# College Mathematics, MA 105H, CRN 30176

## 3 credits

## Spring 2019

## MWF 12:20 – 13:15

## NH 160

## Course format: Hybrid lecture and online

### Instructor Name: Leslie Goldstein

### Office Location: EBH 266

### Office Hours: F2F: M 11:15 – 12:15; Online: T/TH 8 – 9 pm

### Alcove Hours: MW 10:10 – 11:10; F 11:15 – 12:15

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**Course Description**: This is a terminal math course. The content of this course will include:  reading and writing quantitative information, critical examination of quantitative data in the media, introduction to statistics, a survey of financial concepts (e.g., investments, mortgages, credit cards), and other “real world” applications.  There is an emphasis on reasoning, problem solving and written communication in this course. This course is a gtPathways course that meets the requirements to transfer MA-1 credit.  Specific gtPathways learning outcomes are listed at the end of this document.  The purpose of this course is to support students developing quantitative literacy skills useful in decision making and problem solving with an emphasis on the ability to evaluate information for accuracy and validity.  Specific math content of this course includes:

* Percentages
* Basic Statistics
* Probability
* Exponential Growth

These topics will be studied in connection with applications from a variety of fields.  Students will apply the skills they are learning to interpreting and evaluating materials and information from “real world” sources.  Learning Objectives are listed at the end of this document.

The actual mathematics used in this course will mostly be review from high school and even middle school.  This makes many people expect this course to be “easy” – they are very much mistaken!  While the types of calculations you will use are basic, what you do with the information is very complex.  This course is about using mathematics as a decision-making tool.  You will be evaluating data about some of the most important issues currently facing the world.  You will wrestle with seemingly contradictory information and have to justify your opinions using facts and logic.  You will see examples of errors (based on those “basic calculations”) made by highly educated and intelligent people and you will learn how to avoid similar mistakes.  This course is about learning to be a good thinker – and nothing is more challenging than that.

### Course Materials & Resources

Required Materials

* Scientific or graphing calculator – **calculators on phones are not acceptable**
* Your time and effort:  expect to participate actively in class and spend approximately 2 to 3 hours of out of class time for each hour in class.

#### Resources

This course is taught using a balance of online materials and face to face activities and lectures.  In order to be successful in this course you will need to review these expectations and follow them.

* Log into the course several times each week to check the course content, announcements, conversations and documents.
* Keep up with the weekly readings and assignments.  Students who keep up with the weekly work tend to do much better in an online course than those who do not.
* Please do not miss an assignment deadline.  Refer to the course schedule/calendar to ensure that you submit assignments on time.
* Remember that academic integrity will be appraised according to the student academic behavior standards outlined in the Fort Lewis College Student Conduct code.
* Review your notification settings to make sure you receive course information in a timely manner.
* Check your inbox daily.
* Please read the document titled “Interaction Guidelines, Netiquette and Technical Resources” for additional information.

#### Canvas

Online materials (lecture notes, homework assignments, quizzes… ) will be available at [Canvas](http://courses.fortlewis.edu/) (<http://courses.fortlewis.edu>)If you are not familiar with Canvas, please work through the [Student Canvas Orientation](https://courses.fortlewis.edu/courses/6805) (<https://courses.fortlewis.edu/courses/6805>). For technical help with Canvas contact the 24/7 support hotline at 855-971-1611 or submit a HELP ticket in Canvas.

#### Tutoring

**Office Hours –** I hope you will visit during my office hours. Come individually or with friends. It’s a chance to talk about the course, assignments, exams, study strategies, or whatever else you’d like to discuss. You don’t have to have a problem to visit. If you find yourself having difficulty with a reading or assignment, however, I definitely want to see you; I may be able to help. If my office hours are impossible for you, please let me know so that we can make an appointment for another time. If you are choosing to meet with me during my online office hours, then the method of communication would be email or skype.

