Math 1000-10 Quantitative Reasoning in Today’s World  
Course Syllabus  
Fall 2019, California State University, Los Angeles

Course Information

Instructor Information  
Instructor: Behzad Parviz  
Office Location: E&T A-312  
Telephone: (323) 343-6696  
E-mail: bparviz@calstatela.edu  
Office Hours: Tuesdays and Thursdays: 10:45 am - 12:15 pm  
Class Days/Time: Tuesdays and Thursdays: 12:15 – 1:30 pm  
Classroom: KH B1019  
Corequisite: Math 1001 if required by placement. You may enroll in any section of Math 1001  
Prerequisites: Placement based on multiple assessment measures  
GE Category: B4

Course Description

We are so glad you are joining us this semester for Math 1000 – Quantitative Reasoning in Today’s World! The main objective of this class is this course is to empower you with quantitative reasoning skills necessary to succeed in today’s competitive, data driven world. Data has become a critical and pervasive part of our lives. As the use of computers, phones, smart watches, and social media increases, so too does the data generated and collected about all of us! In this course, we will give you the tools to understand that data, use it, critique it, and draw conclusions from it.

In your life, you will have many, many decisions to make. What classes should you take? What medical or car insurance should you get? What jobs should you try for? Who should you vote for? How should you handle your money? How to start saving for mortgage or retirement? How to assess when to believe a statistical study. The better you are at analyzing situations that involve data, the better decisions you will be able to make. That’s what this class is all about!!

Course Objectives/Outcomes

Students who successfully complete this course will be able to do the following:

1. Gain competency with various visual displays of data, including data grouped in intervals.
2. Compute mean, median, mode, and standard deviation for data.
3. Compute maturity value, interest earned, and present value with respect to simple interest.
4. Compute the daily unpaid balance for credit card debt with respect to a prescribed interest rate and billing period, where the initial unpaid balance is given and intermediate payments and additional purchases are known.
5. Use the compound interest formula to find maturity value, interest earned, and present value. Compute annual yield, a.k.a. the effective interest rate.
6. Apply the maturity value and present value ordinary annuity formulae applicable to a sequence of equal payments at the end of equal time intervals where the interest conversion period coincides with the payment period. Apply them to payout annuities, sinking funds and the amortization of debt. For debt amortization, compute the unpaid balance after a prescribed number of payments and construct an amortization schedule showing how each payment is divided between interest and principal.

7. Use deductive reasoning in a pure mathematical context to draw conclusions and provide an irrefutable logical justification for them; from the formula for the sum of a finite geometric sequence, obtain formulas for the present value and the future value of an annuity.

8. Recognize when the techniques discussed are limited and when they can and cannot be applied to certain problems.

9. Formulate and communicate a position on a real-world question and use appropriate quantitative information in support of that position (for instance, to compare two or more investment alternatives using present value analysis).


11. List the elements of a discrete sample space, assigning appropriate probabilities to them whether they are equiprobable or not (e.g., spinner spaces). Identify the outcomes that comprise various events to compute their probability. Find the probability of the intersection or union of two events. Use the conditional probability formula when appropriate, including the calculation of posterior probabilities. Determine whether two events are independent. Compute expected value.

REQUIRED COURSE MATERIALS

Required Textbook
Title: Using and Understanding Mathematics: A Quantitative Reasoning Approach
Author: Bennett and Briggs
MyLab Course ID: parviz79802

The book is online only and access code can be purchased at the website www.mylabmath.com or at the Golden Eagle Bookstore. This access code will only work for this semester.

Required Materials
- Notebook with paper
- Pencils with erasers
- Scientific calculator with the ability to raise a number to an exponent (graphing calculators prohibited)
- Computer with access to Microsoft Excel. Students can purchase Microsoft Office with Excel through ITS for a discounted price here: (http://www.calstatela.edu/its/software/personal-computers) Excel is also accessible from any of the computer labs on campus.
COURSE POLICIES

Course Structure
This course is to be conducted entirely face-to-face. You will be assigned weekly homework.

Classroom Conduct
Please arrive to class prepared with all of your course materials, including notebooks, writing utensils, and a scientific calculator for quizzes, midterms, and the final. Participation points may be deducted for lack of preparedness, as well as for behaviors such as taking out your cell phone during class, talking while someone else is speaking, working on coursework for another course, and other disruptions. You may not leave the classroom during a quiz, midterm, or the final exam.

