

Instructor: Dr. Paul O. Enersen      Office: SM 219  
 e-mail: paul.enersen@smsu.edu

Text:      A Transition to Advanced Mathematics, 7<sup>th</sup>. Ed., Smith, Eggen, & St. Andre

Grading:      Participation:      100 points  
                  Exams:                              4 @ 100 points each  
                  Total:                                      500 points

Tentative Schedule:

| <u>Date</u> | <u>Section</u>                    | <u>Exercises</u>                     |
|-------------|-----------------------------------|--------------------------------------|
| Jan. 10     | Preface to the Student            |                                      |
| 12          | 1.1 Propositions & Connectives    | p. 7: 1-13                           |
| 14          | 1.2 Conditionals & Biconditionals | p. 15: 1-17                          |
| 17          | MLK Day                           |                                      |
| 19          | 1.3 Quantifiers                   | p. 25: 1e-o, 2e-o, 6, 8, 9, 10, 12   |
| 21          |                                   |                                      |
| 24          | 1.4 Basic Proof Methods I         | p. 37: 1, 5, 8, 9ab, 11              |
| 26          | 1.5 Basic Proof Methods II        | p. 46: 3bc, 4a, 6cd, 7b, 12          |
| 28          |                                   |                                      |
| 31          |                                   |                                      |
| Feb. 2      | 1.6 Proofs Involving Quantifiers  | p. 57: 1, 4, 6e-h, 7                 |
| 4           | 1.7 Additional Examples of Proofs | p. 65: 2ab, 4a, 5, 13, 16, 23        |
| 7           |                                   |                                      |
| 9           | Exam I                            |                                      |
| 11          | 2.1 Basic Concepts of Set Theory  | p. 77: 1-6, 14-17, 19                |
| 14          | 2.2 Set Operations                | p. 86: 1-11, 13, 16, 19              |
| 16          | 2.3 Extended Set Operations ...   | p. 96: 1, 2, 6-8, 11, 12, 17, 18     |
| 18          |                                   |                                      |
| 21          | President's Day                   |                                      |
| 23          | 2.4 Mathematical Induction        | p. 109: 6bdgh, 7abdefjk, 8bc, 13     |
| 25          |                                   |                                      |
| 28          | 2.5 Equivalent Forms of Induction | p. 120: 2, 3a, 5b, 6b, 11, 13        |
| Mar. 2      | 2.6 Principles of Counting        | p. 131: 1-3, 6-9, 15, 16, 18, 19, 24 |
| 4           | No class                          |                                      |

→→Spring Break→→

| <u>Date</u> | <u>Section</u>                        | <u>Exercises</u>            |
|-------------|---------------------------------------|-----------------------------|
|             | 14                                    |                             |
|             | 16 Exam II                            |                             |
|             | 18 3.1 Cartesian Products & Relations | p. 144: 1-7,9,15            |
|             | 21 3.2 Equivalence Relations          | p. 153: 1-5,7-12,19         |
|             | 23 3.3 Partitions                     | p. 161: 2-6,8,9,15          |
|             | 25                                    |                             |
|             | 28 3.4 Ordering Relations             | p. 170: 1,2,6,9,10,13,15,20 |
|             | 30 Advising Day                       |                             |
| Apr. 1      | 3.5 Graphs                            | p. 181: 1-8,15              |
|             | 4                                     |                             |
|             | 6 Exam III                            |                             |
|             | 8                                     |                             |
|             | 11 4.1 Functions as Relations         | p. 191: 1-4,6,7,11,12,17,19 |
|             | 13 4.2 Constructions of Functions     | p. 202: 1-3,5,7-9,14,20     |
|             | 15                                    |                             |
|             | 18 4.3 Functions - Onto, One-to-One   | p. 210: 1-6,9,11,13,14      |
|             | 20 4.4 One-to-One Correspondences ... | p. 218: 1-3,7,9,10          |
|             | 22                                    |                             |
|             | 25 4.5 Images of Sets                 | p. 223: 1-6,10,18           |
|             | 27 4.6 Sequences                      | p. 230: 1-3,5,10            |
|             | 29                                    |                             |
| May 5       | Exam IV 2:00 - 3:50                   |                             |