**Algebra Alcove –** The Algebra Alcove drop in tutoring center is located in Jones Hall 147.  It is staffed with math instructors and trained peer tutors to answer your questions.  The current schedule is posted on Alcove door and on the FMP webpage.  **Please bring your FLC ID card with your 900 number.  You need it to check in.**

**Writing Center –** The Writing Center is located in Jones Hall 105A.  It is staffed with writing instructors and trained peer tutors.  They provide assistance with reading and writing.

### Math Course Learning Outcomes

* Students will be able to apply mathematical concepts to contextual situations (Introduced/Reinforced)
* Students will have the skills necessary to succeed in the quantitative components of their major (Reinforced)
* Students will be able to communicate mathematical understanding in writing (Introduced/Reinforced)
* Students will be able to maintain an organized portfolio for their courses (Introduced/Reinforced)

### Math Course Learning Objectives

* Students will be able to interpret information by eliminating extraneous information, identifying main points in a reading, and determining the numerical reasonableness of their answers.  *This is assessed through the Summary Writing Assignment.*
* Students will be able to evaluate information and arguments for quality, significance and validity (e.g., identify hidden assumptions, unsupported arguments, and assess conclusions).   *Student activities include reading articles and discussion of the articles, both verbally and in writing.*
* Students will be able to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis.  *Student activities include reading articles and discussion of the articles, both verbally and in writing.*
* Students will be able to explain information presented in various mathematical forms (e.g., graphs, diagrams, tables, words).  *This is assessed through the Summary Writing Assignment.*
* Students will be able to interpret quantitative information from common sources (e.g., newspapers/magazines, TV/radio, advertisements, consumer information, tax information).   This quantitative information may take the form of graphs, charts, percentages, or statistics.  *This is assessed through the Summary Writing Assignment and on the Final.*
* Students will be able to make and evaluate important assumptions in data collection and/or in statistical studies (e.g, how members of the study were chosen).  *This is assessed through the Inferential Statistics Project and on the Final.*
* Students will be able to support an argument using quantitative evidence.  *This is assessed through the Summary Writing Assignment and on the Final.*

### LAC Learning Outcomes (for LAC courses only)

* Students apply intellectual and practical skills to think critically and communicate effectively.

*In this course students engage in critical thinking, written communication, quantitative literacy, and problem solving.  These outcomes are addressed in several writing assignments throughout the course culminating in the Summary Writing Assignment, where students demonstrate awareness of context and purpose of the assignment, as well as use appropriate and relevant content to develop and complete the assignment. In this assignment and the Mine Safety Writing Assignment, students are able to explain issues, select information relevant to their argument, and question assumptions.  Students are also able to demonstrate this outcome through completion of the Inferential Statistics Project.(The LEAP rubrics for critical thinking, written communication, quantitative literacy, and problem solving will be used to assess whether students have met this outcome.)*

* Students integrate knowledge and skills and apply them to new settings and complex problems.

*In this course students are able to synthesize their knowledge from the percentages section of the class and apply it to the requirements for the Summary Writing Assignment.  Students are also able to make connections across the field of inferential statistics when creating their Inferential Statistics Project. (The LEAP rubric for integrative learning will be used to assess whether students have met this outcome.)*

### gtPathways

This course meets the following gtPathway Student Learning Outcomes: *Quantitative Literacy*Competency in quantitative literacy represents a student’s ability to use quantifiable information and mathematical analysis to make connections and draw conclusions. Students with strong quantitative literacy skills understand and can create sophisticated arguments supported by quantitative evidence and can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc.).

## ***Student Learning Outcomes (SLOs)***

*Students should be able to:*

1. Interpret Information

1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).

2. Represent Information

1. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

3. Perform Calculations

1. Solve problems or equations at the appropriate course level.
2. Use appropriate mathematical notation.
3. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.

4. Apply and Analyze Information

1. Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
2. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
3. Make judgments based on mathematical analysis appropriate to the course level.

