# LSP 121 - Quantitative Reasoning and Technological Literacy II

**Spring 2013-2014**

**Tu Th 1:00– 2:30 pm**

**Section 308**

**Mary Jo Davidson, PhD**

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**Classroom – Levan Room 306 – Lincoln Park Campus**

**Lab Assistant –**

**Office Hours:**  **In SAC 235 - computer lab**
**No appointments are required for office hours.**

*Tuesday*   *2:45* → *5:00 pm*
        *and*
*Thursday*  *2:45* → *5:00 pm*

**Last date to drop this class (or any Spring 2014 class) with tuition refund: April 11**

**Last date to withdraw from class (or any Spring 2014 class): May 16**

## Changes to Syllabus

This syllabus is subject to change as necessary during the quarter.  If a major change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and communicated via email.

# **Table of Contents**

## Course Description

In this course, students will 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, however, will emphasize more the role of computer technology.  Extensive use will be made of computer tools such as Access, SPSS, programming environments, Word, and Excel.

## Objectives of this 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

- continue 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 computer programming

## Prerequisites

- Passing grade in LSP 120 or
- or  BMS 125 or 126, MAT 147 or 148 or 49, MAT 150 or 151 or152, MAT 160 or 161 or 162, or MAT 170 or 171 or 172 or MAT 242
- or  successful completion of the MTL1 Proficiency Exam

## If you feel that you already know the material presented in this course….

There is a placement exam you can take to exempt yourself from this class.  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 Quantitative Reasoning Center website http://qrc.depaul.edu for more details.

## Tentative Class Schedule - Subject to Change

| | | |
|---|---|---|
| Sessions   1 - 8 | Apr 1,3,8,10,15,17,22,24 | Basics & Statistics/Probability |
| Session   9 | Apr 29 | Basics & Statistics/Probability Exam |
| Sessions 10 - 15 | May 1,6,8,13,15,20 | Databases |
| Session   16 | May 22 | Databases Exam |
| Session   17 - 20 | May 27,29 Jun 3,5 | Algorithms/Computer Programming |
| Session   21 | Thursday June 12  11:45 am → 2 pm | Algorithms/Computer Programming Exam |

## Textbooks
There is no required textbook


## Electronic Resources Students Must Have
Students will need the following electronic resources:

- A place to store your work (Flash drive, "cloud" account). If you bring a flash drive to class, please make sure that it is labeled with your name and email address.
- Access to the software (personal or from DePaul Lab) we will be using at the desk top
    - MS-Access (2010),
    - MS-Word (2010),
    - MS-Excel (2010),
    - SPSS (available at DePaul labs),
    - file-compression software(e.g. WinZip)
    - pdf reader software (e.g. Adobe Reader)


## Grading Policy
Grades will be based on the numbers of points earned by the student during the quarter.  Approximately 1000 points will be available.

*Grading Scale - Based on 1000 Possible Points*

Grade Mapped to Points Earned :

- A      930 and above
- A-    929-900
- 
- B+    899-870
- B      869-830
- B-    829-800
- 
- C+   799-770
- C     769-730
- C-   729-700
- 
- D+   699-670
- D     669-600
- 
- F     599        and below

## Sources of Points   (approximate)

- 55% Exams (There will be three exams)
- 20% Individual Homework Assignments
- 15% Team Assignments (including evaluation of participation by team members)
- 10% Class Attendance and Contribution

*An expanded description of each Source of Points:*

*Exams*
There will be three exams, all given during class time. Each exam will cover a different class segment – Statistics/Probability, Databases, or Algorithms/Computer Programming. Exams are not cumulative.

There are no makeup exams in this course. If you cannot take an exam due to illness or family emergency, you must inform me before the exam by email.

Students must complete all three exams.

The last exam will be given on Thursday, June 12 from 11:45 am to 2:00 pm and you must complete the exam during that time.

*Individual Homework Assignments*
During many weeks there will be an assignment to be completed by each student outside of class. The purpose of these assignments is to give individual outside-of-class practice on the skills we are learning and to explore some ideas more thoughtfully and deeply. These assignments also provide the opportunity to complete work similar to exam problems. The assignments will be available as D2L dropboxes.

Individual homework assignments must be done individually.

Assignment due dates are stated on D2L as part of the information about the dropbox. Any student who submits an assignment after the due date will be assessed a penalty.

Late submissions of individual homework assignments will lose 20% per day, during the five days after the due date and will not be accepted after that (0 credit).

*Team Assignments*
Each student in this class will be a member of a team. Each student will be assigned to a team on the first day of class.

Team assignments will be part of the work completed by all students. These team assignments will be available via D2L dropboxes.

Each team assignment submission must include the name of the team and the name of each group member who participated in the assignment.

All team participants will receive the same grade (number of points) for a team assignment, unless he or she did not contribute to completion of the assignments, as reported in the submission. Team members not included in the participants list on the final submission will receive 0 points for the assignment.

 All class members will be expected to contribute to team assignments. At the end of the quarter, team members will be asked to evaluate the contributions of their team mates as a part of the grading process.

While it may be tempting to divide the work of the team assignment so that each team member completes a portion of the assignment and the parts are consolidated before submission, this division is not a good learning strategy. Either all team members should work through the team assignment together during class or each team member should complete the entire team assignment, then work with all team members in class to prepare a team solution to the assignment.  Time will be set aside during class sessions to allow the teams to work together on the assignment. Teams should remain in the classroom during the class time allowed for team work.

No late team work will be accepted.

*Class Attendance and Contribution*
Class attendance is important. During each class session a sign-in sheet will be circulated in class. You will receive points for each class session you attend. You will not receive points for the class if you are absent for any reason. There are no "excused" absences.  It is the student's responsibility to make sure that they personally sign the sheet each day they attend class. (See also *Plagiarism and Cheating*)

Class contribution goes beyond attendance. Students will be expected to prepare for class by completing assigned readings and reviewing class materials, such as lecture slides.

## Desire To Learn (D2L)
The Desire To Learn website **http://d2l.depaul.edu** is a secure site for course management. It contains all class materials. You must use your CampusConnect ID to login to D2L.

The DePaul technology support team recommends that you use the Mozilla Firefox browser to access D2L.

We will be using the Home, Content, Discussions, Dropbox, Grades, Classlist, and More | Checklist components of D2L. See the D2L Intro file (found in the D2L | Content | Start Up and Basics section) for more details on these components, including screenshots.

*Content*
The Content component will be organized by class segment – Start-up and Basics, Statistics and Probability, Databases, and Algorithms and Computer Programming. While the specific location may vary from segment to segment, each of the following content will be found in each segment.

An *agenda* for each class session will be available. The session agenda will list lecture notes to be covered for that class, as well as reminders and other items. If you must miss a class, you should consult the agenda for that class session to determine what you must do to catch up with the rest of the class.

You will find *pdf versions of the lecture notes* for each class session..  In most cases, there will be two versions of the lecture notes – a full slide version (one slide per page) and handout version (four slides per page). These pdf files can be downloaded and/or printed to give the student an outline of the material to be covered as well as providing a place to take notes during class.

*Examples* are included to provide data for practice with tools and concepts.

The content section includes *Required Readings* that you are to complete to provide further background on the section material.  The assignments are listed in a checklist for the each segment.

*Links* provide useful sites related to class material.

*School Solutions to Assignments* provide a model for the correct answers for each particular assignment. These will be posted after the assignment is due and grades are posted.

*General Feedback to Assignments* comments are posted to provide as much feedback as possible to all students.

*Exam prep* materials will be posted as each exam approaches.


### Discussions

There will be a discussion thread to ask questions of Dr. Davidson. Responses will be posted on the discussion thread for all class members to see.

There will also be a discussion thread for each team to use as a place for all members of the team to communicate and collaborate. This thread will be visible to team members only.


### Dropbox

You will use D2L dropboxes to find assignment descriptions and source files, submit assignments, and receive feedback on them.

There will be two D2L dropboxes for each **team assignment**…a workspace dropbox and a Final dropbox.

Team members may use the workspace dropbox to collaborate, adding their versions of the assignments to the dropbox, reviewing the work submitted by other team members, and creating (or choosing) a final version of the assignment to submit to Dr. D. for evaluation/grading. Any number of files can be added to/contained in the workspace dropbox. It will important for the team to agree on ways to organize the contents of the dropboxes and communicate with one another on that. Without organization, the workspace dropbox could turn into a complete mess and make collaboration very difficult.

Once the final version of the team assignment has been created, one member of the team must submit the file to the Final dropbox for that team assignment.  That version will be graded and any feedback for the team will be posted to the Final dropbox for that assignment. Only one file will be accepted in the Final dropbox. Each submission to that dropbox will overwrite any prior file that had been submitted.

There will be one D2L dropbox for each **individual assignment**. Only one file will be accepted in an individual assignment dropbox. Each submission to that dropbox will overwrite any prior file that had been submitted.

### Grades

Grades for each assignment will be posted on D2L.

### Classlist

This component shows you the names of everyone in the class. This is one of the places in D2L that allows you to email class members.

*More | Checklist*
D2L checklists will be created to list reading assignments.  In the latest version of D2L, checklists can be found under the "More" tab.

## File Formats for Assignment Submission

It is each student's responsibility to make sure that work they have submitted to D2L can be accessed/ read by the instructor via the software version being used in class (MS Office 2010). This will be particularly important for students who use Mac, Open Office, or other non-MS Office software.

