: Monday and Friday 4:00pm till 6:00pm (Appointment Only)
- Phone Number: (860)373-0143 (Leave a message)
- Email: Padrick77@gmail.com

Course Description

This course will expose students to topics in mathematics that are useable and relevant in today's world. Students will apply mathematical ideas while working in within a social context.

Required Text

Math is Everywhere Explore and Discover It! Third Edition James J. Rutledge

Supplies
- Notebook
- Writing Utensil (Pencil, Blue or Black Pen)
- A Graphing Calculator
- Access to a computer connected to the internet

Disabilities Statement

Students with hidden or visible disabilities who may require special accommodations and support services are encouraged to notify the instructor and Chris Scarborough (860) 892-5751, who is coordinating services to students with disabilities, during the first two weeks of class.

Academic Integrity Policy

Each Student is expected to demonstrate his/her knowledge of the subject matter on each assignment and test. Any student(s) caught cheating on a test will receive a zero for that test and will not be allowed to make-up that test.

Class Cancellation Policy

If class is canceled by the school, pay attention to radio and TV announcements, call the college's main phone number (860) 886-0177, or visit the college's homepage http://www.trcc.commnet.edu .
If class is canceled by the instructor, a notice will be placed on the classroom door. If time permits, students will be notified by email.

Grading System

These letter grades and corresponding numerical grades will be used for all assignments and the course grade: A (93-100), A- (90-92), B+ (87-89), B (83-86), B- (80-82), C+ (77-79), C (73-76), C- (70-72), D+ (67-69), D (63-66), D- (60-62), F (below 60)

Assignments

Assignments will be given on a weekly basis. All students are expected to work on assignments regularly and to seek assistance if the problems are not understood. All work should be kept in a notebook which may be reviewed by the instructor at any time.

Attendance

Students are expected to attend all classes, to arrive for class on time, and to remain for the duration of the class meeting. It is the student's responsibility to request any missed work, assignments, or materials before the next class. Students who are consistently tardy, leave class early, and/or walk in and out of class are a distraction to the instructor and the other students. This results in a disruption of the class and the learning process.

Method of Evaluation
- Participation and Attendance – 12%
    o 1 Point given per day you come to class and participate
- Weekly Project - 12 Projects Due – 36%
    o You will be required to sign up for the project you are going to do on my website using the Google Spreadsheet. The sign up is a first come first pick once all the slots for a particular project are taken you cannot choose that one.
    o Presenters will be chosen by the Friday before class and notified by email.
- Project Presentations – 3 Class Presentations – 30%
    o If you are chosen to do a class presentation you will present at the start of class that coming Monday.
    o Presentations should be between 5 and 7 min and can be no linger than 10 min.
- Final Exam – 22% - WEBLIOGRAPHY REPORT
As you have discovered, conducting research on the Internet can be a time-consuming and somewhat trying process. Some Web sites simply do not exist anymore, many Web sites that sound promising in their abstracts turn out to be rather irrelevant to your investigations and often only a few Web sites actually provide fruitful and valuable content for your research topic. Now that you have had a chance to conduct some Internet research in various topic areas of mathematics, it is time to sort and summarize your Web-ventures for the benefit of other students and readers. The objective of this project is to produce a guide to the "best-of-the- Web" with regard to the subject content of this course.
Assignment:
In order to accomplish this objective, please take the following steps:
1. Look back over the Web sites that you visited this semester as part of our course projects and rate them in some way. For example: excellent, very good, good, fair, or not worth the visit.
2. Choose the BEST TEN of these Web sites for inclusion in your project. Please do not include sites that you rated as good, fair or not worth the visit. The sites that you rated as EXCELLENT or VERY GOOD are the only ones that are to be included in this project. If you haven't found ten excellent or very good sites, you'll need to do some more Internet research to locate them. (Note: You may use up to three of the sites that were listed and recommended in the course projects but please use at least seven sites that were NOT listed in the projects and that you discovered during your own Internet investigations. You need to submit a total of TEN sites altogether.)
3. Revisit each of these ten Web sites, if necessary, and analyze in more detail why you rated them so highly. Take notes on the content features of the site, the presentation style of the materials and your reactions to them.
4. For each of your ten Web sites, write a brief paragraph (three sentences at a minimum) describing the site and its features and why it deserves the rating you are giving it.

Rules of Conduct in Class
- Respect each person
- No food or beverages in the classroom
- Electronic devices must be turned off or silenced during class.
- Student Behavior: *"The College has the right and responsibility to take appropriate action when a student's conduct directly and significantly interferes with the College's educational mission and the rights of others to purse their educational objectives in an environment conductive to learning."* –from the TRCC Student Handbook. Such action will, at a minimum, be the dismissal of the student from the remainder of the day's class and any graded work from that day will be graded as a zero.

