Math 1165: Introduction to Discrete Mathematics

Section 001, EPIC 2222, TR 12:30 – 1:45pm

Instructor Information

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Textbook & Resources

textbook: Discrete Mathematical Structures by Kolman, Busby, & Ross, 6th Ed.
class website: http://math.uncc.edu/~sjbirdso/discrete/
calculator (optional): TI-83 or comparable

General Information & Grading Scale

This course introduces the notion of proofs as well as surveys several branches of mathematics closely related to computer science, including logic, counting, graphs and trees, functions, and posets. In particular, we will cover the first 7 chapters of the textbook. All assignments and class handouts can be found on the class website in addition to being distributed in class. I expect every student to attend each class and will take attendance.

homework	25%
projects & quizzes	5%
3 exams	45%
final	25%

Tests & Make-up Work

There will be three in-class tests and a final exam. A review for each test will be held during the class prior to the test. Test dates will not change; these dates are listed on the daily schedule at the end of this syllabus. You must contact me ahead of time to arrange for make-up work.

Questions & Extra Credit Work

Bring any questions to class. If we do not have time to go over all the questions at the beginning of class, you can ask me after class, come by my office, email me, or call me.

There will be opportunities for extra credit on both the class tests and the homework.

Special Accommodations

If you plan to seek special accommodations (ie: extended time through the Office of Disability Services or accommodations for religious observances), be sure to contact the appropriate department and follow their instructions for obtaining accommodations, including dealing with the related paperwork.

Assignments

Working all of the homework questions is essential to be able to learn the concepts covered in this class. The homework sets will be due every Tuesday. There will also be several projects, which may include coding small computer programs.

Cheating* Policy:

While I encourage you to use any and all resources at your disposal to complete homework, I expect that for tests and quizzes your work is entirely your own and that you have not used any unauthorized materials. If I find a student has cheated or has intentionally aided a classmate in cheating, that student will receive a zero on the test or quiz. If I find a student has cheated for a second time, that student will receive a zero for the course. It is your responsibility to know the academic integrity code and our class policy on cheating. If you have questions about a situation or how the policies apply to this class, feel free to ask me. (See the class website for more information.)

Definition of Cheating: Intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices in any academic exercise. This definition includes unauthorized communication of information during an academic exercise.

Common Examples: Copying from another student's paper or receiving unauthorized assistance during a quiz, test or examination; using books, notes or other devices (e.g., calculators or cell phones) when these are not authorized; procuring without authorization tests or examinations before the scheduled exercise.

Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Common Examples: Knowingly allowing another to copy from one's paper during an examination or test; sharing calculators during an exam; knowingly distributing test questions or substantive information about the material to be tested before the scheduled exercise; or signing a false name on an academic exercise.

Changes to the Syllabus

While unlikely, this syllabus may be modified at any time during the semester. Such changes will be announced in class as well as changed on the syllabus posted to the class website.

* These definitions and examples were taken and slightly adopted from University Policy Statement #105: the Code of Student Academic Integrity, section III (http://www.legal.uncc.edu/policies/ps-105.html#III)

(Tentative) Course Schedule:

No classes on: Monday, Sept 2; Monday & Tuesday, Oct 7-8; and Wednesday through Friday, Nov 27-29. Last day to add/drop is August 28; last day to withdraw with a W and not an F is October 28. Last day of classes is December 4.

Date	Topic Covered	Material Due
Aug 20	1.1: Sets and Subsets & 1.2: Operations on Sets	
Aug 22	1.3: Sequences	
Aug 27	1.4: Properties of Integers & 1.5: Matrices	homework sets
Aug 29	1.5: Matrices & 1.6: Mathematical Structures	
Sept 3	2.1: Propositions & Logical Operators 2.2: Conditional Statements	homework sets
Sept 5	2.3: Methods of Proofs & 2.4: Mathematical Induction	
Sept 10	2.4: Mathematical Induction 2.5: Mathematical Statements	homework sets
Sept 12	2.6: Logic & Problem Solving Review for Test 1	
Sept 17	**TEST 1**	homework sets
Sept 19	3.1: Permutations & 3.2: Combinations	
Sept 24	3.3: Pigeonhole Principle & 3.4: Elements of Probability	homework sets
Sept 26	3.4: Elements of Probability & 3.5: Recurrence Relations	
Oct 1	4.1: Product Sets & Partitions 4.2: Relations & Digraphs	homework sets
Oct 3	4.2: Relations & Digraphs 4.3: Paths in Relations & Digraphs	
Oct 8	Fall Break – no class	
Oct 10	4.3: Paths in Relations & Digraphs 4.4: Properties of Relations	
Oct 15	4.5: Equivalence Relations 4.6: Data Structures for Relations & Digraphs	homework sets
Oct 17	4.6: Data Structures for Relations & Digraphs Review for Test 2	
Oct 22	**TEST 2**	homework sets
Oct 24	4.7: Operations on Relations	
Oct 29	4.8: Transitive Closure & Warshall's Algorithm 5.1: Functions	homework sets
Oct 31	5.1: Functions & 5.2: Functions for Computer Science	
Nov 5	5.3: Growth Functions & 5.4: Permutation Functions	homework sets
Nov 7	6.1: Posets & 6.2: Extremal Elements of Posets	
Nov 12	6.3: Lattices	homework sets
Nov 14	6.4: Finite Boolean Algebras Review for Test 3	
Nov 19	**TEST 3**	homework sets
Nov 21	6.5: Functions on Finite Boolean Algebras 6.6: Circuit Design	
Nov 26	7.1: Trees & 7.2: Labeled Trees 7.3: Tree Searching	homework sets
Nov 28	Thanksgiving Break – no class	
Dec 3	7.4: Undirected Trees 7.5: Minimal Spanning Trees	homework sets
Dec 5	Reading Day – no class	
Dec 12	**FINAL EXAM** (11am – 1:30pm)	