

LSP 121 - Quantitative Reasoning and Technological Literacy II

Autumn 2021-2022

All times listed are Central Time (CT)

Class meeting time: 11:20 AM – 12:50 PM

Section 102

Instructor: Mofak Hassan, PhD

Instructor email: mhassan9@Depaul.edu

Office Hours: No appointments are required for office hours.

All office hours will be conducted in a Zoom Meeting Room during the times listed below.

Saturday and Sunday 4.00 – 6:00 PM CT

The link is: <https://depaul.zoom.us/j/93973685687>

Office hours can also be arranged by contacting your instructor via email

Important Dates:

Consult the DePaul Academic Calendar to find:

- Last date to “swap” sections of this class
- Last date to drop this class (or any class) with tuition refund
- Last date to withdraw from this class (or any class)

<https://academics.depaul.edu/calendar/Pages/default.aspx>

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. Students will be 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 <https://qrc.depaul.edu/placement/default.htm> for more details.

Course Organization

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

Tentative Class Topic Schedule - Subject to Change

| | | | |
|----------------|------------------------------------|--|--------------------------------|
| Module #1 | Basics and Statistics/Probability | Sessions 1-8 | Sep 8,13,15,20,22,27,29, Oct 4 |
| Exam #1 | Statistics/Probability Exam | Session 9 | Oct 6 |
| Module #2 | Databases | Sessions 10-14 | Oct 11, 13, 18, 20, 25 |
| Exam #2 | Databases Exam | Session 15 | Oct 27 |
| Module #3 | Algorithms/Comp Programming | Session 16-20 | Nov 1, 3, 8, 10, 15 |
| Exam #3 | Algorithms/Comp Pro Exam | Monday, Nov 22, 11:30 AM – 01:45 PM | |

Textbook

There is no required textbook for this class.

Required Technology Resources

Students will need the following technology resources:

- A personal computer
 - This can be a PC/Windows or Mac. (Not Chromebook, tablet, or phone)
- A place to store your work (Flash drive, personal computer, “cloud” account).
- Software we will be using for this class (see Obtaining Software for this Class, below)
 - SPSS (Statistical Package for the Social Sciences)
 - MS-Office, including
 - MS-Access
 - MS-Word
 - MS-Excel
 - file-compression software(e.g. WinZip)
 - pdf reader software (e.g. Adobe Reader)

Obtaining Software Required for this Class

You will not need to purchase software for this class. You will need to 1) review the computer you will use for class and the software currently installed on the computer and 2) take action to make sure that you have the software that you will need (e.g. Office 365 offered by DePaul)

- DePaul Virtual Lab

The following software will be available via the DePaul Virtual Lab.

 - SPSS (Statistical Package for the Social Sciences)
 - Office365
 - Word
 - Excel
 - Access
 - OneDrive (file storage)

More information on the DePaul Virtual Lab, the software used to connect with the Virtual Lab (Mac or Windows PC), and frequently asked questions can be found at this knowledge base site

<https://offices.depaul.edu/information-services/services/Software/Pages/Software-for-the-Virtual-Lab.aspx>

- Office365
 - We recommend that you activate your Office 365 Account offered by DePaul University (at no cost to you). You will use your @depaul.edu email account to complete the activation and installation. This will give you the ability to use Office365 products on your computer.
 - Office 365 includes OneDrive – a cloud-based file storage software product that you will want to use to work with the DePaul Virtual Lab

Web Browsers for this Class

- Recommended Web Browsers
 - Chrome or Mozilla Firefox browser offer the best, consistent web experience when using D2L and other educational support products (e.g. Panopto).
- Web Browsers with known problems
 - Safari and IE/Edge browsers have known issues with the educational support software we will be using (e.g. D2L, Panopto)

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
- **25%** Individual Homework Assignments
- **10%** Team Assignments and evaluation of participation by team members
- **10%** Class Attendance and Participations

An expanded description of each Source of Points:

Exams

There will be three exams.

Each of the three exams will cover a different class module – Statistics/Probability, Databases, or Algorithms/Computer Programming. Exams are not cumulative.

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.

Exam #3 will be given at the time set for the Final Exam (based on class meeting time) by DePaul University. The Exam #3 will be given on November 18 from 9:40 – 10:45 AM CT. You must take the exam at that time.

You can confirm exam date/times for all of your exams at:

<https://academics.depaul.edu/calendar/Pages/finals-calendar.aspx>

Students will need to be in a Zoom video session during each exam. Students must be in the Zoom meeting room established for the exam during the exam. Students who are not in the Zoom meeting room will not receive credit/points for work submitted to D2L for the exam.