*Document Files*
Submitted document files must be compatible with MS-Word 2010.

Acceptable file name extensions for submitted document files include    .doc   .docx   .rtf   .odt

Do not submit files with any of these file name extensions      .wks    .wpd   .pages   .pdf

*Other Files*
Other file formats (Excel, Access, Zip) will be required for some assignment submissions. The required file format will be specified in the instructions for each assignment.

## Your Email Address

Email is the primary means of communication between faculty and students enrolled in this course outside of class time. Students should be sure their email listed under "demographic information" at http://campusconnect.depaul.edu is correct.

## Email to your Professor

When sending e-mail to Dr. Davidson, please include your name, the topic/question, and the class ID (LSP121 - H) in the subject of the email.

My goal for e-mail response to student questions sent via e-mail is 24 hours. In many cases, a response will be sent much more quickly.   Student e-mail sent off-hours (6 pm $\rightarrow$ 9 am) or over a weekend will receive a response during the next weekday.

## Pay Attention in Class

During class, students must turn off all personal electronic devices not used for class work.

This includes, but is not limited to:

- Cell phones
- IPods and other mp3 players

Students may use electronic devices such as personal computers and PDAs during class, if that use is for LSP121 class purposes. For example, taking class notes or updating a schedule would be permitted.

Using Facebook or other social networking sites, playing games, texting, working on other classes, checking email, surfing the Web, etc. are not permitted.

Please limit your classroom entries and exits while a lecture is in progress.


## Quantitative Reasoning Center

The Quantitative Reasoning Center (QRC) provides invaluable support to LSP121 students. Check for location and hours of QRC tutors at the QRC website  http://qrc.depaul.edu


## Academic Integrity Policy

This course will be subject to the Academic Integrity Policy described at http://academicintegrity.depaul.edu/

Violations of academic integrity, particularly plagiarism, are not tolerated. Plagiarism is defined by the university as:

*"..a major form of academic dishonesty involving the presentation of the work of another as one's own. Plagiarism includes but is not limited to the following:*

*a. The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgement that it is someone else's.*

*b. Copying of any source in whole or part with only minor changes in wording or syntax, even with acknowledgement.*

*c. Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else. This includes research papers purchased from any other person or agency.*

*d. The paraphrasing of another's work or ideas without proper acknowledgement.*

*Plagiarism, like other forms of academic dishonesty, is always a serious matter. If an instructor finds that a student has plagiarized, the appropriate penalty is at the instructor's discretion. Actions taken by the instructor do not preclude the college or the university from taking further punitive action including dismissal from the university"* (DePaul Student Handbook).

University policies on academic integrity will be strictly adhered to. Consult the DePaul University Student website for further details.

If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

I will use the *TurnItIn* software available via DePaul University, to review written work as part of the evaluation process. This software detects evidence of plagiarism of submitted work.

Some examples of cheating specific to this class:

*Sign-In Sheet*
Any student who signs the class attendance sign-in sheet for another student not in attendance during that class session will be subject to cheating/plagiarism penalties.

*Individual Assignments*
Any student who submits an Individual Assignment by another student or prepared jointly with another student will be subject to cheating/plagiarism penalties.

*Extra Credit Assignments*
Any student who submits an Extra Credit Assignment prepared by another student or prepared jointly with another student will be subject to cheating/plagiarism penalties.

## Incomplete
Grades of Incomplete are given only in cases of medical emergency or other highly unusual emergency situations.   Any such reason must be documented. Any incomplete request must be made at least two weeks before the final, and approved by the Dean of the College of Computing and Digital Media. 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.   Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request. Incompletes revert to an F if they are not resolved within one quarter.

## Disabled Student Resources
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 contact 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

## Course and Instructor Evaluation

Course and instructor evaluations are critical for maintaining and improving course quality. To make evaluations as meaningful as possible, we need 100% student participation.  The evaluation process begins late in the quarter and will be completed on DePaul's Campus Connection website …..  Campus Connect | Current Courses | Begin online evaluations.  Students will be asked to give answers to structured questions, as well as providing additional comments where appropriate.

## Learning Outcomes for LSP 121 (QRTL)

1. Statistics: Students will be able to make and interpret frequency distributions; summarize data with measures of central tendency and dispersion; measure and interpret the association between variables; recognize the difference between correlation and causation; solve applied problems involving the normal distribution and z-scores.

2. Professional Statistical Package: Students will be able to import data from a spreadsheet or database into a statistics package; use graphical tools in a statistical package to make specialized statistics plots such as box plots and normal probability plots; calculate descriptive summary statistics using a statistical package.

3. Probability and Chance: Students will be able to recognize that seemingly improbably coincidences are not uncommon; evaluate risk from available evidence; and calculate basic, common probabilities.

