Applied Discrete Math   YEAR 2013-2014

Location	**Room 1**	
Instructor	**Mr. Morris**	
Planning Period	**4th Period (10:23 – 11:07)** **Phone: (724) 662-5104**	**Parent-Teacher Conferences may be scheduled before school from 7:45 to 8:00 or during the planning period.**
Email	tmorris@mercer.k12.pa.us	
Class Website	http://www.mercer.k12.pa.us/…	
Prerequisites	Algebra 2 and Geometry	
Description	Students in applied discrete mathematics will be introduced to a variety of topics in discrete mathematics which are not typically found elsewhere in the high school math curriculum. All topics will be taught within an applied context. The overriding theme of the course will be the practicality of mathematics.	
Textbook	*For All Practical Purposes (Eighth Edition)*	
Homework Policy and Philosophy	**Students should expect to have a homework assignment each night. Homework assignments are necessary in order for students to practice the concepts covered in class that day. I will assign only the amount of homework that I feel is necessary for students to master each concept.** **Students will not be awarded points for the completion of homework for this class. This course is intended to be a college-level course that is specifically designed to prepare students for entry into college. In order to be prepared for collegiate math courses, students must be prepared to complete assignments with the understanding that the assignments are necessary in order to master the materials.**	**Homework Philosophy** "The application of homework within almost every learning activity is a valuable means of reinforcement and evaluation. It is the teacher's role to define such assignments and the responsibility of the students to complete them on time. Parents must also assume their responsibility in regard to student homework; therefore, proper communication between home and the school are vital in establishing assignments, which can significantly contribute to the overall educational process."
Grading **97 – 100 A+** **93 – 96 A** **90 – 92 A-** **87 – 89 B+** **83 – 86 B** **80 – 82 B-** **77 – 79 C+** **73 – 76 C** **70 – 72 C-** **67 – 69 D+** **63 – 66 D** **60 – 62 D-** **0 – 59 F**	Grades are based on a percentage system and the number of assessments and grades will vary from semester to semester. Evaluations will be in (but not limited to) the following forms: In-class assignments Activities Quizzes Tests Projects Students are expected to keep a record of point totals in case there is a discrepancy. Each student is required to keep all quizzes, tests, and worksheets in his/her possession. These will provide a resource to study for any semester or final exams. Late assignments will result in a deduction of one letter grade for each day late. NOTE: assignments not turned in during the class period due will be considered late.	**Academic Integrity** "Students caught cheating, plagiarizing, copying homework and/or tests, quizzes, and using paper from the Internet will be given a "0" (zero) on that assignment. In addition, their name will be reported to the office and filed in the event of future violations. Repeated violations could result in removal from class, a non-passing grade, or a discipline hearing." **When a student is in jeopardy of failing, a progress report will be sent home. Progress reports for students grades 7-12 will be mailed at the mid-point of each marking period.**

Classroom Rules	Food, drinks, tobacco products, CD/MP3 players, IPods, cell phones, video games, and hats are **STRICTLY PROHIBITED** in the classroom. Other rules that will be enforced are as follows: 1. **Arrive on time.** 2. **Be organized and prepared for class. (Always bring notes, textbook, pencil, etc.)** 3. **Raise your hand BEFORE speaking.** 4. **Listen to others and participate in class discussions.** 5. **Follow directions the FIRST time given.** 6. **Remain in your seats until you are dismissed.** 7. **It is the responsibility of the student to obtain notes/materials when he/she is absent.** 8. **Show respect for yourself, others, and the teacher at all times.** **If any student chooses not to follow any of these classroom rules, consequences WILL follow. The consequences may include, but are not limited to, a deduction of class points, a conference with the student's parent(s), a detention, or a discipline referral to the office. If the violation is of serious offense, a meeting with the principal and/or parents will be scheduled.**	**Make-Up Work** "Students are required to make up all missed work within a maximum of one school week after returning from any absence. Teachers may require student's makeup work within a like number of days for any absence i.e, two days absent – two days to complete the missed work. If a student is absent on the day of a scheduled assessment they will be required to complete that assignment on the day he/she returns to school." For one day or one period school-related absence (athletics/academic games, etc) – it is the student's responsibility to make up the work upon their return to the classroom. It is recommended that they see the teacher ahead of time to determine what they will miss while they are gone." **Late to Class** "Students reporting late to class must secure a pass from the previous teacher if they were legitimately detained. Without such a pass, the student will be liable for detention.
Required Materials	**Students are to have a notebook, folder and a writing utensil with them AT ALL TIMES. Failure to comply will result in a deduction of class points.**	
Additional Help	**Students who seek additional help should make an appointment with the instructor.**	**Tutoring** Extra Assistance is available on a regular basis during after school hours (Tuesdays and Thursdays from 3:15 to 4:15) by contacting the Guidance Office at (724)662-2272. It is the students' responsibility to seek such tutoring if needed.

