

## LSP 121: Quantitative Reasoning and Technological Literacy

Fall 2013

Version Date: September 11, 2013

### 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 (statistical and probability), Business computing (database and data management), and Visual computing (visual programming of animations [Think: South Park]) to see how computers can be used in these very different contexts to accomplish meaningful and useful tasks.

If that sounds vague as well, here is what we are really going to do:

1. Three modules on data analysis, statistics, and probability using Excel (this is the scientific computing);
2. Some database design and manipulation in MS-Access (this is business computing); and
3. Some programming of animated videos (bad animation like South Park) and maybe a little simple game design (this is visual programming).

The first two parts are useful skills to add to your resume; the last part is fun (well fun for almost everyone) and will open up many possibilities for you to pursue computer animation further, if you get interested.

### 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

### 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 your 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](http://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.

### Required Resources and Materials

Access to: D2L at DePaul; **MS-Access 2010**; and **MS-Excel 2010** (both part of MS-Office 2010)<sup>1</sup>. You will need to use a Windows PC for this course. **Large portions of the course cannot be completed on a Mac or Linux computer.**

**All three of these requirements can be met by using DePaul University labs.** If you are unable to use a DePaul lab, and if you do not have a copy of MS-Access 2010 and MS-Excel 2010 for Windows<sup>2</sup> available to you, **please contact me to discuss alternates**--after reading this whole section.

We will use Desire2Learn (D2L) as our Course Management System. All assignments and course materials will be provided through D2L; Assignments will be submitted on D2L; and Quizzes will be taken online in D2L. So you need Internet access. If you are going to be traveling during part of the course, you will need Internet access from your travel location as you will have assignments due each week.

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<sup>1</sup> Note that MS-Access is not included in all versions of MS-Office for Windows. Check to see if your version includes MS-Access. MS-Access is not included in the Mac versions of MS-Office, and MS-Excel on the Mac handles some of the features we will use very differently from the Windows version.

<sup>2</sup> I have been told that MS-Office 2013 supports your course needs well, but I have not used this version myself. You may use Office 2013 if you have it. The free online version at [www.live.com](http://www.live.com) does not have the features we need for the course.

I do not permit students to submit materials in my section generated in open source spreadsheets or databases. I've previously tried permitting this and it led to too many problems due to differences in how each package handles the assignments, and my lack of ability to troubleshoot problems for students on these other platforms. Students may submit using **MS Office 2007** (for Windows), or **MS Office 2008** or **2011** (for the Mac). **However, if you are using any of these three versions note that:**

1. My examples will all be shown in MS Office 2010; and
2. I will not be very good at helping you troubleshoot differences between your version and my version--I am not a Mac person and am sometimes clueless as to why your Mac won't do what we think it should be doing.
3. **You will not be able to do the three database Modules on your Mac at all as MS-Access is not offered on the Mac.** For those three modules (and for your work on the final exam) you will have to use a PC with Windows.

**Do not overlook this issue. 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.** You do not want to be past the drop date for the class and THEN start discussing this with me.

## Reading and Viewing Material

We will provide you with access to necessary reading materials. There is no text to purchase.

As well as materials I will make available on D2L, I have been compiling a collection of LSP 121 oriented tutorial videos on YouTube. There is a link to this collection from the D2L menu. Little, if anything, will be assigned to you from YouTube. But you are encouraged to use those videos and other online reference materials to supplement what is provided in class.

There is a huge FREE eBook collection available for your use through the DePaul Library. We will make use of some reading material out of this collection. And you are encouraged to peruse both Books24x7 and Safari for additional materials that may be helpful to you. Again, the theme here of for you to NOT assume that what is provided in class is the only material to look at: there are many resources available to you that may be helpful. **Further, as you find such resources, you are encouraged (think: more participation credit!) to share them with the class.**

**Instructor**

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  - **Phone:** 312.362.6103
- [Note: email/SkypeChat/SMS (in that order) are better ways to reach me than phone]*

**Virtual Office Hours:**

It is my intention to be very available to you in this course. But since we are working virtually, physical office hours make little sense. So:

- I will hold office hours every **Tuesday 9:05 to 10pm** (in CDM 801, a lab) **and Friday noon to 1pm** (in CDM 841, my office). You may visit in person or you may connect virtually via Online Rooms (see menu above).

**Other Ways to Get Help:**

- Post course content questions to the D2L discussion board so I can answer you and share the answer with the class [posting to the Board is better than emailing me as someone else in the class might answer you before I do--plus any answer I give is available to everyone];
- Text or Skype or email me with questions;
- Text or Skype or email me if you want to meet face to face or virtually outside regular office hours and we will arrange a mutually convenient time as quickly as possible;
- If you'd prefer to talk by phone, let me know and we will schedule a call.
- Email me if the question is too complex to put in a text message or too personal to post to the discussion board.

**Personal:**

Check out my Facebook page to get a sense of what my three principal distractions are these days.

