



## Math 322, Discrete Mathematics 2, Spring 2018, Section 22011

**Instructor:** Mark Arrasmith  
**Department:** Mathematics, Statistics and Physics  
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**Office Hours:** 10:30am to 11:30am Daily  
**Classroom; Days/Time:** JB 372 ; 1:30pm - 2:45pm TTh

**Final Exam; Days/Time:** Tuesday, May 8, 1:00pm - 2:50pm

### How to use this syllabus

This syllabus provides you with information specific to this course, and it also provides information about important university policies. This document should be viewed as a course overview; it is not a contract and is subject to change as the semester evolves. Any changes made over the semester will be communicated in class lectures.

### Academic Honesty

Students are responsible for knowing and following the Student Code of Conduct and the Student Academic Honesty Policy.

A standard of academic honesty, fairly applied to all students, is essential to a learning environment. Consequences of violating the honesty policy include possible grade reduction, failing grade for the semester, or dismissal from the college.

### Course Description

A continuation of MATH321. Includes relations, graphs, trees, Boolean algebra and automata. Prerequisite: MATH 321

### Definition of a Credit Hour

Example for 3 credit hour class: Success in this 3 credit hour course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction and preparation/studying or course related activities for a total of 135 hours.

### Required Texts/Readings Textbook

Discrete Mathematics and Its Applications, 7E, Rosen.

### Class Protocol

Students are expected to attend class and be on time. Students are expected to bring all necessary course materials with them. In most instances, this included the textbook, paper, pencil/pen, completed homework. If an absence is anticipated, the student will contact the instructor via e-mail or phone call PRIOR to the absence, if at all possible. Positive participation is expected. Mistakes are to be expected, respected, inspected, and corrected. Respect will be shown at all times. (Instructor/student and student/student). Should you find it necessary to make or take a phone call or text, please step outside the classroom to do so.

### Grading

There will be four (4) exams and a comprehensive final exam. The exams will constitute 17% a piece of your course grade, homework is 15%, and the comprehensive final is 17%.

## Grading Scale

WSU uses a +/- grading scale for final grades and to calculate grade point averages. In this class, grades are assigned according to the following chart.

Percentages	Letter grade	Grade Points	Interpretation
90%-100%	A	4.00	<i>The A range denotes excellent performance.</i>
89%	A-	3.70	
88%	B+	3.30	
80%-87%	B	3.00	<i>The B range denotes good performance.</i>
79%	B-	2.70	
78%	C+	2.30	
70%-77%	C	2.00	<i>The C range denotes satisfactory</i>
69%	C-	1.70	
68%	D+	1.30	
60%-67%	D	1.00	<i>The D range denotes unsatisfactory</i>
59%	D-	0.70	
0%-58%	F	0.00	<i>F denotes failing performance.</i>

## Late Assignments

Late assignments are not accepted.

## Missed Exams

Missing exams is highly discouraged. Contact me before the exam, if possible, if you are ill or have a personal reason to miss the exam. Makeup exams will not be allowed unless the instructor finds the reason for missing an exam is adequate and sufficient documentation is provided; a note from a medical professional indicating a medical reason for an absence is usually sufficient justification for a makeup exam.

## Disabilities

If you have a physical, psychiatric/emotional, or learning disability that may impact on your ability to carry out assigned course work, I encourage you to contact the Office of Disability Services (DS). The office is located in Grace Wilkie Annex, room 150, (316) 978-3309 (voice/tty) (316-854-3032 videophone). DS will review your concerns and determine, with you, what academic accommodations are necessary and appropriate for you. All information and documentation of your disability is confidential and will not be released by DS without your written permission.

## Counseling & Testing

The WSU Counseling & Testing Center provides professional counseling services to students, faculty and staff; administers tests and offers test preparation workshops; and presents programs on topics promoting personal and professional growth. Services are low cost and confidential. They are located in room 320 of Grace Wilkie Hall, and their phone number is (316) 978-3440. The Counseling & Testing Center is open on all days that the University is officially open. If you have a mental health emergency during the times that the Counseling & Testing Center is not open, please call COMCARE Crisis Services at (316) 660-7500.

## Diversity and Inclusive

Wichita State University is committed to being an inclusive campus that reflects the evolving diversity of society. To further this goal, WSU does not discriminate in its programs and activities on the basis of race, religion, color, national origin, gender, age, sexual orientation, gender identity, gender expression, marital status, political affiliation, status as a veteran, genetic information or disability. The following person has been designated to handle inquiries regarding nondiscrimination policies: Executive Director, Office of Equal Opportunity, Wichita State University, 1845 Fairmount, Wichita KS 67260-0138; telephone (316) 978-3186.

