LSP 121 - Quantitative Reasoning and Technological Literacy II

Autumn 2019-2020

Tu Th 11:20 am – 12:50 pm

Section 107

Mary Jo Davidson, PhD

mdavidson@cdm.depaul.edu

Classroom – Levan 306 – Lincoln Park Campus

Lab Assistant – Eve Edmunds-Diez

Office Hours: No appointments are required for office hours.

Tuesday *9:00 - 9:30 am in Levan 306*
and
2:45 - 4:30 pm in Levan 306

Thursday *9:00 - 9:30 am in Levan 306*
and
2:45 - 4:30 pm in Levan 306

Last date to drop this class (or any Autumn 2019-2020 class) with tuition refund:
September 24, 2019

Last date to withdraw from this class (or any Autumn 2019-2020 class):
October 29, 2019

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

This course provides more advanced mathematical and computational methods in the analysis and interpretation of quantitative information. Topics include databases, descriptive statistics, measures of association and their interpretation, elementary probability theory, and an introduction to algorithms and computer programming. The course is taught in a hands-on laboratory environment where students are introduced to advanced computer tools for data analysis, including databases and a professional statistical software package.

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 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 – Statistics/Probability, Databases, and Algorithms/Computer Programming.

Tentative Class Topic Schedule - Subject to Change

Sessions 1 - 8	Sep 12,17,19,24,26 Oct 1,3,8	Basics and Statistics/Probability
Session 9	Oct 10	Statistics/Probability Exam
Sessions 10 - 15	Oct 15,17,22,24,29,31	Databases
Session 16	Nov 5	Databases Exam
Session 17 - 20	Nov 7,12,14,19	Algorithms/Computer Programming
Session 21	***Tuesday Nov 26 11:30 am → 1:45 pm***	Algorithms/Computer Programming Exam

Textbook

There is no required textbook for this class.

Required Materials

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 we will be using at the desktop in the classroom.
    - MS-Office, including
        - MS-Access
        - MS-Word
        - MS-Excel
    - SPSS
    - file-compression software(e.g. WinZip)
    - pdf reader software (e.g. Adobe Reader)

- The software products listed above are available in our classroom and at DePaul Computer Labs.
- SPSS on your personal computer
    - SPSS is available for use on a DePaul student's personal computer (PC or Mac), free of charge, via the DePaul Virtual Lab http://vlab.depaul.edu. Instructions for use of SPSS via the Virtual Lab will be provided.

- MS-Office on your personal computer
    - Students are urged to activate their Office 365 Education Plus account, which is available for use on a DePaul student's personal computer, free of charge.

    - PC users
        - PC users who activate an Office 365 Education Plus account, will be able to use MS-Word, MS-Excel, and MS-Access directly on their own PC.
    - Mac users
        - Mac users who activate an Office 365 Education Plus account, will be able to use MS-Word and MS-Excel directly on their own Mac.
        - Mac users who activate an Office 365 Education Plus account, will be able to use MS-Access on their own Mac via the DePaul Virtual Lab http://vlab.depaul.edu and the activated Office 365 Education Plus account. Instructions for use of MS-Access via the Virtual Lab will be provided.

Grading Policy

Grades will be based on the numbers of points you earn during the quarter. Approximately 1000 points will be available from a variety of sources. You must take all three exams in order to pass this class.

Grading Scale - Based on 1000 Possible Points

Grades 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 and 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 ***Tuesday November 26 from 11:30 am to 1:45 pm.*** You must complete the third exam during that time

Each of the three exams 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 in order to pass this class.

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 Submissions section.

Assignment due dates are stated on D2L as part of the information about the Submission Folders. 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).

Individual assignments must be completed individually. Students who submit work not completed by themselves alone will be subject to plagiarism penalties. It is acceptable and even encouraged for students to discuss individual assignments with others, however the assignment submitted by each student must have been completed by that student alone. Any student who submits an Individual Assignment completed by another student or prepared jointly with another student will be subject to cheating/plagiarism penalties.

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.

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 Submissions section.

Each team assignment submission must include a list of the names of the team members who contributed to the assignment.

All team members who contribute to the submitted team assignment, as reported on the contributor list submitted as part of the assignment, will receive the same 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 teammates as a part of the grading process.

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.

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 entire assignment independently and collaborate/review each other's work to determine the answers that should be submitted for evaluation.

No late team assignments will be accepted.

Class Attendance and Contribution
Class attendance is important. 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.

During each class session a sign-in sheet will be circulated in class. The measure of attendance is whether you have signed the attendance sign-in sheet.

It is your responsibility to make sure that you personally sign the attendance sign-in sheet each day you attend class.

Students will be expected to prepare for class by completing required readings and reviewing resources for class topics, including lecture slides and demonstration materials. All are available on D2L.

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.

We will be using the Home, Content, Discussions, Submissions, Grades, Classlist, and More | Checklist components of D2L.