## Grading Breakdown:

### Quizzes -- 16%

There will be a Getting Started quiz and a quiz for **most** of the Course Modules. Your quiz score will be divided evenly among all quizzes for 20% of your grade.

**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.

I anticipate seven quizzes. No matter how many quizzes there are in the end, they will be summed to total 16% of your grade.

### Assignments -- 42%

There will be one assignment for each course Module, though assignments may have multiple parts to them. Assignments will normally be worth 50 points and will be weighted evenly over the course. The purpose of the assignments 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. **Assignments 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.**

### Comprehensive Project--10%

LSP 121 sections are required to have a comprehensive project. In this section that project will be comprehensive for Modules 1 through 6 and will be assigned late in Module 6, but it will also overlap a bit with Module 7. You will have one week to do this project.

### Participation--2% to 4%

Students who participate normally in the course--complete any/all assigned postings to the discussion forum--will receive full credit for that 2 percent of their course grade. However, to encourage

extraordinary participation, there is an additional 2 percent of points any student can earn by being an active and engaged participant in the course discussion boards.

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. How can you earn participation points?

- Contribute “found resources” such as websites and tutorial videos that may be helpful to other students trying to understand the course material. (Note: a list of links that you haven’t actually checked out yourself is not useful; links you have explored and present with enough annotation to describe the value provided by it may well be useful.)
- Provide useful and timely feedback and advice to other students as they ask questions about course materials and related topics.
- Providing examples of how the material from a Module is used in real life and may be relevant to you or other students. The point of this bullet is that it is more interesting to learn stuff (say: probability or correlation) if you can see how you are going to use it again in your life after this course. If you can help other students make that connection, you are providing real value.

I am not going to keep a running score for these extra points; I will go back through the discussions at the end of the course and make my evaluations. So I won’t be able to tell you how you are doing (at least not quantitatively.) But my advice about it is this: If you try to post stuff just to earn points, it is going to be obvious that is what you are doing--and you will annoy a lot of people along the way. If you decide to become an active and contributing member of our online community using the three bullets above as a guideline, then the participation credit will take care of itself.

**Anyone who asks me late if the course if extra credit is available will be told: you could have been earning extra credit all along by supporting other students on the Discussion Board.**

### Exam – 30%

The course has a proctored final exam and can be taken between Thursday November 21 and Saturday November 23. The final exam must be taken and **you must receive a grade of 50 or higher (after the curve) on the exam to pass the course.**<sup>3</sup> My exams tend to be difficult, but I curve them if necessary (and it usually is necessary.)

The exam is offered two ways:

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<sup>3</sup> The reason for this rule is that none of the other work in the course is proctored. 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 be proctored doing your own work.

1. It is preferred you take the exam at the Loop Campus. We will set up specific exam times that you can sign up for. We will have four computers set up for the exam, so a maximum of four students can sign up in each time slot. (This has not proven to be a problem in the past.) We will make the signup sheet available roughly a two weeks before the exam.
2. If you cannot make it to the Chicago loop during these time slots, you may arrange for your own proctor following the guidelines established by CDM for external proctors. This will be the solution for any student who is taking the course from outside of Chicago, and may be the preferred solution for someone from the deep suburbs or significant work restrictions. **Note that you are responsible for any costs incurred hiring the proctor.** DePaul CDM's proctoring policy is here: <http://goo.gl/eljE7> and guidelines for finding a proctor are here: <http://goo.gl/vGPf6>. If you anticipate taking the exam with your own proctor I encourage you to contact me by email as soon as you know this so I can make sure we are providing appropriate guidance to help you find a proctor.

Note: if you can make it to the Loop campus for the exam, this proctor info does not apply to you.

**Any student requiring PLuS support for the exam should contact me with the appropriate paperwork early in the course.**

If you cannot take the exam due to illness or family emergency, **you should--if at all possible--inform me in advance to be assured your absence is accepted<sup>4</sup>**. In such situations, you will typically either be encouraged to apply for an incomplete in the course, or we will make arrangements for you take the final exam as soon as it can be mutually arranged.

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<sup>4</sup> An unverified no-show will not automatically be accepted.

### 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	90 - 92.9    A-
87 - 89.9    B+	83 - 86.9    B	80 - 82.9    B-
77 - 79.9    C+	73 - 76.9    C	70 - 72.9    C-
67 - 69.9    D+	60 - 66.9    D	
0 - 59.9    F		

**Note again: a student must receive a curved grade of 50 on the Final Exam in order to pass this course, independent of what the grades have been earned on other course submissions.**

### Tutoring

DePaul provides tutoring for LSP 121 in the Lincoln Park campus computer labs. I've asked about online or telephone tutoring as this is an online section and have not been provided with a satisfactory answer.

The Fall 2013 tutoring schedule is located on our course D2L homepage.

### Pacing:

Students must complete work as assigned by the due dates specified. **This is not a self-paced course.** Late submission of assignments may result in a significant grading penalty or no grade at all if the answers have already been distributed.