4. Database tools: Students will be able to enter data into a pre-existing database; import data from a text file or spreadsheet file into a database; filter records based on a single parameter and on multiple parameters; sort records with multiple sort keys; formulate and conduct queries; generate a report from a database; recognize the difference between a flat file and a relational database; create a relational database using two or more tables; construct a query for a relational database using joins; design and implement forms for data entry.

5. Algorithms and reasoning: Students will be able to use sequential, logical thinking; develop algorithms to solve problems; use Boolean conditionals and repetition structures to create simple computer programs.

6. Programming tools: Students will be able to construct the concept of algorithm through experimentation and reflection on everyday activities; articulate an accurate definition of an algorithm; recognize algorithms fitting the definition; construct the notion of a control structure and a repetition structure; acquire the ability to trace simple program listings using control and repetition structures; use control and repetition structures to write simple computer programs to effect a task.

## How These Learning Outcomes Will Be Met

Topics will be presented via lectures and in-class demonstrations. Associated hands-on student activities will reinforce concepts and introduce techniques required to complete assignments. Team assignments serve as an introduction to concepts and techniques, as well as collaboration to achieve a group solution to assigned problems.  Individual assignments continue the lessons of the team assignments with additional reinforcement of concepts and techniques.

1. Statistics: Team Assignment 101 is devoted entirely to basic descriptive statistics; Team Assignment 102 covers descriptive statistics and analysis of single variables,  normal distributions,  and two-variable situations (cross-tabulation, correlation); Individual Assignment 1 covers descriptive statistics and analysis of single variables,  two-variables,  normal distributions , and deceptive statistics.

2. Professional statistical package: Team Assignment 103 is completed using the statistical package SPSS and requires the student to use it to solve multiple tasks; Individual Assignment 1 continues the use of SPSS

3. Probability: Team Assignment 103 covers an introduction to probability with a short section on risk. Individual Assignment 2 reinforces these concepts.

4. Database tools: Team Assignment 104 introduces Access databases with table/query/form and report creation. Individual Assignment 3 reinforces those lessons and includes database design with normalization.

5. Algorithms and reasoning: Team Assignment 105 requires that the team develop an algorithm to perform a task featuring repetition/loop logic. Individual Assignment 4 reinforces the concept of algorithm preparation.

6. Programming tools: Individual Assignment 4 introduces the concepts of sequential statements, if statements, loop statements, and function call statements and requires the students to use these to solve a variety of programming problems.

## Writing Expectations (these assignments overlap with those given in LSP 120)

Five computer activities each of which has a final product in the form of a Word document with five to ten short paragraph responses.

Five class assignments with approximately 10 short paragraph responses.

## How These Writing Expectations Will Be Met

All team and individual assignments require the students to answer questions using appropriate communication techniques, including short paragraph answers.

## Assignment Due Dates for Spring 2014

Materials for all assignments are found on D2L in the Dropbox section

## Basics, Statistics, and Probability

| | | |
|---|---|---|
| Team 100 | Apr 8 (TU) | Team Organization |
| Ind 0 | Apr 8 (TU) | Student Survey |
| Team 101 | Apr 12 (SA) | Statistics - Excel |
| Team 102 | Apr 15 (TU) | Statistics - SPSS |
| Team 103 | Apr 22 (TU) | Probability |
| Ind 1 | Apr 21 (MO) | Statistics - SPSS |
| Ind 2 | Apr 23 (WE) | Probability |
| Exam 1 | Apr 29 (TU) | Basics, Statistics and Probability |

## Databases

| | | |
|---|---|---|
| Team 104 | May 8 (TH) | Database |
| Ind 3 | May 18 (SU) | Database |
| Exam 2 | May 22 (TH) | Database |

## Algorithms and Computer Programming

| | | |
|---|---|---|
| Team 105 | May 29 (TH) | Algorithm |
| Ind 4 | Jun 4 (WE) | Algorithms and Computer Programming |
| Exam 3 | Jun 12 (TH) | Algorithms and Computer Programming |

## Wrap-up

| | | |
|---|---|---|
| Ind 5 | Jun 8 (SU) | Reflection Essay |
| Ind 6 | Jun 8 (SU) | Team Member Evaluation |

## Reading Assignments for Spring  2014

All assigned readings are available on D2L.

You do not have to submit anything to D2L to confirm that you have completed the reading.
Just complete it.

## Basics, Statistics, and Probability

Basics – Texting vs Your GPA          April 7

Statistics  -   Read ST1, ST2, and ST3          April 11

Statistics  –  Read ST4          April 15

Probability – Read PR1          April 18

## Databases

Read DB1, DB3, and DB4          May 6

Read DB5. Skim DB2, DB6, and DB7          May 13

## Algorithms and Computer Programming

Read pages 1-8 of CP1          May 28

Skim the remainder of CP1          May 30