

## MAD 3105 Schedule. Spring 2018 updated 1/01/18

This schedule may be updated as the semester progresses.

Check the announcements on the CANVAS course website regularly for notice of changes to the schedule.

MAD 3105 Course Notes (courtesy of Dr. Penelope Kirby and Dr. John Bryant)

IF THE LINKS ARE NOT RESPONDING PROPERLY, VISIT: <http://www.math.fsu.edu/~pkirby/mad3105/SlideShow/>

**Or try emptying your Cache before clicking on the links.**

- [Course Notes Title Page](#) (.pdf file)
- [Entire Set of Course Notes](#) (8.5 MB .pdf file)
- [Link to MAD 2104 Discrete Mathematics I Materials](#) (.pdf file, courtesy of Dr. Kirby and Dr. Bryant)
- **Course Videos:** Available on the course CANVAS site, under the “TEGRITY” link. (by Dr. Cobb)

Week	Files to Download & Read This Week	Due Dates for this week
Week 1 Jan 08-Jan12	<ul style="list-style-type: none"> <li>• First Day Attendance (Assignment 00)</li> <li>• Course Syllabus &amp; Schedule</li> <li>• <a href="#">Student Responsibilities &amp; Proctor Forms</a> (Office of Distance Learning Website) <a href="http://distance.fsu.edu/student-responsibilities">http://distance.fsu.edu/student-responsibilities</a></li> <li>• Guide to Studying Discrete Mathematics</li> <li>• Submitting Assignment Files</li> <li>• Important Topics from MAD 2104 (Discrete Mathematics I)</li> <li>• <a href="#">Course Notes 1.1 Relations and Their Properties</a></li> <li>• Assignment 01 (Due: Thursday 1/18)</li> </ul>	<ul style="list-style-type: none"> <li>• First Day Attendance Check: Submit Assignment 00 by Wednesday 9AM EST, 1/10/18</li> <li>• <a href="#">Online Proctor Designation Form:</a> Submit Online Form by 1/19/18 <a href="http://distance.fsu.edu/student-responsibilities">http://distance.fsu.edu/student-responsibilities</a></li> </ul>
Week 2 Jan 15 - 19	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 1.2 Closure of Relations</a></li> <li>Assignment 02 (Due: Thursday 1/25)</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment 01 due Thursday, 1/18</li> </ul>
Week 3 Jan 22 - 26	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 1.3 Equivalence Relations</a></li> <li>Assignment 03 (Due: Thursday 2/01)</li> </ul>	<ul style="list-style-type: none"> <li>• MLK Holiday: Monday 1/15</li> <li>• Assignment 02 due Thursday 1/25</li> </ul>
Week 4 Jan 29 – Feb 02	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 1.4 Partial Orderings</a></li> <li>Assignment 04 (Due: Thursday 2/08)</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment 03 due Thursday 2/01</li> </ul>
Week 5 Feb 05 - 09	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 2.1 Introduction to Graphs and Graph Isomorphism</a></li> <li>• Assignment 05 (Due: Thursday 2/15)</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment 4 due Thursday 2/08</li> <li>• <a href="#">Sign up for day/time for Test 1</a> (if you have not already) <a href="https://www.registerblast.com/fsu/Exam">https://www.registerblast.com/fsu/Exam</a></li> </ul>
Week 6 Feb 12 - 16	<ul style="list-style-type: none"> <li>• <b>Test 1 Review</b></li> <li>• <b>Solutions for Test 1 Review</b></li> </ul>	<ul style="list-style-type: none"> <li>• Assignment 5 due Thursday 2/15</li> </ul>
Week 7 Feb 19 - 24	<ul style="list-style-type: none"> <li>• <b>Take Test 1 (Wednesday – Saturday)</b></li> <li>• <a href="#">Course Notes 2.2 Connectivity</a></li> <li>• <a href="#">Course Notes 2.3 Euler, Hamilton Paths</a></li> <li>• Assignment 6 (Due: Thursday 3/01)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Test 1 Window: Wed 2/21 – Sat 2/24</b></li> <li>• No Assignment due Thursday 2/22</li> </ul>

## MAD 3105 Assignment Schedule Con't. Spring 2018

This assignment schedule may be updated as the semester progresses.  
Check the announcements on the Blackboard course website regularly for notice of changes to the schedule.

