LSP 121 - Quantitative Reasoning and Technological Literacy II

Spring 2014-2015

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 – Anna Vollrath

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 2014-2015 class) with tuition refund:
         April 10

Last date to withdraw from this class (or any Spring 2014-2015 class):
         May 15

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.

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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 SPSS (Statistical Package for the Social Sciences), MS-Access, MS-Word, MS-Excel, and programming environments,.

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
- become acquainted with data analysis software as used to prepare and analyze basic descriptive statistics
- apply probability concepts appropriately
- manipulate data via the creation and use of relational databases
- understand the basic concepts of algorithm creation and computer programming

Prerequisites

- Passing grade in LSP 120 or (MAT 147 or above), or
- Successful completion of the LSP 120 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.

Course Organization

The course material will be presented in three segments – Basics and Statistics/Probability, Databases, and Algorithms/Computer Programming.

Tentative Class Topic Schedule - Subject to Change

Sessions 1 - 8   Mar 31 Apr 2,7,9,14,16,21,23   Basics and Statistics/Probability

Session 9   April 28   Basics and Statistics/Probability Exam

Sessions 10 - 15   Apr 30 May 5,7,12,14,19   Databases

Session 16   May 21   Databases Exam

Session 17 - 20   May 26,28 June 2,4   Algorithms/Computer Programming

Session 21   Thursday June 11   11:45 → 2 pm   Algorithms/Computer Programming Exam

Textbooks
There is no required textbook for this class.

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, inside and outside.

- Access to the software (personal or from DePaul Lab) we will be using at the desk top
    - MS-Access (2013),
    - MS-Word (2013),
    - MS-Excel (2013),
    - 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 from a variety of sources.

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
- 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. The first two will be given during class time. The third will be given during the final exam time scheduled for this class by DePaul University, specifically Thursday, June 11 from 11:45 am to 2:00 pm. You must complete the third exam during that time

Each of the three exams will cover a different class segment – Basics and 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.

Individual 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 on D2L in the Dropbox section.

Individual 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 assignments will lose 20% of the points for that assignment per day (or any portion of a day).

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 on D2L in the Dropbox section.

Each team assignment submission must include the name/letter of the team and the name of each group member who contributed to the assignment.

All team members who contribute to the submitted team assignment, as reported on the contributor list, will receive the same grade (number of points) for that team assignment. Team members not included in the contributor list 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.

It may be tempting to divide the work of the team assignment so that each team member completes only a portion of the assignment and the resulting portions are assembled for submission. That is not a good strategy. Each team member should complete the entire team assignment. There are several options for working together on team assignments. Team members may wish to work jointly on a single submission during class "team time". They may also decide that each person will complete the assignment independently and collaborate/review each other's work to determine the answers that should be submitted for evaluation. A D2L Dropbox labeled Workspace has been created to support collaboration on each team assignment. Dropboxes are described in the D2L section of this document. It is up to the team to agree upon how to complete team assignments…and it is each person's responsibility to complete work as agreed upon by the team.

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 class session attendance 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. In particular, the Internet Explorer browser is <u>not</u> recommended, because there are known problems in using it with 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 | Basics section) for more details on these components, including screenshots.

Content
The Content component will be organized by purpose and class segment –Basics, Statistics/ Probability, Databases, and Algorithms/Computer Programming.

While the specific location may vary from segment to segment, each of the following items 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 – Lecture Slides, a full slide version (one slide per page) and Lecture Handouts, a 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 reading assignments are listed in a checklist for the each segment. There may also be *Additional Readings* that you may find helpful to increase your understanding of the topic, but are not required.

Useful Links show web 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 are comments posted to provide as much feedback as possible to all students, beyond feedback on an assignment submitted by the individual or team.

Exam prep materials will be posted as each exam approaches. They include a description of the exam and practice problems.

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

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

Any number of files can be added to/contained in the Workspace 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 me

for evaluation/grading. It will be 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. The file submitted to the Final dropbox will be graded and any feedback for the team will be posted to the Final dropbox for that assignment, where each team member can view it. Only one file at a time will be accepted in the Final 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 2013). 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 2013.

