Math 104. Quantitative Reasoning and Informed Citizenship   **Spring 2006**
Monday, Wednesday and Friday—8:50 to 10:00 a.m. Comenius 101

Instructor: Alicia Sevilla
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Course Description: 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.

Text: *Quantitative Reasoning and Informed Citizenship*, by A. Sevilla and K. Somers

Coursework: Daily reading and problem assignments from the text materials will be given; students are expected to come to class prepared to explain problem solutions and ask questions. Students will be randomly called on to answer questions on the readings for that day. Announced quizzes will be given regularly.

The reading assignments are background materials for the in-class activities we will be doing. Written assignments to be graded will include results from the in-class activities and solutions to problems assigned from the reading materials. In addition, there will be some announced short quizzes, one project, three in-class exams, and a final exam. Students are encouraged to study together but each student must write his/her own written work. The Academic Honesty Policy guidelines for the Mathematics Department, which are included at the end of this document, are to be followed.

Classes: 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. Students will use the computer during each class for appropriate investigations and will use Microsoft Excel for most activities In addition, some activities will require the use of the World Wide Web. Some activities will involve students working together in pairs or groups of three or four and some activities will involve individual work.

Calculators: Students should have a scientific calculator to use when solving homework problems, and during quizzes and exams.

Grading: Each student's grade will be based on class participation (15%), in-class exams and projects (45 %), a cumulative final exam (20%), and graded assignments and quizzes (20%).

Exams: The in-class exams will be given on the following dates:

Monday February 13   **Wednesday March 22**   **Friday April 21**

Attendance: Class attendance is required. 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 must notify the instructor. Repeated absences will result in the loss of most points for class participation course grade. Hour exams must be taken at the announced time; make-up exams will be given only in extreme circumstances. Graded assignments must be turned in on the date due to be graded without penalty. No assignment will be accepted after graded papers have been returned to the students.

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

Students who need special accommodations due to a disability should contact the Learning Services Office, so we can accommodate their special needs.

Note: Changes to this syllabus may be necessary. In such case, a revised copy will be handed out in class.

ACADEMIC HONESTY POLICY GUIDELINES

MATHEMATICS DEPARTMENT

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 <u>must</u> 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.