COURSE SYLLABUS

MA 110, FINITE MATHEMATICS

I. INSTRUCTOR INFORMATION

A. Name: Dr. Ashley Johnson

B. Office: MAB 118

C. Office Phone Number: 256-765-4182

D. E-mail Address: ajohnson18@una.edu

E. Website: `buildingthepride.com/faculty/ajohnson18`

F. Office Hours: MW: 9:00 - 10:00, 1:00 - 2:00; TTh: 9:30 - 10:30; F: 9:00 - 10:00 or by appointment.

II. COURSE INFORMATION

A. Finite Mathematics, MA 110, 3 Semester Hours

B. Fall 2014, Section 05

C. MWF 8:00 am - 8:50 am, MAB 2.

D. Prerequisites : A minimum mathematics ACT score of 22 and credit in high school Algebra I, Algebra II, and Geometry; or grade of C or better in Intermediate Algebra (MA 100); or Mathematics for Liberal Arts(MA105).

E. Course Description: This course is intended to give an overview of topics in finite mathematics together with their applications and is taken primarily by students who are not majoring in science, engineering, commerce, or mathematics (i.e., students who are not required to take calculus). The course includes sets, counting, permutation, combinations, basic probability (including Bayes Theorem), an introduction to statistics (including work with Normal Distribution), matrices and their applications to Markov chains and decision theory. Additional topics may include Binomial Distribution, symbolic logic, linear models, linear programming, the simplex method and applications

F. Course Objectives: The student shall demonstrate knowledge of counting techniques (including permutations and combinations), basic probability, (including Bayes Theorem), basic statistics, matrices and their applications to Markov chains and decision theory.

G. Course Content

   a. Set Theory

      i. Introduction to sets

      ii. Subsets

      iii. Complement, union and intersection of sets

      iv. Venn Diagrams

      v. Applications

   b. Probability

      i. Basic Concepts

      ii. Conditional probability

      iii. Bayes Theorem

   c. Counting Principles

      i. Permutation and combinations

      ii. Applications of Counting

      iii. Binomial Probability

      iv. Probability distribution and expected value

   d. Statistics

      i. Measures of central tendency

      ii. Measures of variation

      iii. Normal distribution

      iv. Binomial distribution (optional)

   e. Matrices

      i. Addition and scalar multiplication

      ii. Matrix multiplication

   f. Application

      i. Markov chains and applications

      ii. Decision making (game theory)

III. **TEXTBOOK AND SOFTWARE**

A. Textbook: Finite Mathematics by Lial, Greenwell and Ritchey (10 th edition). ISBN 0-321-74899-9

Note: The homework will be done on the computer, using the MyMathLab (MML) software. The MML software is REQUIRED for this class. The text is included as an e-textbook version in the MyMathLab subscription. YOU DO NOT NEED TO PURCHASE A BOOK SEPARATELY unless you would like a copy of the print version.

B. Software: MyMathLab Student Access Kit

C. Calculator Policy: Each student is required to have a non-graphing calculator. You are not allowed to use your cell phone for a calculator.

IV. **ACCOMMODATIONS**

In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, the University offers reasonable accommodations to students with eligible documented learning, physical and/or psychological disabilities. Under Title II of the Americans with Disabilities Act (ADA) of 1990, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Amendment Act of 2008, a disability is defined as a physical or mental impairment that substantially limits one or more major life activities as compared to an average person in the population. **It is the responsibility of the student**

to contact Disability Support Services to initiate the process to develop an accommodation plan. This accommodation plan will not be applied retroactively. Appropriate, reasonable accommodations will be made to allow each student to meet course requirements, but no fundamental or substantial alteration of academic standards will be made. Students needing assistance should contact Disability Support Services (256-765-4214).

