HARVARD UNIVERSITY EXTENSION SCHOOL
Math E-3 Quantitative Reasoning: Practical Math
Spring 2016 Syllabus

2/5/2016

Course Description and Goals: If you have read the online description of this course, you may be mildly apprehensive about some of the terms used there. We shall indeed be covering topics in statistics, such as standard deviation and confidence intervals, but we shall be doing so in a manner that will be both informative and fun! We will also spend time using the computer for spreadsheets and for creating rather interesting graphs and charts. The course is geared towards achieving a clearer understanding of how math is used in the everyday world. In addition, there will be extra practice in basic arithmetic concepts such as integers, fractions, decimals, and percents, certainly everyday occurrences! So if you feel a bit shaky in any of these areas, you are in the right place. If you are a "math whiz," you are not in the right place!

Instructor: Graeme Bird **e-mail:** graeme.bird@gordon.edu bird@fas.harvard.edu **phone:** (978) 867-4352

Teaching Assistants:
Sue Albrigo albrigo@dcemail.harvard.edu
Jessica O'Brien jobrien@easton.k12.ma.us

Graders:
Nina DeLuca tigerz2000@juno.com
Lori Normil lnormil@g.harvard.edu

MATH E-3 is offered with an online option. Students can attend classes in person, watch lectures live via the internet, and/or watch online videos of lectures.

All course materials, including homework assignments, solutions, videotaped lectures, practice exams, as well as class announcements will be posted to the course website.

You must LOG IN to the course website to have full access to the course materials: https://canvas.harvard.edu/courses/8413

You MUST check the website often.

Lecture: Tuesdays, 7:40 – 9:40 p.m. in Maxwell Dworkin 115. Live chat will be available.

Lecture videos will be available for online viewing within 48 hours. For more information on course format, system requirements and help: http://www.extension.harvard.edu/academics/courses/types-courses/video-course-guidelines

TA sections (optional):

Online: with Jessica (via "Conferences" on course website): Wednesdays 7:30 – 9:00 pm (ET)
On campus with Sue: Tuesdays, 5:30-7:00 pm, Sever Hall 104.

These optional sections will present opportunities to ask questions about the lecture material and homework problem sets. If you login in or show up, you are expected to participate.

Additional help: *The Math Question Center*. http://www.extension.harvard.edu/resources-policies/resources/math-question-center

Required Materials:

- **Texts:** No required text; all materials will be posted on the course website.
- **Calculators** - You will need a calculator – with exponents. The **TI 30Xa** and **TI 30X IIS** are recommended. In addition, there is a listing of acceptable calculators posted in the Homework Help Center module on the course site. Smartphone calculators and calculators with internet access ability are not acceptable.
- A **ruler** will be useful when drawing graphs – no crooked lines please!

Computers and more
Needless to say, we expect you to have access to a computer. You must also have access to a scanner or smartphone.

E-MAIL - You will receive class-wide e-mails regularly, so it is important that you have a current email address on file with the Registrar's Office.

QUIZZES and FINAL EXAM

Quiz 1: online – March 8
Quiz 2: online – April 5
There are no make-ups for the two quizzes.

Final Exam: May 10
Location: Students who reside within the six New England states - Maxwell Dworkin 115 (subject to change).

Students who reside outside the six New England states must arrange for a proctor for the final exam. Click on the following link for information about the procedure for taking proctored exams**:**

http://www.extension.harvard.edu/resources-policies/exams-grades-transcripts/exams-online-courses

The date of the final exam is fixed by the Extension school. If you cannot take the Final Exam at the scheduled time and date, YOU MUST contact the Extension School Registrar. The Registrar will determine if you are eligible for a make-up exam.

Grading: The following is the grading scheme for the course. It is set up so that if you miss a Quiz 1 or Quiz 2, you will not be penalized with a zero grade. Your final exam will account for the missed Quiz. You MUST take the final exam even if all your other grades are 100%. Otherwise, the final exam will be counted as a zero.

