Math 104. Quantitative Reasoning and Informed Citizenship   **Fall 2009**
Monday, Wednesday and Friday—8:55 a.m. to 10:05 a.m.
Comenius 101

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Textbook
 Quantitative Reasoning: Tools for Today's Informed Citizen, by A. Sevilla and K. Somers

Course Description
This course satisfies category F2 of LinC. The course focuses on quantitative reasoning skills and learning to interpret and critically assess numerical arguments, with an emphasis on issues relevant for informed and effective citizenship.

Specific topics include: Organizing information pictorially using charts and graphs; Looking at bivariate data; Graphs of functions; Multiple variable functions; Proportional, linear, and piecewise linear functions; Modeling involving linear and exponential functions; Logarithmic functions and scientific notation; Indexes and ratings systems; Inductive reasoning; Deductive reasoning; Decision making; Apportionments; Measures of center and five-number summary; Standard deviation, z-scores, and normal distribution; Probability; and General problem-solving techniques.

Course Goals
The goals of this course are: (1) Develop students' facility in formulating, analyzing, and solving real-world problems that involve quantitative information. (2) Increase students' ability to explain and interpret, orally and in writing, the results of quantitative analyses. (3) Increase student's proficiency with computer software and use of internet resources in a learning environment.

Classes
 The class will be a mixture of short lectures, questions and discussion, and classroom activities that you will investigate. The majority of class time will be spent with you working on the activities, so active participation during class meetings is expected from each of you. Each class meeting will be held in Comenius 101, which is equipped with enough computers so that each student will have a computer to use. We will use Microsoft Excel 2007 for most activities. In addition, we will use the World Wide Web for several activities. Some activities will involve students working together in pairs or small groups and some activities will involve individual work.

Attendance
Class attendance is required. Your understanding of the material in this course will be assessed during every class meeting. If you are not in class, you cannot show mastery of the day's work during that class. Because we will be working with Excel in class and introducing new skills

each day, it is very important for you to be there and it will be difficult to catch up once you have fallen behind. You are responsible for all work covered in class and all assignments, even if you must be absent from class. If you must miss more than one class due to illness or emergency, you should notify the instructor. Also, common courtesy demands that you be on time and do not leave the room during class (unless you are ill.)

Readings and uncollected homework
Daily and problem assignments from the text will be given; you are expected to come to class prepared to explain problem solutions and to ask questions on anything you may have found unclear. You may be randomly called on to answer questions on the readings for that day.

Activities and projects
The reading assignments are background materials for the in-class activities. Your work on each activity investigated in class will be normally collected during the next class, to give you a chance to complete the activity outside class if you did not finish it during the previous class period. You will be asked to turn in the whole activity, with each part completed, accompanied by any printed graphs and explanations as instructed. All verbal responses are to be completed using full sentences that clearly answer the question. Please proof-read all written explanations to make sure they say what you want them to say. These activities will be graded and returned to you in a timely manner. In some cases the whole activity will be graded; in other cases, portions of the activity will be graded. In the interest of fairness, late activities will **not** be accepted.

There will be some activities that could be called projects. For these activities, you will be able to choose a context that might be of special interest to you. You will be given details about these assignments in class.

Students are encouraged to study together but each of you must write your own hand-in work individually unless otherwise instructed in writing. The *Academic Honesty Policy guidelines for Mathematics courses*, which are included at the end of this document, are to be followed on all assignments.

Quizzes and Exams
There will be three short quizzes, two in-class exams, and a cumulative final exam. The quizzes will be given in class on **Monday, September 21; Wednesday, October 28; and Friday, December 4**. You will have half hour to complete each quiz. The two exams will be given on **Wednesday, October 7** and **Monday, November 16**. You will have the whole class period to work on the exams. Please mark the dates of all exams and quizzes on your calendar. No make-up quizzes will be given; make-up exams will be given only under extreme circumstances and with appropriate documentation.

The final exam for this class is scheduled for **Tuesday, December 15, 1:30 p.m.**

Grading
Your grade will be based on class participation (15%); three quizzes (10% total); two in-class exams (10% each, 20% total), a cumulative final exam (20%), and graded activities, projects and other homework (35%).

Technology

You will use the classroom computers and Microsoft Excel 2007 during many class periods. Instructions will be provided as needed, so no prior knowledge of Excel is assumed. If you have an earlier version of Excel on a personal computer, you may use that to finish activities and projects. Instructions to complete the activities using an earlier version of Excel are also available. There are sufficient computers available on campus that you do not need access to your own computer to complete the work of the course.

You will need a basic calculator to use when solving homework problems, and to use during quizzes and exams. You will **not** have access to Excel or the computer during quizzes and exams, and you may **not** use a calculator on a cell phone during quizzes and exams.

Help
You are encouraged to see Dr. Sevilla for extra help during office hours or to arrange an appointment for extra help, if needed.

Accommodations
Students who wish to request accommodations in this class for a disability should contact Mr. Joseph Kempfer, Assistant Director of Learning Services for Disability Support, 1307 Main Street (extension 1510). Accommodations cannot be provided until authorization is received from the office of Learning Services.

Note: *This syllabus is a guideline for the course. It may be necessary to make changes during the semester. I will announce any changes in class.*

ACADEMIC HONESTY POLICY GUIDELINES

MATHEMATICS COURSES

The Mathematics Department supports and is governed by the *Academic Honesty Policy of Moravian College* as stated in the Moravian College Student Handbook. The following statements will help clarify the policies of members of the Mathematics Department faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thoughts of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the *Academic Honesty Policy of Moravian College.* For homework that is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solution of all assigned problems, both graded and ungraded.

All in-class or take-home tests and quizzes are to be completed by you alone without the aid of books, study sheets, or formula sheets unless specifically allowed by your instructor for a particular test.