Week	Files to Download & Read This Week	Due Dates for this week
Week 8 Feb 26 – Mar 2	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 2.4 Introduction to Trees</a></li> <li>• <a href="#">Course Notes 2.5 Spanning Trees</a></li> </ul> Assignment 7 (Due: Thursday 3/08)	<ul style="list-style-type: none"> <li>• Assignment 6 due Thursday 3/01</li> </ul>
Week 9 Mar 05 – 09	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 2.6 Search and Decision Trees</a></li> <li>• <a href="#">Course Notes 2.7 Tree Traversal</a></li> </ul> Assignment 8 (Due: Thursday 3/22)	<ul style="list-style-type: none"> <li>• Assignment 7 due Thursday 3/08</li> </ul>
Week 10 Mar 12 - 16	<ul style="list-style-type: none"> <li>• <b>Spring Break</b></li> <li>• (No classes: Campus Offices Closed)</li> </ul>	<ul style="list-style-type: none"> <li>• No Assignment due Thursday 3/15</li> <li>• Assignment 8 due after Spring Break</li> </ul>
Week 11 Mar 19 - 23	<ul style="list-style-type: none"> <li>• <a href="#">Course Notes 3.1 Boolean Functions</a></li> <li>• <a href="#">Course Notes 3.2 Representing Boolean Functions</a></li> </ul> Assignment 9 (Due: Thursday 3/29)	<ul style="list-style-type: none"> <li>• Assignment 8 due Thursday 3/22</li> <li>• <a href="#">Sign up for day/time to take Test 2</a> (if you have not already) <a href="https://www.registerblast.com/fsu/Exam">https://www.registerblast.com/fsu/Exam</a></li> </ul>
Week 12 Mar 26 - 30	<ul style="list-style-type: none"> <li>• <b>Test 2 Review</b></li> <li>• <b>Solutions for Test 2 Review</b></li> </ul>	<ul style="list-style-type: none"> <li>• Assignment 9 due Thursday 3/29</li> </ul>
Week 13 Apr 02 - 06	<ul style="list-style-type: none"> <li>• <b>Take Test 2 (Wednesday – Saturday)</b></li> <li>• <a href="#">Course Notes 3.3 Abstract Boolean Algebras</a></li> </ul> Assignment 10 (Due: Thursday 4/12)	<ul style="list-style-type: none"> <li>• <b>Test 2 Window: Wed 4/04 – Sat 4/07</b></li> <li>• No Assignment due Thursday 4/05</li> </ul>
Week 14 Apr 09 - 13	<ul style="list-style-type: none"> <li>• Continue to work on Assignment 10</li> <li>• <a href="#">Course Notes 3.4 Logic Gates</a></li> <li>• <a href="#">Course Notes 3.5 Minimizing Circuits</a></li> </ul> Assignment 11 (Due: Thursday 4/19)	<ul style="list-style-type: none"> <li>• Assignment 10 due Thursday 4/12</li> </ul>
Week 15 Apr 16 - 20	<ul style="list-style-type: none"> <li>• Assignment 11 (Due: Thursday 4/19)</li> <li>• <b>Final Exam (Last Test) Review</b></li> <li>• <b>Solutions for Final Exam Review</b></li> </ul>	<ul style="list-style-type: none"> <li>• Assignment 11 due Thursday 4/19</li> <li>• <a href="#">Sign up for day/time to take Final Exam</a> (if you have not already) <a href="https://www.registerblast.com/fsu/Exam">https://www.registerblast.com/fsu/Exam</a></li> </ul>
Week 16 Apr 23 – 27 Final Exam Week Apr 28 – May 1	<ul style="list-style-type: none"> <li>• <b>Take Final Exam (Last Test):</b> <b>Saturday - Tuesday</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>FINAL Exam (Last Test) Window:</b> <b>Saturday 4/28 – Tuesday 5/01</b></li> </ul>

