Wheeling Jesuit University, Department of Business and Engineering
Syllabus; MATH 235; Discrete Math; Spring 2019

Instructor: Robert Yahn
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Course description: This course covers sequences, sets and relations, logic and truth tables, Boolean algebra, logic gates, combinatorics, probability, graph theory, algorithms, matrix algebra and determinants. Prerequisite: MATH 191.

Textbook: Discrete Mathematics, Ensley and Crawley, Wiley (ISBN 978-0-471-47602-3)

Course Objective: For students to discover the world of discrete mathematics and be able to solve problems by applying the tools of discrete mathematics which include: logic, set theory, number theory, combinatorics, graph theory, algorithms, and information theory.

Attendance Policy: none. However, when you do attend class, please do NOT use your cell phone during class.

Last Date to Drop the Course: The last day of the Add/Drop Period for this session is Friday, 11 Jan 2019. The last day to withdraw from this course with a grade of a W is Friday, 8 Feb 2019.

Academic Integrity Statement: Students are advised that WJU's Academic Integrity Policy will strictly be enforced in this course (see www.wju.edu/studenthandbook). Questions regarding the policy may be directed to the Office of the Academic Vice-President

- Collaboration is encouraged for all out-of-class assignments
- In-class evaluations are individual effort … open textbook (Stewart) and a calculator

Official E-mail: An official WJU e-mail is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this WJU e-mail address.

The Academic Resource Center: The Academic Resource Center (ARC) is a totally free academic-support service available to all enrolled Wheeling Jesuit University students and staffed almost exclusively by WJU students recommended for employment by WJU faculty. The ARC is located in Bishop Hodges Library and is open five days a week:

Sundays 6:00-8:00 p.m.
Mondays-Thursdays 1:00-9:00 p.m.

Please visit the ARC's website (readily accessible on the Cardinal homepage under "Quick Links" or as the first listing under "Student Services") www.wju.edu/arc to learn about the ARC's services (emphasizing writing, math, and the sciences) and to schedule appointments.

Disability Statement: Wheeling Jesuit University offers students with documented disabilities individual accommodations on a case-by case basis with confidentiality in compliance with the American with Disabilities Act and Section 504 of the Rehabilitation Act of 1973.

In order to receive academic or physical accommodations, students with disabilities must provide current (within three years) and comprehensive documentation concerning the nature and extent of the disability and communicate their needs to the Disability Services Director, located in Ignatius Hall Room G 24 or call 304-243-4484. Students are required to meet with the director to develop accommodation plans that they will present to their course instructors at the beginning of each semester. Students with disabilities that require specific housing accommodations must contact both the Director of Residence Life and the Disability Services Director.

Ultimately, all students with disabilities are responsible for their own academic achievement. They must attend classes, complete course assignments, and fulfill all university requirements for their chosen field of study. It is up to students with disabilities to seek out available assistance on campus and to utilize individualized accommodations that promote academic success.

Title IX Statement: Wheeling Jesuit University seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment, misconduct, or assault we encourage you to report this. If you report this to a faculty member, she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at WJU, please go to http://wju.edu/titleix/

Campus Life Policies: All Campus Life Policies apply. Specifically, the Campus Life: Academic Dishonesty & Integrity Policy (http://www.wju.edu/about/hr/policies/cl_academicdishonesty.asp).

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Course grading:	Out-of-class assignments	10%
	Exams (6 x 10% each)	60%
	Final Exam	30%

Course Grade Assignments:

A	93% and above	C+	77-79%
A-	90-92%	C	73-76%
B+	87-89%	C-	70-72%
B	83-86%	D+	67-69%
B-	80-82%	D	60-66%
		F	59% and below

Office hours: by appointment.