## Intellectual Property

Wichita State University students are subject to Board of Regents and University policies regarding intellectual property rights. Any questions regarding these rights and any disputes that arise under these policies will be resolved by the President of the University, or the Presidents designee, and such decision will constitute the final decision.

## Shocker Alert System

Get the emergency information you need instantly and effortlessly! With the Shocker Alert System, we will contact you by email the moment there is an emergency or weather alert that affects the campus. Sign up at [www.wichita.edu/alert](http://www.wichita.edu/alert).

## Student Health Services

WSUs Student Health clinic is located in 209 Ahlberg Hall. Hours are 8:00am to 7:00pm (8:00 am to 5:00 pm on Fridays), though the clinic may be closed occasionally on Wednesdays from noon to 1:30pm. The telephone number is (316) 978-3620. In addition to outpatient and preventive care (including immunizations, a prescription service, and testing/counseling for sexually transmitted infections), Student Health can handle minor injuries. All services are confidential. For more information see [www.wichita.edu/studenthealth](http://www.wichita.edu/studenthealth).

## Title IX

Title IX of the Educational Amendments of 1972 prohibits discrimination based on sex in any educational institution that receives federal funding. Wichita State University does not tolerate sex discrimination of any kind including: sexual misconduct; sexual harassment; relationship/sexual violence and stalking. These incidents may interfere with or limit an individuals ability to benefit from or participate in the Universitys educational programs or activities. Students are asked to immediately report incidents to the University Police Department, (316) 978-3450 or the Title IX Coordinator (316) 978-5177. Students may also report incidents to an instructor, faculty or staff member, who are required by law to notify the Title IX Coordinator. If a student wishes to keep the information confidential, the student may speak with staff members of the Counseling and Testing Center (316) 978-3440 or Student Health Services (316)978-3620. For more information about Title IX, go to the Title IX page on WSU's website.

## Video and Audio Recording

Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Unless explicit permission is obtained from the instructor, recordings of lectures may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

## Measurable Student Learning Outcomes

Using evaluations based on homework and exams upon successful completing of this course students will be able to:

1. Demonstrate knowledge and fluency in Binary and n-ary Relations and their applications.
2. Draw and describe representations of relations and apply their operations.
3. Demonstrate knowledge and fluency Equivalence Relations and Partial Orderings.
4. Demonstrate knowledge and fluency in Graphy Theory, its models, and operations.
5. Draw and describe graphs and their connectivity properties.
6. Apply theorems on paths within graphs, including shortest path problems, Euler paths, Hamilton paths.
7. Demonstrate knowledge and fluency in Trees.
8. Represent various tree applications.
9. Apply tree traversals to move between different symbolic representations of mathematical expressions.
10. Demonstrate knowledge and fluency in Boolean Algebra.
11. Model computing with grammars, languages, Finite-State Machines, and Turing Machines.

## Homework

Due Jan 30

9.1(1, 5, 7, 11, 18, 27, 31be, 33, 35ef, 40, 41)

9.3(1, 3, 5, 7, 9, 13, 15b, 23, 25, 29)

9.4(1, 3, 5, 7, 17, 19abc, 21, 25ac, 27abcd)

Due Feb 6

9.5(1, 3, 7, 11, 13, 17, 23, 27, 33, 37)

9.6(3, 5, 9, 11, 15, 19, 21, 23ac, 33)

Due Feb 20

10.1(3, 5, 7, 9, 11, 15, 19, 21)

10.2(1, 3, 7, 9, 15, 17)

Due Feb 27

10.3(1, 3, 5, 7, 15, 17, 25, 35, 37, 39, 41, 43)

10.4(1, 2, 5, 11, 19, 21, 23, 27, 31)

Due Mar 6

10.5(1, 3, 5, 7, 11, 13, 15, 21, 23, 31, 35)

10.6(5, 7, 11, 25, 27)

Due Mar 27

11.1(1, 3, 5, 9, 17, 21, 23, 27, 31)

11.2(1-4, 7, 9, 11, 19ac, 23, 27, 33, 37c)

11.3(3, 7, 9, 10, 12, 13, 15, 17, 21, 23ac, 24ac)

Due Apr 3

12.1(1, 3, 7, 11, 15, 17, 19, 21, 27)

12.2(1, 3, 5, 7, 9, 11, 13, 15)

Due Apr 17

13.1(1, 3, 7, 11, 15ac, 17ac, 23)

13.2(1, 3, 7, 11, 17, 21)

Due Apr 24

13.3(7, 11, 17, 19, 21, 23, 27, 43, 47)

13.4(3ace, 5ace, 7ac, 13ab)

Due May 1

13.5(1, 3, 5, 7, 19, 20)