**Suggested Reading & Practice Exercises**  
**(Not to Turn In, but Graded Assignments are Similar)**  
**Discrete Mathematics and Its Applications by Rosen (7th ed) & Online Course Notes**

**ASSIGNMENT 1 MATERIAL: RELATIONS & THEIR PROPERTIES**

(See Canvas for the Written (Graded) Assignment)

Read:	Online Course Notes 1.1: Relations & Their Properties Rosen Section 9.1 pages 573 – 581 Rosen Section 9.3 pages 591 – 596
Practice: (Not Graded)	Rosen Section 9.1: p. 581 #1-35 odd, 41-45odd, 49-57odd Rosen Section 9.3: p. 596 #1-7 odd, 11-15odd, 14, 19, 27, 31, 33

**ASSIGNMENT 2 MATERIAL: CLOSURE OF RELATIONS**

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 1.2: Closure of Relations Rosen Section 9.4 pages 597 – 603
Practice: (Not Graded)	Rosen Section 9.4: p.606 #1-15odd, 19, 21, 23, 29, 35

**ASSIGNMENT 3 MATERIAL: EQUIVALENCE RELATIONS**

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 1.3: Equivalence Relations Rosen Section 9.5 pages 607 – 614
Practice: (Not Graded)	Rosen Section 9.5: p.615 #1-47 odd, 55, 57, 63

**ASSIGNMENT 4 MATERIAL: PARTIAL ORDERINGS**

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 1.4: Partial Orderings Rosen Section 9.6 pages 618 – 629
Practice: (Not Graded)	Rosen Section 9.6: p.630 #1-27odd, 33-35odd, 39-45odd, 51

### Suggested Reading & Practice Exercises (con't)

#### ASSIGNMENT 5 MATERIAL: INTRODUCTION TO GRAPHS & GRAPH ISOMORPHISM

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 2.1: Introduction to Graphs & Graph Isomorphism Rosen Section 10.1 pages 641 – 644 (can skip Graphs Models) Rosen Section 10.2 pages 651 – 665 Rosen Section 10.3 pages 668 – 675
Practice: (Not Graded)	Section 10.1: p. 649 #1-9 odd, 13 Section 10.1: p. 649. (Skip Graphs Models) Define the graphs in exercises 3 – 9 by giving the vertex set, and edge set, and where necessary, a function from the edge set to an appropriate form (set or ordered pair) of pairs of vertices.  Section 10.2: p. 665. #1-4, 5-11 odd, 12, 20, 21-25 odd, 26, 29-37 odd, 45-49 odd, 61 (see definition of the complementary graph in #59)  Section 10.3: p. 675 #5, 13, 23, 25, 35-49 odd, 55-59 odd, 65

**\*\*EXAM 1: COVERS ASSIGNMENT 1, 2, 3, 4, 5 MATERIAL\*\***

#### ASSIGNMENT 6 MATERIAL: CONNECTIVITY & EULER & HAMILTON CIRCUITS

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 2.2: Connectivity Rosen Section 10.4: p. 678 – 689, definitions 1 – 5, examples 1,4,5,7,10-11,13-15
Practice: (Not Graded)	Section 10.4: p. 689 #1-5 odd, 6, 11, 15, 19, 25, 33, 45
Read:	Online Course Notes 2.3: Euler & Hamilton Circuits Rosen Section 10.5: p. 693 – 703, definitions 1-2, Theorems 1-4, Examples 1-7
Practice:	Section 10.5: p.703 #1-15 odd, 19-27odd, 31-47odd