My class schedule:

Course	Monday	Tuesday	Wednesday	Thursday	Friday
MATH 192, Acker 205	1000-1050	0930-1020	1000-1050		1000-1050
MATH 235, Acker 205	1100-1150		1100-1150		1100-1150
ENGR 475, Acker 205	1300-1350		1300-1350		1300-1350
ENGR 476, Acker 205		1800-1915		1800-1915	
BUSN 410, Acker 205		1930-2045		1930-2045	
MATH 482, Donahue 112					1400-1550

DATE	TOPIC	Out-of-Class Assignments	
7 Jan, M	Introductions	-	Read E&C 1.1
9 Jan, W	First Examples	1	1.1: 3 and 4 Read E&C 1.2
11 Jan, F	Number Puzzles and Sequences	2	1.2: 1, 2, 7 and 9 Read E&C 1.3
14 Jan, M	Truth-Tellers, Liars, and Propositional Logic	3 E	1.3: 1, 4 and 7 Read E&C 1.4
16 Jan, W	Predicates	4	1.4: Read E&C 1.5
18 Jan, F	Implications	5	1.5: Read E&C 1.6
21 Jan, M	Validity of Arguments	6	1.6 Review E&C CH1
23 Jan, W	EXAM #1	-	Read &C 2.1
25 Jan, F	Mathematical Writing	7	2.1: Read E&C 2.2
28 Jan, M	Proofs About Numbers	8	2.2 Read E&C 2.3
30 Jan, W	Mathematical Induction	9	2.3: Read E&C 2.4
1 Feb, F	More About Mathematical Induction	10	2.4: Read E&C 2.5
4 Feb, M	Contradiction and the Pigeonhole Principle	11	2.5: Read E&C 2.6
6 Feb, W	Representations of Numbers	12	Read Stewart 6.5
8 Feb, F	Cryptology	13	6.5: Review E&C CH2
11 Feb, M	EXAM #2	-	Read E&C 3.1
13 Feb, W	Set Definitions and Operations	14	3.1: Read E&C 3.2
15 Feb, F	More Operations on Sets	15	3.2: Read E&C 3.3
18 Feb, M	Proving Set Properties	16	3.3: Read E&C 3.4
20 Feb, W	Logic Circuits	17	Review E&C CH3

DATE	TOPIC	Out-of-Class Assignments	
22 Feb, F	EXAM #3	-	Read E&C 4.1
4 Mar, M	Definitions, Diagrams and Inverses	18	4.1: Read E&C 4.2
6 Mar, W	The Composition Operation	19	4.2: Read E&C 4.3
8 Mar, F	Properties of Functions and Set Cardinality	20	4.3: Read E&C 4.4
11 Mar, M	Properties of Relations	21	4.4: Read E&C 4.5
13 Mar, W	Equivalence Relations	22	4.5: Read E&C 4.6
15 Mar, F	Numerical Functions in Discrete Math	23	4.6: Review CH4
18 Mar, M	EXAM #4	-	Read E&C 5.1
20 Mar, W	Introduction	24	5.1: Read E&C 5.2
22 Mar, F	Basic Rules for Counting	25	5.2: Read E&C 5.3
25 Mar, M	Combinations and the Binomial Theory	26	5.3: Read 5.4
27 Mar, W	Binary Sequences	27	5.4: Read E&C 5.5
29 Mar, F	Recursive Counting	28	5.5: Read E&C 5.6
1 Apr, M	Solving Recurrence Relations	29	5.6: Review E&C CH5
3 Apr, W	EXAM #5	-	Read E&C 6.1
5 Apr, F	Introduction	30	6.1: Read E&C 6.2
8 Apr, M	Sum and Product Rules for Probability	31	6.2: Read E&C 6.3
10 Apr, W	Probability in Games of Chance	32	6.3: Read E&C 6.4
12 Apr, F	Expected Value in Games of Chance	33	6.4: Read E&C 6.6
15 Apr, M	Matrices and Markov Chains	34	6.6: Review E&C CH6
17 Apr, W	EXAM #6	-	Read E&C 7.1
19 Apr, F	Graph Theory	35	7.1: Read E&C 7.2
22-23 Apr	Easter Break	-	
24 Apr W	Proofs About Graphs and Trees	36	7.2 Read E&C 7.5
26 Apr, F	Graphs in Puzzles and Games	37	7.5: Review E&C
30 Apr, T	Final Exam	-	1400-1630