MATH 573
HISTORY OF MATHEMATICS
Nicholls State University, Spring 2013

Instructor: Dr. Brian Heck
Office: 106-E Peltier
Phone: 448-4383
Email: brian.heck@nicholls.edu
Web: http://math.nicholls.edu/heck

My office hours are 9:00-11:00, 1:00-4:00 T, Th. Please contact me (phone, email, or in person) during these times if you have any questions. If you need assistance at a different time, contact me and we’ll work something out.

Course Description/Text: This course will be a humanities-style course that is approximately 75% history and 25% mathematics. There is no required text. I will post class notes to Moodle roughly once a week.

The history of mathematics covers a period of times roughly 6,000 years in length. It is therefore obvious that we will be unable to adequately cover every important development. The goal of this course is to explore how mathematics has developed over the years, so broad trends will be as important as specific mathematical topics. We will progress fairly chronologically, only diverging from this track to follow a particular topic in more detail. Particular attention will be paid to the people behind the achievements as well as the cultures in which they were made.

A few words need to be said about the Internet aspect of this course. All assignments, notes, announcements, etc. will be posted on Moodle. All students enrolled in an Internet course should have basic computer skills (such as word processing, e-mail, navigating the Internet, etc.). I invite you to visit the distance education webpage (http://www.nicholls.edu/distance) for more information and guidance. As an online student, you will be somewhat self-paced. This therefore requires self-discipline and self-motivation. The problem sets need to be turned in on time. It is the responsibility of the student to notify the instructor of technical and/or personal problems that may interfere with online participation. Since email will be our primary means of communication, you will need to check your Nicholls email account regularly (at least once a day) for possible news and/or announcements. Additionally, please feel free to email me as often as is necessary if you have questions about the material. Finally, just like a typical class, instances of academic dishonesty such as plagiarism will not be tolerated. Sanctions for such behavior are outlined in the Code of Student Conduct (Section 1.9).

Special Note: Section Five of the Code of Student Conduct, ‘Academic Dishonesty and Disruptive Behavior,’ includes a requirement that faculty file a charge complaint statement with their respective dean whenever a student is confronted or disciplined for cheating. The Office of Academic Affairs will maintain these records, and any student
confronted and/or disciplined for multiple offenses of academic dishonesty will be
brought before the Academic Affairs Integrity Committee for further review and potential
sanctions. Please read the Code of Student Conduct for further details regarding this
policy."

**Course Objectives:** At the completion of this course, a student will be able to:

- demonstrate an understanding of the development of mathematics over the years
- effectively discuss the lives of significant mathematicians
- explain the relationships between many fields of mathematics
- analyze mathematics in the context of the cultures in which it developed
- research historical topics in mathematics and clearly communicate their findings
  in writing

**Grading Structure:** We will have two exams, many weekly assignments, and a term paper. These will be described fully below.

**Exams:** We will have an “in-class” midterm exam and a “take-home” final. Exam questions will be of the following types: true/false, multiple choice, short answer, matching, essay, and mathematical. You will be expected to know mathematics, names, dates, and places (the “what”, “who”, “when”, and “where” of mathematics). But you will also need to understand the origins and context (the “how” and “why” of mathematics). The “in-class” midterm exam will obviously not actually be in-class, since we do not have class. It will be a typical timed exam that students will take at a specified time and place (as opposed to a “take-home” exam that you can complete when and where you want during the time you are working on it). Once the day of the midterm exam gets closer, I will schedule a time for the local students to take their exam with me. **Distance education students need to choose an approved testing center in their local area and complete a Proctor Approval Form to taking the exam. Once the form has been uploaded to Moodle, I will give you two weeks to inform me of your choice. That will allow me ample time to contact your designated proctor and approve (or not) the selection.** **Each exam will count for 20% of your semester grade.**

**Assignments:** You will have a problem set approximately once a week. These will range in style over the various types of problems appearing on the exams as well as possible discussion board participation. **This portion will account for 40% of your semester grade.**

**Paper:** This will be due to last full week of classes (April 29-May 3, 2013). The topic is up to you, but I must approve it. I would suggest using the first month of the semester thinking about what you would be interested in and discuss it with me (since I have veto power over any topic). I will have a list of possible topics if you have no idea what you would like to research. Turn in your selected topic to me at the latest by **Friday, March 1, 2013.**
Your paper should be neither all history nor all mathematics. It should be self-contained mathematically (do not assume I know what you are talking about). If you have any doubts, let a friend read it. Your paper should be written professionally using the normal college formatting (regarding spacing, bibliography, etc), as it will be graded for grammar and spelling as well as content. The length is up to you. Noted mathematical historian Fred Rickey once said,

...[a paper] has a natural length. You are telling a story which needs a certain background, exposition, and detail. When that is successfully done, stop.

Well put. This will account for 20% of your semester grade.

At the conclusion of the semester, letter grades will be assigned based on the usual 10% grading scale (A: 90-100%, B: 80-89%, C: 70-79%, etc). Late assignments will not be accepted unless there are VERY unusual circumstances, and make-up exams will only be administered if the student provides a valid excuse. The instructor decides which excuses are valid and which circumstances are unusual. As I said above, academic dishonesty (i.e. cheating, plagiarism, etc.) will not be tolerated.

Course Outline: We will begin, as mathematics did, in the ancient worlds of Egypt and Babylon.

I. Ancient Times  
II. Greece  
III. Renaissance Europe  
IV. The Calculus  
V. Number Theory  
VI. The Crisis in Foundations  
VII. The 20th Century

Important Dates:  
Mid-Term Exam – TBD (probably the week of March 11-15, 2013)  
‘W’ Day – Wednesday, April 17, 2013  
Term Paper Due – April 29-May 3, 2013  
Final Exam Due – Monday, May 13, 2013

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: 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 Moodle (or university designated electronic delivery system);
• being familiar with emergency guidelines;
• evacuating textbooks and other course materials;
• knowing their Moodle (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 Moodle (or designated) software;
• having a plan for continuing their courses using only Moodle 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.

ADA Compliance: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of your academic accommodations. The Office of Disability Services is located in 158A Shaver Gym. The phone number is (985) 448-4430 (TDD 449-7002).