College of Central Florida

MAD2104 Discrete Mathematics (3 credits)

Section 01(MTWH 8:00AM- 9:50 AM) HYBRID-FLEX

Zoom Link: https://cfpatriots.zoom.us/j/7502071571

SUMMER A 2023

Instructor: Kirby Brown Office: 2-209
Phone: (352) 237-2111 (1245) E-mail : brownk@cf.edu

Office Hours

Monday	Tuesday	Wednesday	Thursday	Friday
1:00 PM-2:30 PM		1:00 AM -2:30PM		

TEXTBOOK: Discrete Mathematics and its Applications, 8th Edition, McGraw Hill

Author: Kenneth Rosen
ISBN: 978-1-259-67651-2
1-259-67651-X

Required Materials: A graphing calculator is needed for this course. I fully recommend the TI83/84 calculator

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DESCRIPTION: MAD2104 is a course in discrete mathematics where many different topics are covered such as mathematical logic, methods of proof in mathematics which includes proof by mathematical induction, recurrence relation, recursive definitions, basic set theory, simple graph theory, functions and relations including equivalence relations, counting principle, algorithms, congruence, sequences and summation, discrete probability and modular arithmetic.

PREREQUISITE MAC 1105 with a grade of "C" or better or a CLM score of at least 103

Homework: Homework will be assigned for each section covered in class. Each student is expected to complete their assignments. If a student encounters difficulties with a problem(s), then the **student should refer his or her problem (s) to the instructor during class time or visit the instructor during office hours or get additional help at the Math Center.**

The hours of the Math Center are listed as follows:

Math Center Hours (Room 7-106)

Monday	Tuesday	Wednesday	Thursday	Friday
8:00 am – 6:00 pm	8:00 am – 6:00 pm	8:00 am – 6:00 pm	8:00 am – 6:00 pm	8:00 am – 3:00 pm

EXAMS: Students are required to take all in class exams. **NO MAKE-UP EXAMS WILL BE GIVEN UNDER ANY CIRCUMSTANCES. STUDENTS MUST SHOW WORK ON THE EXAMS FOR EACH QUESTION IN ORDER TO RECEIVE FULL CREDIT**

THERE WILL BE THREE IN CLASS EXAMS AND A FINAL EXAM

The grading breakdown is weighted as follows: **Homework: 10%**
Exams : 60%
Final : 30%

*FINAL EXEMPTION FACTOR: **THERE WILL BE THREE IN CLASS EXAMS AND A FINAL EXAM. IF STUDENTS ARE SATISFIED WITH THE OVERALL AVERAGE OF THEIR THREE EXAMS, THEY CAN CHOOSE NOT TO TAKE THE FINAL EXAM AND WILL EARN THE EQUIVALENT LETTER GRADE THAT IS ALIGNED WITH THE OVERALL AVERAGE OF THE THREE EXAMS, OTHERWISE, THEIR AVERAGE WILL BE CALCULATED ON THE GRADING BREAK DOWN ABOVE.**

NOTE: THE FINAL EXAM MAY RELACE THE LOWEST GRADE ON THE IN-CLASS EXAMS

Grades: Grades are calculated based on the following procedure:

A	Excellent	90% and above	4.0 quality points
B+	Very Good	87%-89%	3.75 quality points
B	Good	80%-86%	3.0 quality points
C+	High Average	77%-79%	2.75 quality points
C	Average	70%-76%	2.0 quality points
D	Poor	60%-69%	1.0 quality points
F	Failure	59% and below	No quality points

NOTE: Homework will be given at the end of each zoom lectures. The homework will be selected exercises from the textbook. Every student should attempt the homework. Exams will be based off the homework

MAD2104 WEEKLY SCHEDULE

Week	Assignments	Comments
Week 1	Introduction Section 1.1-1.8, 2.1	**HOLIDAY: Tuesday, July 4 (Independence Day). College Closed**
Week 2	Sections 2.2, 2.3, 2.4, 2.5, 3.1	EXAM 1 covers up to Section 3.1
Week 3	**EXAM 1** Sections,3.2, 4.1, 4.2	
Week 4	Sections 4.3-4.6, 5.1-5.3, 6.1-6.3 **EXAM 2**	**EXAM 2 COVERS UP TO 6.3**
Week 5	Sections 6.4-6.5, 7.1-7.2, 9.1-9.3, 9.5, 10.1-10.3 **EXAM 3**	**EXAM 3 COVERS UP TO 10.3**
Week 6	FINAL EXAM	**Monday June 26, 8:00 AM-9:50AM**

THE FINAL EXAM WILL BE ON Monday June 26, 8:00AM -9:50AM

Disclaimer: The Instructor reserves the rights to make any changes to these policies and procedures as well as the course outline as deemed necessary.

