

MATH2305 Syllabus

South Plains College – Spring 2018

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 26, 2018.

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 during class and testing periods. Calculators are not allowed during exams.

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.

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.

South Plains College Statements:

Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) & Lubbock Center 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College -1401 College Avenue, Box 5, Levelland, TX 79336, 806-716-2360. The Director of Health & Wellness can advise you confidentially as can any counselor in the Health & Wellness Center with other non-course-related concerns. They can also help you access other resources on campus and in the local community. You can schedule an appointment with a counselor by calling 716-2529.

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

South Plains College permits the lawful carry of concealed handguns in accordance with Texas state law, and Texas Senate Bill 11. Individuals possessing a valid License to Carry permit, or the formerly issued Concealed Handgun License, may carry a concealed handgun at all campus locations except exclusion zones like the Natatorium. For a complete list of campus carry exclusions zones by event, please visit <http://www.southplainscollege.edu/campuscarry.php>

MATH2305 Spring 2018 Course Outline

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

Week Start date	Topics
1 Jan 15	<i>Mon 1/15 MLK Holiday</i> What is Discrete Math? First problems.
2 Jan 22	1.1 Propositional Logic 1.2 Applications of Propositional Logic
3 Jan 29	1.3 Propositional Equivalences
4 Feb 5	1.4 Predicates and Quantifiers
5 Feb 12	1.5 Nested Quantifiers
6 Feb 19	Exam 1 1.6 Rules of Inference
7 Feb 26	1.7 Intro to Proofs
8 Mar 5	2.1 Sets
Spring Break March 12-16	
9 Mar 19	2.2 Set Operations 2.3 Functions
10 Mar 26	2.4 Sequences and Summations
11 April 2	<i>Mon 4/2 Easter Holiday</i> Exam 2
12 Apr 9	3.1 Algorithms 3.2 The Growth of Functions
13 Apr 16	3.3 Complexity of Algorithms 4.1 Number Theory: Divisibility and Modular Arithmetic
14 Apr 23	4.2 Integer Representations and Algorithms Exam 3 <i>Thurs 4/26 Last Drop Day</i>
15 Apr 30	4.3 Primes and GCDs 4.4 Solving Congruencies and Applications
16 May 7	Final Exam Mon 5/7 10:15 - 12:15