Syllabus for MATH 373-01
Finite Math, Fall 2015

Professor: Dr. James Rohal

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Office Hours:	See `http://jamesrohal.com/schedule/`

Description: An introduction to linear algebra, linear programming, mathematics of finance, counting techniques, probability, and elementary logic.

Broadly, this course is designed to do two things: introduce students to topics of upper-level mathematics courses, and expose them to formal reasoning/logic. Our central goal is to develop correct reasoning that will later be applied to other mathematical settings, and this requires practice (and some struggle!). The topics themselves, while important and interesting, play a secondary role to this goal.

Prerequisite: Completion of MATH 145 or Math ACT 24 or SAT equivalent.

Course Objectives: At the completion of this course, students will be able to:

1) recognize formal statements, determine logical equivalence of statements, apply rules of inference to form valid arguments,

2) perform the basic matrix operations and solve matrix equations using matrix inverses and row-reduction,

3) form coefficient and augmented matrices, row-reduce matrices,

4) apply matrices to solve a variety of applications from traffic control to economics,

5) use linear programming to minimize objective functions subject to a variety of types of constraints,

6) apply geometric sequences and series to study interest and financial problems,

7) develop facility with basic set operations and counting principles, including permutations and combinations,

8) apply set operations and counting to develop basic probability theory, including conditional probability, and

9) use Markov chains to describe the evolution of state distributions.

Text: *Finite Mathematics*, 8th Edition, by Howard Rolf. ISBN-13: 978-1-133-94577-2. You may purchase a physical textbook from the book store, or use the eBook that accompanies WebAssign access (see below).

Attendance: Attendance is mandatory. I will pass a seating chart around the first week of class. You are expected to sit in your assigned seat the remainder of the semester and attend all classes on time. Arriving late for a class or leaving early is very disruptive of class. If you need to leave early, please let me know at the beginning of class.

Communication: All communication with your instructor will be done via University email. All announcements I post will be available on Sakai. Due dates for homework assignments, quizzes, and exams will be available under the Assignment tab on Sakai.

Homework: Homework consists of small projects and problems done online. For each section in the book, a set of problems will be assigned online via WebAssign. The due date for these assignments will be posted under the Assignments tab on Sakai. It is your responsibility for keeping track of these due dates. When we complete a section, I will assign the homework to be due two class periods after. You must complete all of the WebAssign problems to receive 100% credit for your homework grade. To get started in WebAssign:

1) Go to `http://www.webassign.net`

2) Click on the button that says ENTER CLASS KEY.

3) Use the key: westliberty 8712 6618.

4) If you do not already have a WebAssign account, follow the instructions for setting up an account. If you do already have a WebAssign account, enter your login information and continue.

Keep an organized record of problems you work online in a notebook for future reference. Working homework diligently and seriously is where learning mathematics occurs; you must spend time struggling through assignments (and seeking help when necessary). I encourage you to work together on these assignments.

Quizzes: A quiz will cover approximately two to four sections at a time and will be announced prior to the class period in which they are administered.

Exams: There will be three exams and a final. The anticipated exam dates are listed below and are subject to change:

Thu, Sep 17   Chapter 1–3 Exam
Thu, Oct 22   Chapter 4–6 Exam
Tue, Nov 24   Chapter 7–10 Exam
Tue, Dec 8   Final Exam in Main Hall 210 from 10:30am – 12:30pm

The final will be comprehensive. Students may use one 8.5×11 sheet of paper of notes written on front and back.

Calculators: Bring your calculator to class every day. All exams will be designed in such a way that a calculator will not be necessary. Calculators may be used on exams, with the exception of the TI-89 or newer models. A cell phone may not be used as a calculator.

Make-up Policy: If you are absent the day of an exam, then the score for that item will be zero unless you and I discuss it, and we both agree that a make-up is appropriate. Adjustments will be made for students who must miss class due to illness, observance of a religious holiday, and for students who miss due to a university sponsored activity (with letter from coach, sponsor, etc). I am more willing to give make-ups if *prior* permission is obtained. If an assignment is due on a day you are absent, you must have a valid excuse to receive points on the assignment.

Cheating: Don't do it. Take home exams are to be worked on individually. Students are expected to adhere to the official Academic Dishonestly Policy as stated below:

> *Academic Dishonesty, in whatever form, belies the stated philosophy of WLU "to promote the development of the intellectual, cultural, social, physical, emotional, moral, and vocational capacities of all persons within its sphere of influence." Individuals who commit acts of academic dishonesty violate the principles, which support the search for knowledge and truth. The academic community has established appropriate penalties and disciplinary action for such behavior that can include being expelled from WLU.*

Grading: There are a total of 1000 points. The standard grading scale will be used.

Homeworks   225 points
Quizzes 7×25 points
Exams 3×125 points
Final 1×175 points
Attendance $50 \times \dfrac{\text{number of attended classes}}{\text{total number of classes}}$ points

Special Attention: If you have a disability that affects your academic experience and plan to seek accommodations, it is your responsibility to inform Disability Support Services as soon as possible. Disability Support Services is located in the Learning and Student Development Center (LSDC) in Main Hall. Kateryna Forynna is the ADA representative; she can be reached at (304) 336-8216 or by email at kateryna.forynna@westliberty.edu. It is important to request accommodations early enough to provide adequate time to facilitate your request and provide faculty with written verification of eligibility.

Tutoring: Free, walk-in tutoring is available at the Learning and Student Development Center on the first floor of Main Hall. Students are strongly encouraged to take advantage of this resource. For more information, see `http://westliberty.edu/lsdc/tutoring-services/`.

Course Outline: