

Quantitative Reasoning and Technological Literacy (QRTL) II

Instructor

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[Note I will be working from home several days each week, so email/SkypeChat/SMS are better ways to reach me than phone]

Virtual Office Hours: Since we are working virtually, simply text or Skype me if you want to meet and we will arrange a mutually convenient time as quickly as possible. See my contact information (above or on the right side of the D2L course page). I am also happy to meet any student face to face. Let me know by email if you want to meet physically and we will schedule a mutually convenient time.

Official Course Description

In this course students continue the study of issues in the sciences, social sciences, and management in which quantitative data plays a significant role. This second course in QRTL will emphasize more the role of computer technology. Extensive use will be made of computer tools such as Web 2.0 technologies, database, spreadsheet and programming languages.

My comments on the Official Course Description

My focus for the course is on using computer tools to analyze and interpret data in several contexts. We will study three kinds computing: Scientific computing, Business computing, and Visual computing to see how computers can be used in these very different contexts to accomplish meaningful and useful tasks. OK, that sounds vague as well. What we really are going to do is: [1] some data analysis and statistics using Excel (this is scientific computing); [2] some database design and manipulation in MS-Access (this is business computing); and [3] some design of videos (animation like South Park) and maybe simple game design (visual programming). The first two parts are useful skills to add to your resume; the last part is fun (well fun for almost everyone).

Required Materials

[Access to the Internet and MS-Access 2010 & MS-Excel 2010](#). If you do not have a copy of Access and Excel 2010 available, please contact me to discuss alternate software.

Do not overlook this issue. Last quarter I tried to support students using version of Open Office on their Macs. This did not work out very well due to differences between MS-Office and Open Office. **If you must do your work on a Macintosh, or you have no way to access (no pun intended) MS-Access, we need to discuss this up front.**

Textbook: none

Prerequisites: LSP 120

LSP 121 is a Liberal Studies requirement for freshman and transfer students that entered DePaul University on or after the autumn quarter 2006. When taking LSP 121, you may “reduce by one the number of courses they must take to meet their Learning Domain Area requirements. This course reduction can come from any one of the six Learning Domains, as long as the student still takes at least one course from each Domain and as long as the student still completes the laboratory and quantitative requirements in the Scientific Inquiry area.”

If you feel you already know the materials presented in this course, there is a placement exam you may take. **You must take this exam within the first week of classes to waive the course this quarter.** If you pass this exam, you will be waived from taking this course. Consult the qrc.depaul.edu website (click on Links in the left navigation bar, click on LSP 121 Placement Exam Study Guide in the list) for additional details. **If you plan to take this placement exam and have not already done so, then drop the December course, take the exam, and take the course in winter should you not pass.**

Objectives of course

This Quantitative Reasoning and Technological Literacy course is designed to help you to become a more confident, critical, and capable user of quantitative information of all kinds. In particular, it will help you to

- critique quantitative arguments, whether given numerically, graphically, or in written form
- manipulate data via the creation and use of relational databases
- become acquainted with basic descriptive statistics and probability
- understand the basic concepts of algorithm creation and programming

Grading Breakdown:

- Quizzes/Participation – 20%

There will be a Getting Started quiz and a quiz for most of the Course Modules. Your quiz score will be divided evenly among these quizzes for 16% of your grade. The participation grade is 4%. You earn it by being active on the discussion board and in particular by supporting other students by engaging with them and, when possible, answering their questions about course material (see expanded description below).

- Assignments – 30%

There will be one assignment for each course Module. Assignments will normally be worth 50 points and will be weighted evenly over the course.

- Exam – 30%

The course has a proctored final exam can be taken between Thursday March 14 and Tuesday March 19. More information about this exam is provided below.

- Final Project – 20%

The final project is due Thursday March 21 @ 11:59pm.

An expanded description of each follows:

Quizzes -- **You must take and score 100% on the Getting Started quiz before you are permitted to see any other course material.** This first quiz ensures you have read and have basic understanding of the course syllabus and rules. I apologize to those of you who would be reading this syllabus and related material carefully anyway. I've found that more than half of the students in LSP 121 skim this material and never come to understand what is expected of them. So I am requiring 100% on this first quiz in order to help them better explore the course rules. After this first quiz (which must be retaken until you score 100%), all other quizzes will be timed and may be taken only once. Your 100% on the first quiz does count toward your course grade--so everyone starts out this week with an A in the course.

Participation – As this is an online class, it does not require we meet or interact at specific times. However, there is a discussion board for Q and A about assignments and related On-Line learning discussion. Note that you start with zero points for participation and work up from there. How can you earn participation karma?

- Contribute “found resources” such as websites and tutorial videos that may be helpful to other students trying to understand the course material.
- Rate posts by other students using the rating stars in the right column of the discussion board (I think there is a D2L bug and this does not work on all brands of browser.)
- Track the posts you’ve read and engage in ongoing give and take conversation.
- Provide useful and timely feedback and advice to other students as they ask questions about course materials and related topics.

I do not have a quantitative participation rubric (X posts get you Y points) as people simply game a rubric like that. Over time it becomes very clear who is engaged in conversation and who is not. I will assign a participation letter grade based on this engagement. For participation, everyone starts with zero points and earns from there. You don’t need to get anal about these points because [1] if you are on the discussion board and generally participating, you will be fine; and [2] it is only 4% of your grade.

Exam – The final exam must be taken in order to receive a grade in the course. **You must receive a grade of 40 or greater on the exam to pass the course.**¹ My exams tend to be difficult, but I curve them if necessary (and it usually is necessary.) We will have a limited number of seats set up for DePaul exam proctoring, but you will have over a half dozen optional time slots between March 16 and March 20 when you can schedule the exam at the Loop Campus.