V. **ACADEMIC HONESTY POLICY** Students are expected to be honorable and observe standards of conduct appropriate to a community of scholars. Additionally, students are expected to behave in an ethical manner. Individuals who disregard the core values of truth and honesty bring disrespect to themselves and the University. A university community that allows academic dishonesty will suffer harm to the reputation of students, faculty, and graduates. Incidents of possible student academic dishonesty will be addressed in accordance with the guidelines found at the following link:

http://www.una.edu/student-conduct/policies-and-procedures/academic-honesty.html

VI. **ATTENDANCE POLICY**

Regular and punctual attendance is expected of all students. Whenever a students cumulative absences for any reason excused or unexcused exceed the equivalent of three weeks of scheduled classes, no credit may be earned for the course. The student will either withdraw from the course or receive an F for the course grade. Any exceptions to this policy will be in accordance with the university policy.

VII. **COURSE WORK**

Quizzes

There will be a quiz in this course most Fridays. The content for this quiz will be announced either in class or by email beforehand. The class webpage, listed near the beginning of this syllabus, will also have the content for this quizzes listed.

Homework

Homework will be assigned on a regular basis on MyMathLab. Generally, the homework will be assigned after class and will be due at the beginning of the next class meeting.

In order to really understand the subject matter, you **must** do the homework problems. The earlier you start them, the more time you have to get help should you require it.

Worksheets

This section of MA 110 has been assigned Mathematics Fellow Noelle Hall through the Mathematics Learning Center. Noelle will provide one additional hour each week of supplemental guidance and instruction. This extra help session is on Wednesdays at 11:00 - 11:50 in MAB 12. This session will include an assignment which will factor between 5% and 10% into your final grade. See the section GRADING PLAN for more details.

The setup of these sessions is as follows: Each week you will be working in groups on problems. During this time, Noelle will be walking around to help you, and you should also ask your fellow classmates for assistance. You will turn this assignment in at the beginning of class on Friday.

VIII. **EXAMS**

There will be four exams in this course. The **tentative** dates for those exams are September 12, October 3, October 31 and November 24. These dates are subject to change. The exams will be between 40% and 60% of your grade. See the section GRADING PLAN for more details.

IX. **FINAL EXAM**

    A. The final examination is on **Monday, December 8th** from 3:15 pm to 5:00 pm.

    B. The final examination is comprehensive and multiple choice.

    C. The final examination is worth 25% of the total and it is departmental.

X. **GRADING SCALE**

Grades will be assigned according to the following scale:

A   90% - 100%

B   80% - 89%

C   70% - 79%

D   60% - 69%

F   Below 60%

XI. **GRADING PLAN**

The grades for the course will be determined by the following:

5% - 15%	Homework (H)
0% - 10%	Quizzes (Q)
0% - 10%	Project (P)
5% - 10%	Worksheets (W)
40% - 60%	Exams (E)
25%	Final Exam (F)

Each student will choose his or her own set of percentages (each being an integer) so that

$$H + Q + P + W + E + F = 100\%.$$

This choice of percentages counts as your first homework assignment and is due at the beginning of class on August 29th. I encourage you to come by my office to discuss the plan that you think would be best for you. You may change your preferences *once* during the semester, before 4:00 pm on Friday, October 3rd.

XII. **GENERAL COMMENTS BY INSTRUCTOR**

Again, your regular attendence is expected in the course, but should you have to miss a class, please notify me in advance. You are still responsible for getting any work that is due turned in by the due date. I do take work early in my office!

Should you need to get in touch with me, the email address listed at the top of this syllabus is the best way to do so. When emailing me, or any professor, please include a a brief subject line to tell me what you're emailing about, a salutation, your name at the bottom and please use complete sentences. I do **not** use Canvas.

Students who need additional help with homework or concepts covered in any math class may schedule a FREE individual consultation with a Mathematics Consultant through the Mathematics Learning Center (MLC). The link to set up a consultation is: `http://www.una.edu/successcenter/mlc/index.html` Freshmen are invited to attend the FOCUS sessions (Rivers Hall) for additional help in all subjects.