Homework- 25% the two lowest grades will be dropped
Quiz 1 - 25% if better than the final grade
Quiz 2 - 25% if better than the final grade
Final Exam - Minimum of 25%, Maximum 75% depending on midterms.

Example:

	Homework	**Quiz 1**	**Quiz 2**	**Final Exam**	**Course Grade**
Student #1	90%	68%	78%	75%	Grade = .25*90% + .25*78% + .5*75% = 79.5% Rounds to 80% = B−

HOMEWORK POLICIES

ACADEMIC INTEGRITY, COLLABORATION − It is the policy of the Extension School, and this class, that all homework must be done solely by the student. Collaboration must be approved. If collaboration has been approved, *you must acknowledge the names of all collaborators and/or outside sources, e.g. any internet sites.* Also, there are many solutions to problem sets from previous semesters that are often used as sources of reference. However, if any of these are presented as a student's own work without proper acknowledgement, serious consequences could result. Information on plagiarism and the proper use of sources is available online at: http://www.extension.harvard.edu/resources-policies/resources/tips-avoid-plagiarism.

HOMEWORK SUBMISSION - FORMAT and more.

- Print the homework assignment from the course website, write your work and answers by hand, scan the document, and upload as a SINGLE PDF file; multiple page PDF files will not be accepted. Document size should not exceed 4mb (files larger than 4mb will be graded at your grader's discretion). All assignments must be uploaded to the course website. No email or paper submissions.

- Tips for creating, merging and sizing PDF documents are posted on the course website.

- Only uploaded assignments will be graded, so submit your final version; never upload a draft assignment. Upload your assignment to the corresponding assignment module. Once uploaded, REVIEW your assignment to ensure it is legible, complete and uploaded to the appropriate assignment module.

- Assignments will be graded electronically by the following Saturday.

- Solutions will be posted on the course website shortly after the assignment deadline.

- Assignment deadlines are outlined in the Homework Schedule. **LATE ASSIGNMENTS WILL NOT BE ACCEPTED.** To accommodate for instances such as personal or work issues or technical problems, we will drop your 2 lowest assignment grades.

DUE DATE – All assignments are due by 11:59 a.m., Saturday (ET) the following week. Assignment upload closes at NOON (ET).

SHOW ALL WORK – Please show all work for possible partial credit. If a single answer is incorrect, there is no way we can tell how you arrived at that solution. For example: if you use a calculator to solve 28% of 900, write down on your paper, "0.28 x 900 = 252".

NEATNESS – When completing your assignments, please be neat. Take pride in your work!

REVIEW – To further help you understand a concept, we suggest that you review all returned homework and compare any errors you made with the solution sets posted on the course website. Determine where you went wrong and reach out if you need clarification.

Finally, to help ensure success in the course, we strongly recommend that you:

1. Do the assigned reading before lecture
2. Attend and/or watch the lecture videos
3. Do the homework assignments and upload by the deadline
4. *Math is a subject that requires consistent attention to homework* - review your work and compare to the posted solutions
5. Utilize resources, such as on campus and/or online homework help sections, if needed.
6. Attend and/or watch quiz and final review sections
7. Visit the course website often and become familiar with its content

We are here to teach you and to help you! Do not hesitate to reach out to one of the MATH E-3 team members.

~The MATH E-3 Team

HARVARD UNIVERSITY EXTENSION SCHOOL
Math E-3 Quantitative Reasoning: Practical Math
Spring 2016 Syllabus

CONCEPTS COVERED*

Part I

Working with numbers/Everyday operations:
- Fractions, decimals, percents, rounding, exponents

Introduction to Algebra

Part II

Introduction to Statistical Concepts:
- Mean, Median, Mode
- Range Standard Deviation

Probability:
- Coins, Dice, Megabucks

Geometry

Part III

Normal Curve
Z-scores
Confidence Intervals
Hypothesis Testing

Part IV

Linear Growth
Applications of Linear Growth
Exponential Growth

*****This syllabus, including the concepts listed here, are subject to change. The concepts may also be presented in a different order than listed.