CDM provides support for finding a proctor if you are unable to take the exam at the Loop Campus.² Detailed information about exam scheduling will be made available early in the course. Off-site proctoring information is at this footnote:³ **Any student requiring PLuS support for the exam should contact me with the appropriate paperwork early in the course.**

¹ The reason for this rule is that none of the other work in the course is monitored. While none of you, I am sure, would have someone else do your work, I have no way of policing that. For the exam you will have to do your own work.

² If you are taking the course from outside of Chicago, please send me an email early in the course and let me know your situation.

³ Here is a page about CDM proctoring for out of town exams <http://goo.gl/eljE7> and a linked page about finding a proctor <http://goo.gl/vGPf6>. Note again, if you can make it to the Loop campus for the exam, this does not apply to you.

If you cannot take the exam due to illness or family emergency, **you must inform me in advance to be assured your absence is accepted.** In such situations, you will typically receive an incomplete grade in the course, and we will make arrangements for you take the final exam as soon as possible the next term.

Project – This is an individual project (not group work) that must be submitted into the D2L Dropbox prior to end of day March 18. LSP 121 Tutoring (and my office hour support) are available to help you with this project.⁴

Assignments - There will be assignments on the material presented. Their purpose is to give you practice on the skills we are learning, to explore some ideas more thoughtfully and deeply, and to prepare for the quizzes/exam. The assignments are posted on D2L/Content and will be made available at the beginning of each Module. Homework assignments must be done individually and are due by the due date posted on D2L. **They will not be accepted after the solutions are made available on-line, and I will strive to make solutions available shortly after each due date.**

Grading Scale:

This grading scale is approximate. I reserve the right to round the edges up or down in order to make sure two students with almost exactly the same numerical grade do not receive different letter grades.

93 - 100	A	80 - 82.9	B-	67 - 69.9	D+
90 - 92.9	A-	77 - 79.9	C+	60 - 66.9	D
87 - 89.9	B+	73 - 76.9	C	50 - 59.9	F
83 - 86.9	B	70 - 72.9	C-		

Note again: a student must receive a grade of 40 on the final exam in order to pass this course.

Pacing:

Students must complete work as assigned for the due dates specified. **This is not a self-paced course.** Late submission of assignments will result in a significant grading penalty or no grade at all if the answers have already been distributed. To the extent assignments are posted early, student are encouraged to submit them ahead of time.

⁴ Note that there is no LSP 121 tutoring during exam week, so you need to get to them prior to that.

Submitted Materials:

You should keep a copy of all materials you submit to the D2L Dropbox until the end of the course. Last quarter we experienced the disappearance of some materials (I think it was human error, but who knows.) If your material disappears, you need to be able to provide it again. **This issue is most critical if you are doing work on a friend's or lab computer.** Make sure to email or archive a copy of your work for yourself. Do not write over an old assignment when you create a new one; save each assignment under a different file name.

You are responsible for making sure you received appropriate grades for work you submitted. **You have one week after the grades are posted to question a grade.** You question a grade by sending email to me about it that is dated less than a week after the grade was posted. Grades are locked in after one week if email is not sent to me at the appropriate time.

Incomplete and FX Grades:

Grades of Incomplete are given only in cases of medical emergency or other highly unusual emergency situations. Please note that University guidelines require that you must be earning a passing grade at the time you request an incomplete grade. You should have completed most of the course, with at most one or two major forms of evaluation missing. Incompletes revert to an F if they are not resolved within one quarter. DePaul CDM policy also is that all incompletes must be requested by the student using an online form. See CDM grading policies at <http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>

Academic Integrity:

University policies on academic integrity will be strictly adhered to. Violations of academic integrity, including (but not limited to): cheating; plagiarism; fabrication of data; and complicity, are not tolerated. It is expected and understood you are familiar with DePaul's Academic Integrity Policy, at: <http://academicintegrity.depaul.edu/AcademicIntegrityPolicy.pdf>, which defines the terms used above and provides a complete statement about the rules. Consult the Academic Integrity website for further guidance: <http://academicintegrity.depaul.edu/>

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If that occurs, reasons for the change and options available to students will be thoroughly addressed on the course D2L site. Changes are not made lightly as this syllabus is considered a contract between instructor and student.

Tentative Schedule

Week 1:	Module 0:	Overview of the course, self-assessment, student presentations, and introduction to databases. Students MUST complete this module by scoring 100% on the Module 0 quiz before Module 1 material is made available. The Module 0 quiz may/must be taken repeatedly until a score of 100% is achieved (other quizzes may only be taken once.)
Week 2:	Module 1:	<u>Overview of Scientific Computing</u> , Data Analysis and Simulation
Week 3:	Module 2:	Using Descriptive Statistics for data analysis
Week 4:	Module 3:	Using Correlation for data analysis
Week 5:	Module 4:	Using Probability and Risk Analysis
Week 6:	Module 5:	<u>Overview of Business Computing</u> and Data Management. Data Analysis with Relational Databases using simple database queries
Week 7:	Module 6:	Working with Multiple Database Tables, complex Queries
Week 8:	Module 7:	Database Forms and Reports
Week 9:	Module 8:	<u>Introduction to Visual Computing</u> and Algorithms
Week 10:	Module 9:	More complex (and fun) Visual Programming using Scratch
March 18	Project Due:	Comprehensive Project covering (Modules 1-8) due March 18
3/16-3/20	Exam Dates:	Proctored comprehensive final exam (March 16-20 options)

Do note this is a lot of material in a short time. If you fall behind it is extremely difficult to catch up.