Individual Assignments

There will be individual assignments to be completed by each student. The purpose of these assignments is to give individual 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 (receive a “0” for the assignment). 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 (receive a "0" for the assignment).

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.

Discussion Forum Postings

You are asked at a minimum to make two posts (thread and response) to each of the seven discussion forums on or before the due dates.

The initial post should address the guided question provided in the module (This is done through referencing the class topics and providing insight). Students are expected to compose a thoughtful response to one or more of their classmates' posts (about one paragraph in length).

See Discussion Topics , Due Dates and Rubric below for specifics.

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, Zoom, Discussions, Submissions, Grades, Classlist, and More | Quizzes, Self Assessment components of D2L.

At the beginning of the quarter, a D2L Welcome News Note will provide a summary of the course and the way D2L will be used for this class.

Submitting your Work for Evaluation

You will be submitting your work to D2L for evaluation.

You will submit your work to D2L in the specified Submission folder for each assignment.

For Individual Assignments:

The D2L Submission folder can contain one file. If you re-submit an assignment to a Submission folder, the new submitted file will over-write the old file in the Submission folder. You may re-submit as many times as you wish up to the due date/time.

For Team Assignments:

There are two different Submission folders for each Team Assignment.

Workspace: The purpose of the Workspace folder is to support team collaboration on team assignments. This is a folder that all team members can use to post and share their work. All team members can view the contents of the workspace folder. Any number of files can be posted to this folder.

Final: One team member must submit the team's agreed-upon submission to the Team Final Submission folder for evaluation before the due/date time. The Team Final Submission folder is similar to the Individual Assignment folder can contain one file. If you re-submit an assignment to a Final Submission folder, the new submitted file will over-write the old file in the Final Submission folder. You may re-submit as many times as you wish up to the due date/time.

The file type for each submission file will be specified by your instructor, as a part of the instructions. They may be MS-Word documents or zip-folders, depending on the assignment.

Work must be submitted in the file format(s) specified in the instructions. Submissions in .Pages or pdf format will not be accepted.

Quantitative Reasoning Center – QRC Tutors

The Quantitative Reasoning Center (QRC) will provide support to LSP 121 students remotely via Zoom during Spring Quarter. The QRC zoom meeting link will be posted on D2L. The hours and others details for QRC tutoring will be posted on the QRC website <http://grc.depaul.edu>

During Spring Quarter, the University will be closed for holidays on April 2-4 (Fri-Sun) and May 31 (Mon). QRC tutoring will not be available on those days.

Technical Support Resources

The DePaul Help Desk is up and running for all student, faculty, and staff issues during the Spring quarter. They can be reach by email at helpdesk@depaul.edu, by phone at 312-362-8765, and online at helpdesk.depaul.edu

Your Email Address

Email is the primary means of communication between faculty and students enrolled in this course outside of class time.

All enrolled DePaul students have been issued a BlueM@il email address (**username@depaul.edu**) that provided expanded access to software like Office 365 and Zoom.

All DePaul-based communications will be sent to your BlueM@il email address. These communications include any emails from a DePaul office or college, or messages sent from classroom technology such as D2L.

Make sure to regularly log into and check your student email through any of the various Microsoft Outlook apps and/or URLs listed below.

DePaul students can get the Outlook App for personal computers or mobile devices. Ways to check email (use your DePaul login credentials):

- **Outlook web app:** Go to office365.depaul.edu and select the Outlook icon
- **Outlook desktop app:** Go to office365.depaul.edu, log in with your DePaul BlueKey account credentials and [download Office 365 including Outlook](#). Instructions for configuring Outlook for use with BlueM@il can be found [here](#)
- **Outlook mobile app:** Download the Outlook mobile app on [iPhone](#) or [Android](#) Instructions for configuring Outlook for use with BlueM@il can be found [here](#)

Email to your Instructor

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

To maximize your chances of doing well.....

Make sure that you are ready and able to take responsibility for successfully completing this course.

Online courses require that students take a greater, more active role in managing the assigned tasks of course work without the organizing framework of face-to-face class meetings. You must prepare to devote time and effort to this class.

You will need to:

- review class session agendas and materials(available on D2L) before the class meets on Zoom
- attend class meetings via Zoom video-conferencing
- review and study lectures, demos, and videos on D2L
- complete assignments to demonstrate your skills and practice for the exams
 - As a member of a Team
 - Individually
- contribute to discussions on D2L
- prepare for and complete the three exams, one covering each module.