Quality of Work
This is a college-level math class; consequently, your work is expected to reflect this. You must show all work and simplify all answers to receive full credit. On quizzes, midterms, and the final, your solutions to problems are to be written in a logical manner using correct notation with steps clearly shown. Emphasis will also be placed on correct vocabulary. Points will be deducted from work that violates these principles as well as work that is disorganized or does not follow the instructions in the problem.

Emergency Information: TBA

ASSIGNMENTS & GRADING POLICY

Attendance and Participation
Attendance is mandatory. You are expected to attend class regularly and participate in class activities. If you have to be absent, please E-mail me to let me know the reason; otherwise, the absence will be treated as unexcused and you will lose points. Points will also be deducted for lack of participation in class activities, not completing assignments and homework, and leaving class early unexcused. Attendance and participation are worth 5% of your grade.

Homework
All odd numbered problems in the “BASIC SKILLS AND CONCEPTS” segments at the end of each covered section are mandatory. The even numbered problems are optional and you are able to get an additional 10% only if you do all of them and receive a minimum of “C” grade in all exams. You must obtain an access code and register for an account at the link provided under the “Textbook” section of this syllabus. It is important that you do your homework, since the quizzes, midterms, and final exam will be based on it. Homework is worth 15% of your grade.

Signature Assignments.
You will have two signature assignments due at the end of weeks 4 and 9, respectively. The signature assignments are worth 20% of your grade. A more detailed instruction for each of the signature assignment is posted on Canvas.

Quizzes
There will be weekly quizzes that will allow me to give you week-to-week feedback on your understanding of course material. Quizzes are worth 10% of your grade.
**Midterms**  
There will be two midterms given at the end of weeks 6 and 12, respectively. You will have 50 minutes to complete each midterm. The midterms will be based both on the lecture, quizzes as well as the homework and are worth 20% of your grade.

**Final Exam**  
There will be a comprehensive final exam that worth 30% of your grade. If you cannot make the date of the final, you must let me know beforehand with the reason why and provide the necessary documents. **I do not give incomplete grades.** If you do not take the final, you will receive an automatic grade of NC for the course regardless of other work you have completed.

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**GRADING CRITERIA**

The following is a breakdown of the weights of course components.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Midterm Exams (10% each)</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td>Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Signature Assignment #1</td>
<td>10%</td>
</tr>
<tr>
<td>Signature Assignment #2</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes (Weekly)</td>
<td>10%</td>
</tr>
<tr>
<td>Participation and attendance</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The following letter grades are guaranteed for each corresponding percent range:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>97-100%</td>
<td>A+</td>
</tr>
<tr>
<td>93-96.99%</td>
<td>A</td>
</tr>
<tr>
<td>90-92.99%</td>
<td>A-</td>
</tr>
<tr>
<td>87-89.99%</td>
<td>B+</td>
</tr>
<tr>
<td>83-86.99%</td>
<td>B</td>
</tr>
<tr>
<td>80-82.99%</td>
<td>B-</td>
</tr>
<tr>
<td>77-79.99%</td>
<td>C+</td>
</tr>
<tr>
<td>73-76.99%</td>
<td>C</td>
</tr>
<tr>
<td>70-72.99%</td>
<td>C-</td>
</tr>
<tr>
<td>67-69.99%</td>
<td>D+</td>
</tr>
<tr>
<td>63-66.99%</td>
<td>D</td>
</tr>
<tr>
<td>60-62.99%</td>
<td>D-</td>
</tr>
<tr>
<td>0-59.99%</td>
<td>F</td>
</tr>
</tbody>
</table>

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**COURSE COMMUNICATION**
Interaction with Instructor
The Instructor will make every effort to communicate frequently with students through email. Please make sure your email is up to date and accurate on GET.

Student Responsibilities
Students are responsible for being aware of all announcements that are made in class, such as changes in exam dates, due dates of homework and papers, and cancellation of class due to the instructor’s absence. Students are responsible for announcements made on days that they are absent.

Students must check their Cal State LA e-mail account regularly for information from the instructor and the Mathematics Department. Not doing this may result in missed deadlines or other consequences that might adversely affect students. Note that you can forward this e-mail account to any other account of your choosing.

Office Hours
Twice a week I will be available for office hours in person.

Turnaround/Feedback
During the week (M-F) I will check my messages and you can expect a response within two days.

UNIVERSITY POLICIES

Student Handbook
Information on student rights and responsibilities, academic honesty, standards of conduct, etc., can be found in Schedule of Classes for the current quarter visit the Cal State LA Schedule of Classes Information under Policies and Procedures.

