MATH2305 Syllabus
South Plains College – Spring 2019

Time: MW 11:00 – 12:15

Course Title: Discrete Mathematics with Computer Science Applications

Course Purpose: The goals of this course are to provide a foundation for the study of discrete mathematics, to improve problem solving skills using mathematical reasoning and abstract analysis, and to apply these skills to computer science topics and applications.

Instructor:

Charlotte Young
125B Math Building   Phone: 806-716-2666 (voice mail capable)
email: cyoung@southplainscollege.edu

Office Hours:

Mon	Tues	Weds	Thurs	Fri
9:00-9:30	9:00-9:30 2:15-3:45	9:00-9:30	9:00-9:30 2:15-3:45	9:00-12:00

Required Textbook: Discrete Mathematics and its Applications, seventh edition, Kenneth H. Rosen, McGraw-Hill, 2012. ISBN: 978-0-07-338309-5.

Required Supplies: A 3-ring notebook (not a spiral) for homework assignments. (See the document on BlackBoard titled "Notebook Procedures".) You will need a USB flash drive to store your programming projects. You must bring this drive to class every day. It is recommended that you back up your files on this drive to a home computer or other media. Purchase a USB 3.0 drive for faster read/write speeds.

Attendance Policy: Attendance AND completing daily homework assignments are imperative for success in this course. If you are absent, you are still responsible for the assignment for the next class; **you are expected to access Blackboard for current assignments and test dates**. Please read the "Class Attendance" and "Drops and Withdrawals" policies in the current catalog. If you have more than 4 absences, you must ask my permission to be reinstated in the class. If you have excessive absences, you are responsible for initiating your own drop if you expect a W for a grade instead of an F. The last day to drop is April 25, 2019.

It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student who was administratively dropped was awarded financial aid for the class, the financial aid award will be adjusted and the student will owe any balance resulting from the adjustment.

Academic Conduct: You may discuss the programming assignments and homework with your classmates, but you must code or complete the assignments on your own. Copying of another student's work or allowing your work to be copied is considered plagiarism and a failing grade will be given *to all parties involved*.

Cell phones MUST be turned off and put away during class and exams. Calculators are not allowed during exams. Headphones are not allowed during exams. Once you receive an exam, you may not leave the testing area before you submit the exam and you must finish within the allotted time.

Assignment Policy: Current assignments and due dates will be published on Blackboard. Students are expected to have the assigned homework completed and to read the next section before coming to class. Short quizzes will be given and may be announced or unannounced. No makeup quizzes will be given - an absence equals a zero quiz grade!

Homework will be kept in a 3-ring notebook and submitted every exam day. Several computer programs will be assigned to be done outside of class; the student may choose which language to program in.

Grading Policy: There will be 3 major exams and a comprehensive final. Your lab grade will be calculated from short quiz grades, notebook grades, and programming assignments. Your final grade will be computed as follows:

Major Exams (3):	50%
Final Exam	20%
Lab Grade:	30%

If you miss an exam, it is your responsibility to contact me as soon as possible using email or voicemail. If permission is granted for a makeup exam, I will want it to be taken before the next class meeting. Missing an exam is a serious matter and it is up to the student to take the proper action, otherwise a zero will be recorded for that exam. No student will be exempt from the final.

Course Objectives:

- To give computer science students the mathematical foundations for future computer science courses.
- To give a foundation in mathematical logic and to explore mathematical reasoning and methods of proof.
- To work with discrete structures, which are abstract mathematical structures used to represent discrete objects and relationships between those objects. These discrete structures include sets, permutations, relations, and graphs.
- To teach algorithmic thinking and the specification, verification, and analysis of algorithms which can then be implemented by a computer program.
- To explore applications of discrete mathematics, especially in the area of computer science.

MATH2305 Spring 2019 Course Outline

This proposed schedule will change as the semester progresses! Always refer to Blackboard for exact dates.

Week Start date	Topics
1 Jan 14	What is Discrete Math? First problems. 1.1 Propositional Logic
2 Jan 21	*MLK Holiday – Mon 1/21* 1.2 Applications of Propositional Logic
3 Jan 28	1.3 Propositional Equivalences
4 Feb 4	1.4 Predicates and Quantifiers
5 Feb 11	1.5 Nested Quantifiers
6 Feb 18	**Exam 1** 1.6 Rules of Inference
7 Feb 25	1.7 Intro to Proofs
8 Mar 4	2.1 Sets
	Spring Break : March 11-15
9 Mar 18	2.2 Set Operations
10 Mar 25	2.3 Functions
11 Apr 1	**Exam 2** 2.4 Sequences and Summations
12 Apr 8	3.1 Algorithms 3.2 The Growth of Functions
13 Apr 15	3.3 Complexity of Algorithms 4.1 Number Theory: Divisibility and Modular Arithmetic
14 Apr 22	*Mon 4/22 Easter Holiday* **Exam 3** *Thurs 4/25 Last Drop Day*
15 Apr 29	4.2 Integer Representations and Algorithms 4.3 Primes and GCDs
16 May 6	**Final Exam** Mon 5/6 10:15 - 12:15