OUTLINE OF MATERIAL COVERED IN THIS CLASS

# of Days	Material Covered During Time Period	Notes
Minimum of 6 days	**Chapter 1:** *Urban Services* **Euler Circuits, Finding Euler Circuits, Beyond Euler Circuits, Urban Graph Traversal Problems**	There will be a maximum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Minimum of 10 days	**Chapter 2:** *Business Efficiency* **Hamiltonian Circuits, Traveling Salesman Problem, Helping Traveling Salesmen, Minimum-Cost Spanning Trees, Critical-Path Analysis**	There will be a maximum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Minimum of 18 days	**Chapter 3:** *Planning and Scheduling* **Scheduling Tasks, Critical-Path Schedules, Independent Tasks, Bin Packing, Resolving Conflict Via Coloring**	There will be a minimum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Minimum of 16 days	**Chapter 4:** *Linear Programming* **Mixture Problems: Combing Resources to Maximize Profit, Finding the Optimal Production Policy, Why the Corner Point Principal Works, Linear Programming: Life is Complicated, A Transportation Problem: Delivering Perishables, Improving on the Current Solution**	There will be a minimum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Minimum of 22 days	**Chapter 5:** *Exploring Data: Distributions* **Histograms, Interpreting Histograms, Stemplots, Mean and Median, Quartiles, The Five-Number Summary and Boxplots, Standard Deviation, Normal Distributions, The 68--95--99.7 Rule**	There will be a minimum of 2 quizzes throughout the unit with a chapter test at the completion of the unit.
Minimum of 8 days	**Chapter 6:** *Exploring Data: Relationships* **Displaying Relationships: Scatterplots, Making Predictions: Regression Line, Correlation, Least-Square Regression, Interpreting Correlation and Regression**	There will be a minimum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Minimum of 7 days	**Chapter 7:** *Data For Decisions* **Sampling, Bad Sampling Methods, Simple Random Samples, Cautions About Sample Surveys, Experiments, Experiments Versus Observational Studies**	There will be a minimum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Minimum of 18 days	**Chapter 21:** **Savings Models** **Arithmetic Growth and Simple Interest, Geometric Growth and Compound Interest, A Limit to Compounding, A Model for Saving, Present Value and Inflation**	There will be a minimum of 1 quiz throughout the unit with a chapter test at the completion of the unit.

Minimum of 9 days	**Chapter 22: Borrowing Models** **Simple Interest, Compound Interest, Conventional Loans, Annuities**	There will be a minimum of 1 quiz throughout the unit with a chapter test at the completion of the unit.
Remainder of the Year	**Other Concepts Covered:** **Rate Conversions, Cryptography: (Caesar Cipher, Decimation Cipher, Vigenere Cipher), Home Remodeling Project, Check Writing, Checkbook Balancing, Game Theory, Divisibility, Logic, Stock Market Project**	

Course Syllabus is Subject to Change