Dropping and Adding
Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Students should be aware of the current deadlines and penalties for adding and dropping classes by visiting the GET home page. (Registrar news and information)

Reasonable Accommodation
Reasonable accommodation will be provided to any student with a documented disability who is registered with the Office for Students with Disabilities (OSD) and who requests needed accommodation. The OSD website can be found at http://web.calstatela.edu/univ/osd.

Academic Dishonesty
Cheating is not tolerated; if you are caught, you will be referred to the Student Conduct Officer for disciplinary action in accordance with university policy pertaining to academic dishonesty. This policy can be found in the university catalog in Appendix E - Student Conduct / Student Conduct Procedures. You are encouraged to study together and help one another on homework and the signature assignments, but the work you hand in must be your own. You may use a scientific calculator on quizzes, midterms, and the final (and, indeed, one is required), but books, notes, graphing calculators, cell phones, and other electronic devices are prohibited.
Smart Start Learning Community (Proactive Advising and Supplemental Instruction)
To assist you in successfully completing this course, the Math Department and Smart Start Communities will reach out to students who might benefit from additional advisement or supplemental instruction. If you receive an e-mail from Smart Start, you will be invited to a mandatory meeting with a Smart Start advisor and will invited to become part of the Smart Start learning community where students come together to strengthen their math, critical thinking, and study skills.

Resources to Help You Succeed

1. Take thorough notes. Use colored pencils or pens or highlighters to emphasize vocabulary and key points and steps. Be sure to actively participate in class discussions and activities.
2. If you have to miss class due to illness or emergency, let me know through E-mail and be sure to obtain your class notes and homework from a classmate.
3. Review your notes daily and ask me about what doesn’t make sense.
4. If you lose focus and miss part of a lecture, leave a space and ask a classmate or me to help you fill in the blank.
5. Attend office hours. This is your time to get help on your homework and clarify things from the course material that are confusing you.
6. Form study groups. Bouncing ideas off of each other and studying together is a great way to succeed.
7. Check out videos on YouTube and visit the Khan Academy (https://khanacademy.org).
8. EdReady is another great website that can help you brush up on your algebra skills.
## COURSE PACING GUIDE

<table>
<thead>
<tr>
<th>Week</th>
<th>Sections to Cover</th>
<th>Exam/Assignments/Activities</th>
</tr>
</thead>
</table>
| 1    | • Course Introduction and Syllabus and Signature Assignments Discussion  
      • 2A Understand, Solve, and Explain  
      • 2B Extending Unit Analysis |  |
| 2    | • 3A Uses and Abuses of Percentages  
      • 3B Putting Numbers in Perspective |  |
| 3    | • 3D Index Numbers: The CPI and Beyond  
      • 3E How Numbers Can Deceive: Polygraphs, Mammograms, and Many more |  |
| 4    | • 4A Taking Control of Your Finances  
      • 4B The Power of Compounding | **Signature Assignment #1** |
| 5    | • 4C Savings Plans and Investments  
      • 4D Loan Payments, Credit Cards, and Mortgages  
      • Review for Midterm Exam #1 |  |
| 6    | • 4E Income Taxes and MIDTERM EXAM #1 | **REVIEW FOR MIDTERM EXAM #1** |
| 7    | • 4F Understanding the Federal Budget  
      • 5A Fundamentals of Statistics |  |
| 8    | • 5B Should You Believe a Statistical Study?  
      • 5C Statistical Tables and Graphs |  |
| 9 | • 5D Graphics in the Media | **Signature Assignment #2** |
|   | • 5E Correlation and Causality |
| 10 | • 6A Characterizing Data | **REVIEW FOR MIDTERM EXAM #2** |
|   | • 6B Measures of Variation |
| 11 | • 6C The Normal Distribution |
|   | • 6D Statistical Inference |
| 12 | **MIDTERM EXAM #2** |
|   | • More on Statistical Inference |
| 13 | • 12A Voting: Does the Majority Always Rule? |
|   | • 12B Theory of Voting |
| 14 | • 12C Apportionment: The House of Representatives |
|   | • 12D Dividing the Political Pie |
| 15 | **FINAL EXAM REVIEW** |
|   | • 12D and Final Exam Review |
| 16 | • Final Exam Review Continued |

**Important Dates:**
First day of instruction: Aug 20
Last day for students to add or drop a course: Sep 4.
Withdrawal with a W: Sep 5 – Nov 18
No classes: Nov 25-Nov 29.
Last day of instruction: Dec 5
Final Exam: TBA
For other dates and deadlines, see the Fall 2019 schedule:
http://www.calstatela.edu/registrar/university-scheduling-office#dates-and-deadlines