It is likely that you will find that this class will require at least 6-8 hours of effort per week.

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 improbable 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 to basic descriptive statistics, including analysis of single variables and normal distributions. Team Assignment 102 covers descriptive statistics in two-variable situations (cross-tabulation, correlation); Individual Assignment 1 covers descriptive statistics and analysis of single variables, two-variables, and normal distributions. Discussion posting assignments cover basic descriptive statistics and deceptive statistics.
2. Professional statistical package: Team Assignments 101 and 102 are completed using the statistical package SPSS and require 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. Students evaluate risk from available evidence; and calculate basic, common probabilities. Individual Assignment 2 reinforces these concepts. A discussion posting assignment on probability challenges students to think more deeply about probability.
4. Database tools: Individual Assignment 3a introduces Access databases with table/query/form and report creation. Individual Assignment 3b reinforces those lessons and includes database design with normalization.
5. Algorithms and reasoning: Team Assignment 104 requires that each 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.

Students will complete Discussion Postings on D2L to express concepts and responses to the postings of others.

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

Changes to Syllabus

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

Online 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.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <https://offices.depaul.edu/academic-affairs/faculty-resources/academic-integrity/Pages/resources.aspx>

All students are expected to abide by the University's Academic Integrity Policy which prohibits cheating and other misconduct in student coursework. Publicly sharing or posting online any prior or current materials from this course (including exam questions or answers), is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity.

Diversity, Equity, and Inclusion

DePaul/CDM recognizes the rich diversity of our campus community and seeks to offer all members an equitable, inclusive, welcoming, secure, responsive and affirming environment that fosters mutual respect, empathy and trust. Do let me know if there is anything that I can do to make your experience in this class better reflect that environment.

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:

<http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>

Incomplete Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at <http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>

Students with Disabilities

Students seeking disability-related accommodations are required to register with DePaul's Center for Students with Disabilities (CSD) enabling them to access accommodations and support services to assist with their success.

There are two office locations:

Loop Campus - Lewis Center #1420 - (312) 362-8002

Lincoln Park Campus - Student Center #370 - (773) 325-1677

Students can also email the office at csd@depaul.edu

Virtual office www.tinyurl.com/CSDVirtualOffices

Students who register with the Center for Students with Disabilities are also invited to contact Dr. Gregory Moorhead, Director of the Center, privately to discuss how he may assist in facilitating the accommodations to be used in a course. This is best done early in the term. The conversation will remain confidential to the extent possible.

Please see <http://go.depaul.edu/csd> for Services and Contact Information.

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 2021-2022

Materials for all assignments are found on D2L

Start-up

| | | |
|---------------|-------------|-------------------|
| Team #100 | Sep 16 (TH) | Team Organization |
| Individual #0 | Sep 16 (TH) | Student Survey |

Statistics and Probability

| | | |
|---------------|-------------|-------------------------------------|
| Team #101 | Sep 19 (SU) | Statistics – Single Variable - SPSS |
| Team #102 | Sep 23 (TH) | Statistics – Two Variable - SPSS |
| Individual #1 | Sep 26 (SU) | Statistics – Summary - SPSS |
| Team #103 | Sep 30 (TH) | Probability |
| Individual #2 | Oct 3 (SU) | Probability |

| | | | |
|----------------|------------------------------------|------------------|--------------|
| Exam #1 | Statistics/Probability Exam | Session 9 | Oct 6 |
|----------------|------------------------------------|------------------|--------------|

Databases

| | | |
|----------------|-------------|----------------------|
| Individual #3a | Oct 17 (SU) | Intro to Databases |
| Individual #3b | Oct 26 (TU) | Relational Databases |

| | | | |
|----------------|-----------------------|-------------------|---------------|
| Exam #2 | Databases Exam | Session 15 | Oct 27 |
|----------------|-----------------------|-------------------|---------------|

Algorithms and Computer Programming

| | | |
|---------------|-------------|-------------------------------------|
| Team #104 | Nov 9 (TU) | Algorithms |
| Individual #4 | Nov 14 (SU) | Algorithms and Computer Programming |

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|----------------|---------------------------------|--|
| Exam #3 | Algorithms/Comp Pro Exam | Monday, Nov 22, 11:30 AM – 01:45 PM |
|----------------|---------------------------------|--|

Wrap-up

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|---------------|-------------|-----------------------------|
| Individual #5 | Nov 14 (SU) | Reflection Essay and Advice |
| Individual #6 | Nov 14 (SU) | Team Member Evaluation |