Assignment List
(All homework assignments are subject to change)

1/24 **Objectives**
- Review Syllabus and Class Rules
- Chapter 1 - Reasoning and Resources: Tools for Life
- Project: (Choose One)
  - Pg. 6-7 Pascal's Famous Triangle
  - Pg. 19 Guards and Prisoners
  - Pg. 20-21 Cross-Number Puzzle
  - Pg. 26-27 MERLOT and You

1/31 **Objectives**
- Chapter 2 – Patterns and Reasoning: Fun with Math!
- Project: (Choose One)
  - Pg. 46 A Riddling Good Time
  - Pg. 62 The Curious Date: 7-14-98
  - Pg. 63 Another Curious Date 10-1-01

2/07 **Objectives**
- Chapter 2 – Patterns and Reasoning: Fun with Math!
- Project: (Choose One)
  - Pg. 81 Sequence Creations
  - Pg. 82 Generalization – A Powerful Tool
  - Pg. 99 Puzzle Constructions
  - Pg. 116 Magic Squares
  - Pg. 117 Magic Squares Extensions

2/14 **Objectives**
- Chapter 3 – Math from Other Times and Places: Historical Investigations
- Project: (Choose One)
  - Pg. 126-127 Polygonal Numbers – A Geometric View
  - Pg. 129 Pascal's Triangle
  - Pg. 137 The Abacus
  - Pg. 138 Numeration in Other Cultures

2/28 **Objectives**
- Chapter 4 – Number Bases: Surprising Versatility
- Project: (Choose One)
  - Pg. 152 The Banker's Dilemma
  - Pg. 158-159 Chinese Trigrams and Binary Numbers
  - Pg. 160-165 The ASCII Code
  - Pg. 166 Course Logo: A Hidden Message
  - Pg. 172 Hexadecimals

3/07 **Objectives**
- o Chapter 5 – Modulus Arithmetic and Its Many Uses
- o Project: (Choose One)
  - Pg. 180-184 Perpetual Calendar
  - Pg. 190-192 ISBN Numbers and Modulus Arithmetic
  - Pg. 193-199 ISMN Numbers and Modulus Arithmetic
  - Pg. 207 Cryptograms: A Popular Pastime
  - Pg. 207-208 Cryptoquotes: Another Favorite

3/21 **Objectives**
- o Chapter 6 – Mathematics and Music: Inseparable Partners
- o Project: (Choose One)
  - Pg. 223 Creating Good Vibrations
  - Pg. 224 Famous Math Quotes
  - Pg. 227-233 Guitar Analysis
  - Pg. 236-237 Digital Music and Mathematics

3/28 **Objectives**
- o Chapter 7 – Mathematics in Art: Architecture and Nature
- o Project: (Choose One)
  - Pg. 245-247 Mathematical Perspective
  - Pg. 252 Tilings in Your Home
  - Pg. 253 Symmetry and Tilings
  - Pg. 254 A Study in Oriental Rugs and Carpets
  - Pg. 255 The Mathematical Art of M.C. Escher
  - Pg. 260 The Amazing Rabbit Population
  - Pg. 261 Golden Rectangles in your Home
  - Pg. 262 Fibonacci Numbers in Nature and the Arts
  - Pg. 263- 264 Logarithmic Spirals – Seashell Design
  - Pg. 265 Bee-line Puzzle

4/04 **Objectives**
- o Chapter 8 – Fractals: New Structures in Mathematics
- o Project: (Choose One)
  - Pg. 281-283 Introduction to Fractals
  - Pg. 291 Fractals in Nature
  - Pg. 292 Fractal Music
  - Pg. 292 Fractal Art
  - Pg. 295 Triangle Connections
  - Pg. 296-298 The Chaos Game

4/11 **Objectives**
- o Chapter 9 - Linear Relationships: Straight as an Arrow
- o Project: (Choose One)
  - Pg. 317 Seeing Daylight
  - Pg. 333 Running the Race
  - Pg. 346 How Does your Lawn Grow?
  - Pg. 347-348 How Does your Garden Grow?

4/25   **Objectives**
- Chapter 10 – Exponential Growth: Drama and Suspense
- Project:
    - Pg. 367 World Population Growth
    - Pg. 371 U.S. Population Growth: What does the Future Hold?
    - Pg. 372 The Fastest Growing State in the U.S? You May Be Surprised
    - Pg. 372 Population Growth in Naples, Florida: Dramatic to say the Least

5/09   **Objectives**
- Chapter 11 – Financial Planning: Mathematical Secrets to Acquiring Wealth
- Project: (Choose One)
    - Pg. 386-388 The Long-term Results of Compound Interest
    - Pg. 391 Intro to Savings and Investment
    - Pg. 394 Intro to Stocks, Bonds and Mutual funds
    - Pg. 395 Investment Strategies
    - Pg. 396 A True and Amazing Story
    - Pg. 409-411 The All-Powerful Interest Rate
    - Pg. 414 Credit Reports & Ratings: An Inside Look
    - Pg. 415-419 The Truth About Credit Card Debt

5/16   **Objectives**
- Final Exam Project Due
    - Pg. 267 Webliography Report Using Diigo.com