This syllabus is a sample or tentative syllabus and is subject to change. This is a sample syllabus representing what is USUALLY taught in the course and the USUAL assessments.

Math 570-WWW Syllabus                   Summer 2008

Mathematical Modeling and Problem Solving

Instructor: Dr. Ianna West

Office: Peltier 106-B No on-campus office hours.
Online Office Hours: Monday-Thursday 10:00am – 12:00 noon. Available for consultation via email or in the Blackboard virtual classroom during online office hours, or by appointment. Also available online throughout the day.
Email: ianna.west@nicholls.edu
Phone: 985-448-4394

Section: WWW
Required Text and Other Materials: No required text; access to a computer with internet is required.
Prerequisites: MATH 265 (Calculus III), MATH 355 (Differential Equations) and MATH 402 (Mathematical Statistics).

Catalog Description: Use of previous course work to construct models for various problems in the sciences, managerial sciences, or other related areas.

Topics:
1. Introduction to modeling.
3. Analytic methods of model fitting.
4. Qualitative modeling with functions.
5. Discrete probabilistic modeling.
6. Discrete optimization modeling.
7. Modeling with dimensional analysis.

**Topics are subject to change**
Student Outcome Objectives:

1. Given a real world scenario, the student will learn how to identify a problem, make assumptions and collect data, propose a model, test the assumption, and refine the model as necessary.
2. Given a model, the student will learn how to work backward to uncover the implicit underlying assumptions, assess critically how well those assumptions fit the scenario, and estimate the sensitivity of the conclusions when the assumptions are not precisely met.
3. Student will be able to apply the fundamental laws of nature to given situations that will aid in the construction of models.
4. Student will be able to develop models of phenomenon that changes over time, both over discrete time periods and when the behavior is taking place continuously.
5. Student will be able to develop and solve dynamical systems.
6. Student will examine how to produce descriptions of systems, and then develop the tools for extracting information, make predictions from these descriptions and analyze the effects various situations have on it.
7. Student will be able to develop methods of model fitting to a collection of data.
8. Student will be able to develop solutions using a range of analytical techniques: calculus, linear algebra, differential equations, probability, etc.

Course Content and Requirements

Hardware and Software Requirements: The course will be conducted via internet using Blackboard and email. The URL for the university’s distance learning website is [http://www.nicholls.edu/distance/](http://www.nicholls.edu/distance/). FAQs about internet courses can be viewed at [http://www.nicholls.edu/distance/faqs/](http://www.nicholls.edu/distance/faqs/).

A download for minimum computer requirements for taking a course on Blackboard can be found in the last question on the FAQs site given above. A Blackboard Tutorial can be viewed at [http://www.nicholls.edu/distance/blackboard-tutorial/](http://www.nicholls.edu/distance/blackboard-tutorial/).

On Campus Meeting Requirements: None

Notes: Lecture notes will be available on Blackboard.

Homework: Exercises will be assigned from each section. Students are strongly encouraged to complete all homework assigned to ensure an understanding of the concepts. Specific exercises from those assignments will be given for a grade. The problem sets will vary in point value depending on the number of problems assigned.

Exams: There will be a final exam worth 200 points. Dates of exam will be announced. If a student is out-of-state or lives further than two hours from Nicholls State University, he or she may request an alternative location to take the exam. There is a distance learning form required for tests. The form will be sent along with the test and is to be filled out by the test administrator. Arrangements need to be made in advance; therefore, inform the instructor at the beginning of the semester if you will be taking the exam off-campus.

Methods of Evaluation: Grade will be calculated on a ten point grading scale 90-100 A, 80-89 B, 70-79 C, 60-69 D, below 60 F. Grade will be determined as follows:

<table>
<thead>
<tr>
<th>Homework</th>
<th>200 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
<td>200 points</td>
</tr>
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</table>

*Distribution of points may change during the semester*
Make-up Procedure: To make up the final exam, student must have a valid written excuse resulting from an emergency situation. Students representing the university in any official capacity will be granted valid excuses and will be allowed to make up an exam.

Behavioral Policy: Students must at no time be disrespectful toward the instructor. Students must behave in a professional manner at all times. Failure to act in an appropriate manner will not be tolerated.

Attendance Policy: Participation in activities is required where an electronic record which clearly indicates time and date activity was submitted. For financial aid purposes, student must complete at least one activity, which is equivalent to having attended a class at least once.

Academic Honesty Policy: Cheating will not be tolerated. Sanctions for academic cheating, plagiarism, and forgery of academic documents including signing another's name (Sec 1.9) are those outlined in the Code of Student Conduct handbook.

Academic Grievances: The proper procedure for filing grade appeals or grievances related to academic matters is listed in Section 5 of the Code of Student Conduct and at the following link: http://www.nicholls.edu/documents/student_life/code_of_conduct.pdf.

Continued Learning Following an Extreme Emergency: In order to make continued learning possible following an extreme emergency;

Students are responsible for:
- reading regular emergency notifications on the NSU website;
- knowing how to use and access Blackboard (or university designated electronic delivery system);
- being familiar with emergency guidelines;
- evacuating textbooks and other course materials;
- knowing their Blackboard (or designated system) student login and password;
- contacting faculty regarding their intentions for completing the course.

Faculty are responsible for:
- their development in the use of the Blackboard (or designated) software;
- having a plan for continuing their courses using only Blackboard and email;
- continuing their course in whatever way suits the completion of the course best, and being creative in the continuation of these courses;
- making adjustments or compensations to a student’s progress in special programs with labs, clinical sequences or the like, only in the immediate semester following the emergency.

Americans with Disabilities Act: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of our academic accommodations. The Office of Disability Services is located in Peltier Hall, Room 100-A. The phone number is (985) 448-4430 (TDD 449-7002).

The last day to drop this course with a “W” is Friday, July 11, 2008.