5. Communicate Using Mathematical Forms (required for Statistics Only)

1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).

The gtPathway Student Learning Outcomes will be assessed through the following signature assignment(s): 4 tests, summary writing assignment, Mine Safety writing assignment, and Newspaper writing assignment.

### Course Requirements & Grading Policies

* Tests - There will be 5 tests on the dates indicated on the schedule. Tests cannot be made up late. Tests will be online.
* Final Exam - The final exam is scheduled on Monday, April 22nd from 6:45 – 8:45 p.m. in RL002E.  The final **must** be taken on this day during this time.
* Written Work -  There will be both written math homework and writing assignments in this class.  Homework will be collected randomly. Athletes or other students missing class for planned events should turn their homework in before leaving.  The writing assignments will begin with shorter assignments which may include revisions.  These will give you an opportunity to learn the expectations of the instructor.  These will be followed by longer assignments that will be worth more points.  In addition, instead of formal exams, there will be several assessments, the details of which will be discussed in class.  **None of these assignments will be accepted late, neither can they be made up.**
* Group Work (in class) - You will also be expected to participate in discussions, group activities and presentations in class.  Points will be based on work completed as well as full participation and collaboration with your group.
* Portfolio - You will need to organize your work into a portfolio.  Guidelines will be given to you regarding the requirements.

#### Sample

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| --- | --- |
| Course Requirements: | Weight/Value: |
| Tests (5) and final (best 5 chosen) | 30% |
| Written Work/HomeworkGroup Work/Class WorkOnline Discussions | 45%15%5% |
| Portfolio | 5% |

#### Grading Scale by %

|  |  |
| --- | --- |
| Letter Grade | Point Range |
| A  | 93-100 |
| A-  | 90-92 |
| B+  | 87-89 |
| B | 83-86 |
| B-  | 80-82 |
| C  | 73-76 |
| C+ | 77-79 |
| C- | 70-72 |
| D+ | 67-69 |
| D | 63-66 |
| D- | 60-62 |
| F | 0-59 |

### Course Policies

#### Attendance

It is very important that students come to class and actively participate every day. Students who miss class may not make up any in-class exercises or activities, quizzes, or exams.  Students who miss more than 6 face to face sessions will automatically fail the course.  There is **no difference** between an **“excused”** absence and an **“unexcused”** absence.  However, students who know they must miss class due to school sponsored activities, religious holidays or cultural obligations should discuss this matter with the instructor at least one week in advance so that appropriate arrangements can be made.  It is the responsibility of the student to ensure the instructor of the class has received such notification. Students can contact their instructor by e-mail, voice mail, and, of course, by going to his/her office to make the necessary arrangements.

Tardy arrivals and early departures will affect a student’s attendance, at the instructor’s discretion.  The instructor may combine a number of tardy arrivals and/or early departures to equal an absence. In addition, an absence may be recorded if a student leaves for any amount of time during the class period.

Disenrollment Policy

You will be disenrolled from this course if you miss the first day of class. If you are disenrolled from the class, you may re-register if space is available.

#### Course Withdrawal Information

Withdrawal from Course – The last day to withdraw from FLC classes with a grade of “CW” (course withdrawal) is available on the Registrar’s Office website. This is a college-wide deadline that is not negotiable.

To withdraw from this course, go to the Registrar’s Office, Room 160, Miller Student Services Building before the course withdrawal deadline. They will help you through the process. You do not need my signature on the course withdrawal request form.

Starting Fall 2013, students have a life-time limit of three individual course withdrawals from FLC courses. If you have withdrawn from classes before Fall 2013, these will not count towards your lifetime limit. Also, withdrawing entirely from a semester (all classes) does not count against your lifetime “CW” limit. Semester withdrawal is handled under a different policy and procedure. Please refer to the Academic Policies section of the Fort Lewis College *Catalog of Courses* for more information about course and semester withdrawal policies and procedures.