### Submitted Materials:

**Students should keep a copy of all materials submitted to the D2L Dropbox until the end of the course.** Occasionally we experience the disappearance of submitted materials (I think it is 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 lab or friend's 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.** Every single quarter I've taught this course someone has ended up completely redoing an assignment because they did not follow these principles.

Students are responsible for making sure the appropriate grade has been assigned for work submitted. **You have one week after the grades are posted to question a grade.** Question a grade by sending email to the instructor that provides a detailed breakdown as to why the grade should be changed. Grades are locked in after one week.

### A Note about Online Learning

**Online learning requires more self-discipline and more personal initiative than does a traditional classroom course.** Further, **an online student will work just as many hours--and very likely more hours--to learn the subject matter.**

If you are taking this section under the impression you can add an additional course without the time commitment one must make to a classroom course, you are mistaken. And that mistake will result in either a poor grade, or in you dropping the course later and losing the financial and time investment you have made.

**It is strongly advised that you self-reflect as to whether an online course is the right fit for you given your personal work habits and other life commitments you have this Fall.**

### Tentative Schedule

<b>Week 1:</b>	<b>Module 0:</b>	<b><u>Overview of the course</u></b> , self-assessment, student introductions, and LSP 120 concepts review. <b>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 (all other quizzes may only be taken once.)</b>
<b>Week 2:</b>	<b>Module 1:</b>	<b><u>Overview of Computer-based Data Analysis Simulation</u></b> , <b>Measures of Central Tendency</b> , and <b>Normal Distribution</b> .
<b>Week 3:</b>	<b>Module 2:</b>	<b>Descriptive Statistics</b> and <b>Correlation</b> for data analysis
<b>Week 4:</b>	<b>Module 3:</b>	<b>Probability</b> and <b>Risk Analysis</b>
<b>Week 5:</b>	<b>Module 4:</b>	<b><u>Overview of Data Management</u></b> . Data Analysis with <b>Relational Databases</b> using simple database queries
<b>Week 6:</b>	<b>Module 5:</b>	Working with <b>Multiple Database Tables</b> , and <b>Complex Queries</b>
<b>Week 7:</b>	<b>Module 6:</b>	<b>Database Forms</b> and <b>Reports</b>
<b>Week 7-8</b>	<b>Project:</b>	<b>A comprehensive project will be assign that will, in part, overlap with Modules 6 and 7.</b>
<b>Week 8:</b>	<b>Module 7:</b>	<b><u>Introduction to Visual Computing</u></b> and <b>Algorithms</b>
<b>Week 9:</b>	<b>Module 8:</b>	Programming <b>Properties</b> and <b>Behaviors</b>
<b>Week 10:</b>	<b>Module 9:</b>	Programming <b>User Interactions</b>
<b>11-21/23</b>	<b>Exam Dates:</b>	Proctored comprehensive exam (Options to take on Nov 21-Nov 23)

### Course Withdrawal

Students who withdraw from the course do so by using the Campus Connection system (<http://campusconnect.depaul.edu>). Withdrawals processed via this system are effective the day on which they are made. Simply ceasing to attend, or notifying the instructor, or nonpayment of tuition, does not constitute an official withdrawal from class and will result in academic as well as financial penalty.

### Excused Absence

In order to petition for an excused absence, students who miss class due to illness or significant personal circumstances should complete the Absence Notification process through the Dean of Students office. The form can be accessed at <http://studentaffairs.depaul.edu/dos/forms.html>. Students must submit supporting documentation alongside the form. The professor reserves the sole right whether to offer an excused absence and/or academic accommodations for an excused absence.

### 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 students must be earning a passing grade at the time one requests an incomplete grade. Students 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 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>

### 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.

### Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at:

Student Center, LPC, Suite #370  
Phone number: (773)325.1677  
Fax: (773)325.3720  
TTY: (773)325.7296

### 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 students are familiar with DePaul's Academic Integrity Policy. The Policy can be found at: <http://academicintegrity.depaul.edu/AcademicIntegrityPolicy.pdf>. It defines the violation terms used above and provides a complete statement about the rules.

Consult the Academic Integrity website for further guidance: <http://academicintegrity.depaul.edu/>

The university and CDM policy on plagiarism can be summarized as follows: Students in this course should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work any assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

### Online Course Evaluations

Instructor and course evaluations provide valuable feedback that can improve teaching and learning. The greater the level of participation, the more useful the results are. As students, you are in the unique position to view the instructor over time. Your comments about what works and what doesn't can help faculty build on the elements of the course that are strong and improve those that are weak. Isolated comments from students and instructors' peers may also be helpful, but evaluation results based on high response rates may be statistically reliable (believable).

As you experience this course and material, think about how your learning is impacted. Your honest opinions about your experience in and commitment to the course and your learning may help improve some components of the course for the next group of students. Positive comments also show the department chairs and college deans the commitment of instructors to the university and teaching evaluation results are one component used in annual performance reviews (including salary raises and promotion/tenure). The evaluation of the instructor and course provides you an opportunity to make your voice heard on an important issue – the quality of teaching at DePaul. Don't miss this opportunity to provide feedback!