

SYLLABUS FOR MATH 1213 – Fall 2009

Instructors and Office Hours:

Professor Jane DeVoe, 373- 5530, e-mail: j.devoe@neu.edu, 540 Nightingale Hall
Office hours: Mon and Thurs 3:00-4:00, or by appointment.

Course Objectives: This course is designed to develop problem-solving skills while learning to apply mathematics to real life situations. Mathematical concepts to be studied: normal distribution and standard deviation; graphs of linear and non-linear functions, the concept of derivative, derivatives for exponential functions, e ; topics in probability, binomial distributions, central limit theorem, polling theory.

Styles of Learning: This course will make extensive use of collaborative groups, although grading will be based on individual work. It is designed for the student who enjoys hands-on activities, social interaction and pondering mathematical questions.

Books: *The Pit and The Pendulum*, *Small World*, and *Pollsters Dilemma*. Purchase packet at Gnomon Copy. You will need to bring the unit under investigation to class everyday.

Materials: A graphing calculator is required for this course equivalent to the TI 83 or TI 84. You will need to bring this to class everyday. You will need it by the second class meeting. You will also need graph paper.

Attendance: Daily attendance is required. Students who have more than 4 absences may be required to withdraw. **There are no make up tests. Do not miss a test!**

Cell Phones and other electronics: Keep them turned off!

Help: Besides my office hours, assistance is available at the Math Tutoring Center in room 540 B Nightingale.

Grading: Daily Homework (due on time, 3 late accepted)	10%
Problems of the Week (POWs) (on time and typed)	20%
Portfolios (on time and typed)	20%
Tests	25%
Final	25%

Any late work will not receive full credit.

Grading of POWs : (for an A it has to be handed-in in class on day due.)

Each POW will have a write-up section. Your grade will be based on your responses to that section. In general, for an A, your work should reflect a week's work of effort and insights.

Late Work: Three late home works are allowed, but they must be presented before the portfolio is due. POWs and Portfolios are due on time; they will not be accepted more

than one class meeting late. If your printer isn't working you can e-mail me the work or hand in a disk. If you are sick, you can e-mail me your work and hand in attachments when you return.

Finals: Our final is on Dec No student will be given a request for a special final exam unless it is due to a registrar created conflict. Do not make travel plans that conflict with the final exam.

Note: It is your responsibility to be aware of any changes to this syllabus that are announced in class. Students are responsible for all information given when they are absent. If you have any concerns about the course that cannot be resolved with me, please see Prof.Oblas. It is the University policy that no grade, including an incomplete, can be changed after one year. Exceptions must be authorized by the Academic Standing Committee.

Academic Honesty: Cheating will not be tolerated. All work submitted must be your own. If you get help from another individual on the POWs or portfolios, your write-up needs to be in your own words, and you must identify who you worked with. You will be randomly called on to explain your work, so if you get help, make sure you understand it. You must show how you got the answers for any work submitted.

During exams, cell phones must be put away. You cannot share calculators or use another device in place of your calculator..

Please refer to the University's policies on cheating and related disciplinary actions that are detailed in your Student Handbook. **Incidents of cheating will be reported to the Office of Judicial Affairs, which can lead to suspension or expulsion from the University.**

<u>CLASSWORK</u>	<u>HOMEWORK</u> <u>(due next class unless specified)</u>
Sept 9 The Unit Question p. 2-5	a) Initial Experiment p. 5
Sept 10 Time is Relative p. 6 Your Pulse p. 6	a) Flipping Coins p.7 b) POW Cookie Jar p 120 Due 9/24
Sept 14 What's Rare p. 8-9 Normal Distribution and Standard Deviation (of Pulse data) by hand p.10-13	Penny Weight p. 14
Sept 16 Standard Deviation using TI 83 (of Pulse and Timing) p.15	a) Deviation p. 16 b) Use Standard Deviation on Penny Weight p. 14 c) POW
Sept 17 The Standard Pendulum p.17 POW presentations	a) Conclusions about the Standard Pendulum p.18 b) More on Standard Deviation p.20
Sept 21 Pendulum Variations p.19	More on Standard Deviations p.20
Sept 23 Bird Houses p.21-23 Using the calculator to graph points and curves, using table and window Start Graphing Free-For –All p. 27-28	Finish Graphing Free For All
Sept 24 Graphing Free-For-All summary	Graphs in Search of Equations p. 26 Tables in search of an Equation POW due
Sept 28 The Period and the Length p.30 The Thirty Foot Prediction p.41	a) The Brake p. 31 b) Unit Portfolio p. 32 due Oct. 5 c) POW Who Will Win the Prize DUE 10/15
Sept 30 Building the 30 foot Pendulum Review for test	
Oct.1 Unit Test	

Oct 5 Unit Question for Small World p. 34	
Oct 7 How Many People? p. 35	Eggs and Amoebas p. 36
Oct 8 The Rescue p. 37	Doctor's Orders p.40
Oct14 On A Tangent p. 38-39	More on a Tangent p.41

Oct 15 Exponential Slopes p. 41	The Derivative of x^2 p. 42 POW due
Oct 19 Find that Base! P. 43 Logarithm Review p. 44	Natural Logarithms p. 45 POW New Football p. 103-104 due 10/28
Oct 21 Generalized Exponential Derivatives p. 46	Instantaneous Rate of Change p. 48
Oct 22 California and Exponents p. 47	Unit Portfolio due Nov 2
Oct 26 Return to Small World Isn't It	
Oct 28 Review	
Oct 29 Test	

Nov 2 Pollster's Dilemma; Sampling Seniors p. 52-52	Pizza Combinations p. 54 Throw Back the Little Ones p.56
Nov 4 Finish Sampling Seniors; Ice Cream Combinations and Permutations p. 54-55	Combinations and Permutations in Sports p. 58
Nov 5 Probability p. 59 Play Ball p. 60	Probability p. 61
Nov 9 The Theory of the Three-Person Poll p. 62-63	Graphs of the Theory p. 64
Nov 12 The Central Limit Theorem and Graphing Distributions; Normal Area p. 66-72 Middletown Musings p. 73	More Musings p. 74
Nov 16 A Plus for the Community p. 74 Mean and Standard Distribution for Probability Distributions p. 75-76	POW Let's Vote on It due Dec 2
Nov 18 The Search is On! P. 77-78	Putting Your Formulas to Work Part II p. 80
Nov 19 From Numbers to Proportions p. 81 P vs. p	Putting It All Together p.85
Nov 23 How Many Should We Poll? P.84	
Nov 30 The Worst Case Scenario p.83	Putting It All together (cont)
Dec 2 What Does It Mean p.85 Pollster's Dilemma Revisited p. 89	POW due
Dec 3 review for test	Portfolio p. 90 due Dec.
Dec 7 test	
Dec 9 Review for Final Collect Portfolios	