See the "How we will use D2L" handout (printed version to be distributed in class during the first session and also found in the D2L | Content |0. Basics – Throughout the Quarter) for descriptions of these components.

See the "Intro to D2L" handout (printed version to be distributed in class during the first session and also found in the D2L | Content | 0. Basics – Throughout the Quarter) for screenshots of these components.

Quantitative Reasoning Center

The Quantitative Reasoning Center (QRC) provides invaluable support to LSP 121 students. Check for location and hours of QRC LSP 121 tutors at the QRC website http://qrc.depaul.edu

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 Instructor

When sending e-mail to me, please include your name, the topic/question, and the class ID (LSP 121 - S) 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….avoid distractions.

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

Turn off cell phones, IPods and other mp3 players during lectures and in-class demonstrations,

You may use electronic devices such as personal computers and tablets during class, if that use is for LSP 121 class purposes. For example, taking class notes would be permitted.

Use classroom computers for LSP 121-related activities only.

Do not access 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. If you must leave the classroom, use the door at the back of the room.

Do not carry on non-class conversations during class presentations and demonstrations.

Preferred Name & Gender Pronouns

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter so that I may make appropriate changes to my records. Please also note that students may choose to identify within the University community with a preferred first name that differs from their legal name and may also update their gender. The preferred first name will appear in University related systems and documents except where the use of the legal name is necessitated or required by University business or legal need. For more information and instructions on how to do so, please see the Student Preferred Name and Gender Policy at http://policies.depaul.edu/policy/policy.aspx?pid=332

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 102 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.

Identifying the Transferable Skills you acquire in your courses, jobs and internships, co-curricular involvement, and other experiences is important to your career development and success.

In this course, you will hone and build soft and technical skills that are important to employers, and it is your responsibility to highlight these skills in your resume, cover letters, interviews, and your digital presence - like your LinkedIn profile.

For assistance identifying and providing evidence of these skills, visit careercenter.depaul.edu to make an appointment to meet with a career advisor or access digital resources.

College Policies

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at cdm.depaul.edu/enrollment

Academic Integrity and Plagiarism

This course will be subject to the university's Academic Integrity Policy. More information can be found at http://academicintegrity.depaul.edu/. If you have any questions be sure to consult your instructor.

Incomplete Grades

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 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. Incompletes revert to an F if they are not resolved within one quarter. If such a situation should occur, please inform the instructor as soon as possible.

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 contact the Center for Students with Disabilities (CSD) at csd@depaul.edu

CSD Campus Locations:

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

Loop Campus
Lewis Center 1420, 25 East Jackson Blvd.
Phone number: (312)362-8002
Fax: (312)362-6544
TTY: (773)325.7296

Course and Instructor Evaluation

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online on CampusConnect.

Comments or Questions about LSP 121?

LSP 121 is managed and staffed by the College of Computing and Digital Media of DePaul University.

If you have general comments or questions about LSP 121, please email us at LSP121@depaul.edu.

Assignment Due Dates for Autumn 2019-2020

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

Basics

Team 100	Sep 19 (TH)	Team Organization
Individual 0	Sep 19 (TH)	Student Survey

Statistics and Probability

Team 101	Sep 22 (SU)	Statistics - Excel
Team 102	Sep 26 (TH)	Statistics - SPSS
Individual 1	Sep 29 (SU)	Statistics - SPSS
Team 103	Oct 3 (TH)	Probability
Individual 2	Oct 6 (SU)	Probability
Exam #1	Oct 10 (TH)	Statistics and Probability

Databases

Team 104	Oct 20 (SU)	Databases
Individual 3	Oct 29 (TU)	Databases
Exam #2	Nov 5 (TU)	Databases

Algorithms and Computer Programming

Team 105	Nov 12 (TU)	Algorithms
Individual 4	Nov 17 (SU)	Algorithms and Computer Programming
Exam #3	Nov 26 (TU)	Algorithms and Computer Programming 11:30 am – 1:45 pm

Wrap-up

Individual 5	Nov 17 (SU)	Reflection Essay and Advice
Individual 6	Nov 17 (SU)	Team Member Evaluation

Reading Assignments for Autumn 2019-2020

The list of Reading Assignments for each segment is available via D2L | More | Checklist. There is a checklist for each segment. The checklists include links to each reading assignment.

All assigned readings are available on D2L in the Contents | Required Readings section for each segment.

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

Basics

Class Syllabus	Sep 18
Texting vs Your GPA	Sep 18
Intro to D2L	Sep 18
How we will use D2L	Sep 18

Statistics

First Stats - ST1, ST2, and ST3	Sep 20
Second Stats - ST4	Sep 25

Probability

Prob - PR1	Sep 28

Databases

First DB - DB1, DB2, and DB3	Oct 16
Second DB - Skim DB4, DB5, and DB6	Oct 23
Third DB - DB7	Oct 23

Algorithms and Computer Programming

First CP - CP1	Nov 7
Second CP - Read pages 1-8 of CP2	Nov 12
Third CP - Skim the remainder of CP2	Nov 12