### Course Expectations

#### Student Graders

A student grader may grade your homework assignment and portfolios in this class.  The grader is a student who has qualified for this position by completing this class (or equivalent) with a B+ or better and an instructor recommendation.  He or she has signed a confidentiality agreement pledging not to discuss information about the work he or she sees to anyone other than the instructor.  Graders are not allowed to grade the work of students with whom they have a personal relationship.  If you have concerns about a student grading your work, please contact your instructor.  If you ever have questions about a grade on an assignment, you must bring it to your instructor’s attention immediately upon having the assignment returned to you*.*

### Professional Expectations

Credit Hour Syllabus Statement

In addition to spending 3 hours per week attending class, the typical student in this 3 credit lecture course should expect to spend at least 6 hours per week of concentrated attention on course-related work, including but not limited to time spent reading, reviewing, organizing notes, preparing for upcoming quizzes/ exams, problem solving, developing and completing projects, and other activities that enhance learning.

Disability Services

Fort Lewis College is committed to providing all students a liberal arts education through a personalized learning environment. If you think you have or you do have a documented disability which will need reasonable academic accommodations, please call the Director of Disability Services, 280 Noble Hall, 970-247-7459, for an appointment as soon as possible.

Academic Integrity

Academic dishonesty includes all forms of unethical or illegal behavior which affects a student’s academic standing, including, but not limited to, cheating on exams, plagiarism, forgery of academic documents, falsification of information on academic documents, or unauthorized access to computer files containing academic information. Academic dishonesty may result in sanctions ranging from a lowered grade on a particular assignment to an “F” in the class and report submitted to the Office of the Vice President of Academic Affairs. [The policy on academic integrity by students can be found here](https://wiki.fortlewis.edu/display/POL/Section%2B1.%2B-%2BAcademic%2BIntegrity%2Bby%2BStudents%2B-%2BExcerpt).

Course Schedule and Topic Outline

|  |  |
| --- | --- |
| **Week** | **Topic, Activities and Assignments (specific deadlines are on canvas)** |
| **1**January 7th  | **Module 1a**:  Calculating Percentages**Module 1b**:  Reading Quantitative Information and Writing the context assignment |
| **2**January 14th  | **Module 1b**:  Reading Quantitative Information and Writing the context assignment**Module 1c**:  Relative/Absolute Change and Comparing Quantities |
| **3**January 21st  | **Module 1d**:  More than/Less than with percentages**ASSESSMENT**:  Percentage Test 1***Census Date: Tuesday*** |
| **4**January 28th  | **Module 1e**: Fact vs. Interpretation**ASSESSMENT**: Article (3 key facts) |
| **5**February 4th  | **Module 1f**: Reading and Interpreting Graphs and Misleading Graphs**ASSESSMENT**:  Percentages Test 2**ASSESSMENT**: Newspaper Project |
| **6**February 11th  | **Module 2a**:  Descriptive Stats |
| **7**February 18th  |
| **8**February 25th  | **Module 2b**:  Introduction to Studies**ASSESSMENT**: Descriptive Statistics Test 3***Midterm: Monday*** |
| **9**March 4th  | **Module 2c**:  Inferential Statistics |
| **10**March 18th  | **Module 3a**:  Taxes and Flexible spending accounts**ASSESSMEN**T: Inferential Statistics Test 4 |
| **11**March 25th  | **Module 3b**:  Savings/Investments |
| **12**April 1st  | **Module 3c**: Credit Cards **ASSESSMENT** (Signature assignment): Cost of Living Activity |
| **13**April 8th  | **Module 3d**: Mortgages |
| **14**April 15th  | **ASSESSMENT**:  Financial Literacy Test 5**Module 3e**:  Personal Fiscal Responsibility |

“The Colorado Commission on Higher Education has approved College Mathematics, MA105 for inclusion in the Guaranteed Transfer (GT) Pathways program in the MA-1 category. For transferring students, successful completion with a minimum C‒ grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to

<http://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html>