## Suggested Reading & Practice Exercises (con't)

### ASSIGNMENT 7 MATERIAL: INTRODUCTION TO TREES & SPANNING SETS

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 2.4: Introduction to Trees Rosen Section 11.1: p. 745 – 755, examples 1-4, 7-11
Practice: (Not Graded)	Section 11.1: p. 755 – 757 #1-19 odd, 27, 28, 29, 31, 47
Read:	Online Course Notes 2.5: Spanning Trees Rosen Section 11.4: p. 785-787, examples 1,2 (Skip p. 787-795 from Depth-First Search through Example 10 Web Spiders)
Practice: (Not Graded)	Section 11.4: p. 795-797 #1, 5-11 odd, 33, 53 (“distance” definition is just before problem 53)

### ASSIGNMENT 8 MATERIAL: SEARCH AND DECISION TREES & TREE TRAVERSAL

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 2.6: Search and Decision Trees Rosen Section 11.2: p. 757-769, examples 1-3 (Skip p.762-769 from Prefix Codes through example 8 Game Trees)
Practice: (Not Graded)	Section 11.2: p. 769-772 #1 – 11 odd
Read:	Online Course Notes 2.7: Tree Traversal Rosen Section 11.3: p. 772-782, definitions 1-3, examples 1-10
Practice: (Not Graded)	Section 11.3: p. 782-785 #1-19 odd, 23, 25

## Suggested Reading & Practice Exercises (con't)

### ASSIGNMENT 9 MATERIAL: BOOLEAN FUNCTIONS & REPRESENTING BOOLEAN FUNCTIONS

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 3.1: Boolean Functions Rosen Section 12.1: p. 811-816, examples 1-9 (Skip p. 817 Abstract Definition of a Boolean Algebra, to be covered in the next assignment)
Practice: (Not Graded)	Section 12.1: p. 818-819 #1, 5, 9, 13, 25, 27
Read:	Online Course Notes 3.2: Representing Boolean Functions Rosen Section 12.2: p. 819-821, examples 1 -3
Practice: (Not Graded)	Section 12.2: p. 822 #1 – 19 odd

**\*\*EXAM 2: COVERS ASSIGNMENT 6, 7, 8, 9 MATERIAL \*\***

### ASSIGNMENT 10 MATERIAL: ABSTRACT BOOLEAN ALGEBRAS

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 3.1: Abstract Boolean Algebras (Through Section 3.8 Proof of DeMorgan's Law, through page 130). Sections 3.9-3.14 will be covered in the next assignment. Rosen Section 12.1 p. 814-817
Practice: (Not Graded)	Rosen Section 12.1: p. 818 – 819 #11, 35, 37, 39, 41. Assume the variables may be from <i>any abstract Boolean algebra</i> ; <b>do not use a table of values.</b>  Online Course Notes: Through Section 3.8, page 130, exercises

### ASSIGNMENT 10 MATERIAL Con't: MORE ABOUT ABSTRACT BOOLEAN ALGEBRAS

Read:	Online Course Notes 3.3: Abstract Boolean Algebras (Sections 3.9-3.14) Rosen Section 12.1 p. 817
Practice: (Not Graded)	Online Course Notes: Sections 3.9-3.14 exercises

### **Suggested Reading & Practice Exercises (con't)**

#### **ASSIGNMENT 11 MATERIAL: LOGIC GATES & MINIMIZING CIRCUITS**

(See Canvas for the Written (graded) Assignment)

Read:	Online Course Notes 3.4: Logic Gates Rosen Section 12.3: p. 822-827, examples 1-3
Practice: (Not Graded)	Section 12.3: p. 827-828, #1, 3, 5, 9, 15, 17
Read:	Online Course Notes: 3.5: Minimizing Circuits Rosen Section 12.4: p. 828-841, examples 1-6, 8-10
Practice: (Not Graded)	Section 12.4: p. 841-843 #1-9 odd, 13, 15, 23 – 29 odd

**\*\*FINAL EXAM: COVERS ASSIGNMENT 1 – 11 MATERIAL \*\***