

# M118 Finite Mathematics

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**Time and Location:** M – W – Th: 6:30 – 8:30, Hawthorn 416  
**Office hours:** M – W – Th: 6:00 – 6:30, and by appointment

**Textbook:** Finite Mathematics by Lial/Greenwell/Ritchey 9th ed.  
**Grading:** There will be two tests (20% each), a midterm (30%) and a final exam (30%).

## Important Dates (subject to change – please come to class and listen for announcements):

| Week | Date   | Day       |            | Section Covered  |
|------|--------|-----------|------------|--|
| 1    | May 12 | Monday    | 7.1<br>7.2 | P350:11,13,15,17,21,23,25,27,29,31,33,35,37,39,43,45,53<br>P360: 21,23,25,27,39,41,43,47,55      |
|      | May 14 | Wednesday | 7.3<br>7.4 | P371: 13a,19,21,23,25,27,29,31,33,35,37,39<br>P382: 3,5,9,11,13,15,17,19,25,29,55,57,65,71,73,77 |
|      | May 15 | Thursday  | 7.5        | P401:1,5,7,9,31,33,39,45,47,51,53,55,57,61,63,71   |
| 2    | May 19 | Monday    | 7.6        | P414:9,13,15,19,21,23,25,32,37   |
|      | May 21 | Wednesday |            | Review and Test 1  |
|      | May 23 | Thursday  | 8.1<br>8.2 | P439:1,5,13,15,21,23,29,33,35,37,47<br>P449:3,5,17,19,21,23,29,33,35,37,43,45                    |
| 3    | May 26 | Monday    |            | Memorial Day   |
|      | May 28 | Wednesday | 8.3        | P463:1,3,5,7,21,46,47,48,51  |
|      | May 29 | Thursday  |            | Review   |
| 4    | Jun 2  | Monday    | 8.4        | P473:1,3,5,7,11,29,33,37,51,53,59,61   |
|      | Jun 4  | Wednesday |            | Review and MIDTERM   |
|      | Jun 5  | Thursday  | 2.1<br>2.2 | P65:1,3,5,13,15,23,25,27,31,37<br>P80:3,7,11,13,15,17,19,21,23,25,27,29                          |
| 5    | Jun 9  | Monday    | 2.3<br>2.4 | P92: 15,17,19,21,27,31,39a,45abc<br>P103:3,5, 15,17,19,23  |
|      | Jun 11 | Wednesday | 2.5        | P116:1, 3,11,13,15   |
|      | Jun 12 | Thursday  |            | Review   |
| 6    | Jun 16 | Monday    | 3.1<br>3.2 | P152: 3b, 5bd, 7, 9, 13<br>P160:11ab,17,21,23,25   |
|      | Jun 18 | Wednesday | 3.3        | P166:25,29,33  |
|      | Jun 19 | Thursday  |            | Review and Test 2  |
| 7    | Jun 23 | Monday    | 10.1       | P592: 11,29,31   |
|      | Jun 25 | Wednesday | 10.2       | P574:1, 3,5,7,9,15,25,35   |
|      | Jun 26 | Thursday  |            | Review and Final exam  |

As a general rule, NO make-up tests will be given. An exception will be made in an extreme emergency, but only if a student can produce some evidence of the emergency. If at all possible, call the math office before the exam and leave a message with the administrator. Homework is a crucial part of the course and will be assigned, but not collected. The tests will be based on the homework questions. Most of the answers are provided in the back of the book. The correct answer is not as important as how you get there and the understanding and justification of each step. Practice writing complete solutions for your homework, as this is what is expected on tests. A lot of homework problems will be assigned, but additionally working out all odd-numbered questions of each covered section is strongly recommended.

### **Objectives:**

Finite Mathematics covers set theory, linear systems, matrices and determinants, Markov chains, probability, linear programming, and applications to problems from business and the social sciences. A major goal is to develop the competency of mathematical problem solving in business and social sciences. Upon finishing this course, you will be able to solve problems such as:

Cost Control An appliance repair shop has 5 vacuum cleaners, 12 TV sets, and 18 VCRs to be repaired. The store employs two part-time repairmen. One repairman can repair one vacuum cleaner, two TV sets and six VCRs in 1 week, while the second repairmen can repair one vacuum cleaner, two TV sets and six VCRs in one week. The first employee is paid \$250 a week and the second employee is paid \$220 a week. To minimize the cost, how many weeks should each of the two repairmen be employed?

Family: What is the probability that a family with exactly 6 children will have 2 boys and 4 girls?

Roulette: If a gambler plays the number 15 for 200 consecutive times on roulette, how much is s/he expected to win/lose?

**Expectations:** Read each section carefully - work as many exercises as you can (even those without the answers in the back). You are encouraged to work with other students. You may find that the actual amount of homework you do is more or less than other students. On average, a rule of thumb is that you should expect to spend at least three to four times as much time studying for a college level math class as in class sessions. Since this is a summer session (twice as fast) we are spending 6 hours in class sessions per week which translates to 18 – 24 hours of studying outside the class working on this material.

You are encouraged to ask questions, and to participate in class activities as much as possible to make the learning process customized to your taste. It is up to you to make sure that I repeat and explain everything in detail --- **by asking questions in class.**

**Prerequisite:** Two years of high school algebra or successfully finished M014 (basic algebra).

### **Prerequisites/Placement Test**

All incoming (new) students should take the Mathematics Placement Test. Placement testing and counseling is available in HH108. Please call 219-980-6601 to schedule an appointment. The test helps to determine whether a student takes a math refresher course, a developmental course M007 or M014, or some other course offered by the Department of Mathematics and Actuarial Sciences.

Students in college-level mathematics courses are generally assumed to have completed two years of high school algebra. Those unable to do mathematics at this level should begin with either a math refresher course, M007 (elementary algebra), or M014 (basic algebra).

**Math Lab:** Located at Hawthorn Hall 436 (free tutoring, no appointment is needed). Check operating hours at <http://www.iun.edu/~math/mlab.shtml>

### **Calculator:**

Scientific calculator, or graphing calculator (keys:  $nCr$  and  $!$ ) is strongly recommended for the class (TI83 or TI-30). Use of cell phone calculators during exams is prohibited. Recommended: TI-30 series (or a TI-83 graphing calculator).

### **Other Class info:**

In case of absence check [www.iun.edu/~mathiho/](http://www.iun.edu/~mathiho/) for class info., the latest homework, practice tests, class announcements...

If you need assistance with a learning, physical or psychological disability that may affect your academic progress, I encourage you to contact the Disability Services Coordinator at 219-980-6943/Hawthorn Hall 235.