College Policies –Summer 2023

Academic Integrity – Cheating and/or plagiarism will not be tolerated and may result in an "F" for the course as well as disciplinary action under the Code of Student Conduct. A student may be referred to an Academic Integrity Seminar. There will be a charge for this two-hour seminar, and attendance is required (see Student Handbook).

Access Services for Students with Disabilities – If you have a disability, serious medical condition or a learning disorder and want to request accommodations, it is your responsibility to register with the Office of Access Services and to provide verifiable documentation to Access Services as soon as possible. If eligible, Access Services will provide you with a notification of approved accommodations to give to your instructors at the beginning of the semester. For information see the Access Services webpage at http://www.cf.edu/departments/sa/ss/access/, contact access@cf.edu or call 352-854-2322, ext. 1580. Assistance for students is available at all CF locations, by appointment.

Classroom Decorum – Disruptive behavior will not be tolerated. Disruptive students will be asked to leave the classroom. Continuous disruptive behavior will result in withdrawal from

the course and disciplinary action under the Code of Student Conduct (see Student Handbook).
Also please go on canvas to see the withdrawal dates and other college policies

NOTE: IF BY CHANCE OF ANY UNEXPECTED EVENTS THAT THIS COURSE HAS TO CHANGE TO A FULLY REMOTE MODALITY, RANDOM DISCUSSION BASED ASSESSMENTS WILL BE CARRIED OUT THROUGHOUT THE SEMESTER PERTAINING TO EXAMS UNDER THE CONSTRAINT OF ACADEMIC INTEGRITY WHICH INCLUDES THE INSTRUCTOR ASKING STUDENTS FOR VERIFICATION OF SOLUTIONS TO EXAMS.
FAILURE TO SHOW AND EXPLAINED DETAILED SOLUTIONS ON EXAMS WILL RESULT IN NO CREDIT GIVEN. THIS COULD ALSO LEAD TO A FAILING GRADE FOR THE COURSE

NOTE: ALL EXAMS WILL BE TAKEN IN THE CLASSROOM IN ROOM 7-111 OR ON ZOOM IN A LIVE PROCTORED ENVIRONMENT USING A WEBCAM

MAD2104 Discrete Mathematics
Institutional Learning Outcomes and Course Objectives
Institutional Learning Outcomes

Learning Outcome	**Quiz**	**Exam**	**Project**	**Classroom Activity**
Quantitative and Analytical Reasoning: The student will understand and apply mathematical and scientific principles and methods.				
1. Perform accurate computations using order of operations with and without technology.	x	x		x
2. Identify and organize relevant information and complete the solution of an applied problem.	x	x		x
3. Interpret and communicate understanding of visual representations of data.	x	x		x
4. Demonstrate mathematical number sense and unit sense.	x	x		x

MAD2104 Learning Objectives:

Student Learning Outcomes: After completing this course the student will be able to**:**

(1) Identify statements. Interpret tables of truth values

(2) Write proofs by contradiction. Able to write direct and undirect proofs

(3) Perform modular arithmetic. Applying elementary number theory properties involving divisibility. Constructing proofs using mathematical induction

(4) Set notation, intersection, and union of sets, complements, Cartesian products, power sets. Using Venn diagrams to solve certain problems

(5) Sequences, recursions, functions including 1 to 1 and onto.

(6) Solving problems using counting principles including permutation and combination.

(7) Determining the number of times that a given statement will be executed depending on an algorithm

(8) Computing a value that a function call returns using pseudocode

(9) Understands the concepts of prime numbers and greatest common divisor

(10)Learn Sequences and summation

(11) Understand Relations including equivalence relation

(12)The principle of Big O notation and the growth of function

(13) Understand basic probability concept.

(14) Understands the basic concepts of graph theory

(15) Learn and apply the principle of congruence