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

<u>Do not</u> 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 the email address listed under "demographic information" at http://campusconnect.depaul.edu is correct and is one they check frequently. .

Email to your Professor
When sending e-mail to me, please include your name, the topic/question, and the class ID (LSP121 - T) 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.   If you send e-mail off-hours (6 pm → 9 am M-F or Saturday or Sunday) you will receive a response during the next weekday.

It is to your advantage……..…
……to pay attention in class.

Class presentations and demonstrations for hands-on work are fast-paced. If you attend to personal electronic devices, you may miss important concepts and process steps.

During lectures and in-class demonstrations you must turn off cell phones, IPods and other mp3 players.

You 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 would be permitted.

Use classroom computers for LSP121-related activities only. Do not use classroom computers to access Facebook or other social networking sites, play games, text, work on other classes, check email, surf the Web, etc. during class presentations and demonstrations.

Respect all class members. Limit your classroom entries and exits while a lecture is in progress. Do not carry on non-class conversations during class presentations and demonstrations.

Quantitative Reasoning Center
The Quantitative Reasoning Center (QRC) provides invaluable support to LSP121 students. Check for location and hours of QRC LSP121 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 2015

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

Basics
Team 100	Mar 7 (TU)	Team Organization
Individual 0	Mar 7 (TU)	Student Survey

Statistics and Probability
Team 101	Mar 9 (TH)	Statistics - Excel
Team 102	Mar 14 (TU)	Statistics - SPSS
Individual 1	Apr 20 (MO)	Statistics - SPSS
Team 103	Apr 21 (TU)	Probability
Individual 2	Apr 22 (WE)	Probability
Exam 1	Apr 28 (TU)	Basics, Statistics and Probability

Databases
Team 104	May 7 (TH)	Database
Individual 3	May 18 (MO)	Database
Exam 2	May 21 (TH)	Database

Algorithms and Computer Programming
Team 105	May 28 (TH)	Algorithms
Individual 4	Jun 3 (WE)	Algorithms and Computer Programming
Exam 3	Jun 11(TH)	Algorithms and Computer Programming

Wrap-up
Individual 5	Jun 8(MO)	Reflection Essay
Individual 6	Jun 8 (MO)	Team Member Evaluation

Reading Assignments for Spring 2015

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
Class Syllabus   Apr 6
Texting vs Your GPA   Apr 6

Statistics
Read ST1, ST2, and ST3   Apr 8
Read ST4   Apr 13

Probability
Read PR1   Apr 16

Databases
Read DB1, DB3, and DB4   May 5
Read DB5. Skim DB2, DB6, and DB7   May 12
Skim Intro to Database Systems 2013   May 12

Algorithms and Computer Programming
Read CP1   May 26
Read pages 1-8 of CP2   May 29
Skim the remainder of CP2   June 1

LSP121 - March and April 2015

		March	April			
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
		First Class 31	1	2	Last Day to Add 3	4
5	Basic readings due 6	**Team 100 and Ind 0 due** 7	1st Stats Reading due 8	**Team 101 due** 9	Last Day to Drop 10	11
12	2nd Stats Reading due 13	**Team 102 due** 14	15	Prob Reading due 16	17	18
19	**Ind 1 due** 20	**Team 103 due** 21	**Ind 2 due** 22	23	24	25
26	27	*Exam 1* 28	29	30		
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LSP121- May 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	1st DB Reading due 5	6	Team 104 due 7	8	9
10	11	2nd and 3rd DB Readings due 12	13	14	Last Day to Withdraw 15	16
17	Ind 3 due 18	19	20	Exam 2 21	22	23
24	25	1st CP Reading due 26	27	Team 105 due 28	2nd CP Reading due 29	30
31						

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LSP121 - June 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	3rd CP Reading due 1	2	**Ind 4 due** 3	4	5	6
7	**Ind 5 and 6 due** 8	9	10	*Exam 3* 11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	○ ◑ ● ◐			