

Math 125 Course Project Instructions

Project (15% of Final Grade): For the project outlined below, you will, individually, conduct research consisting of a survey or experiment. To complete the project, you will gather the appropriate data for exploratory data analysis and perform the analysis summarizing your data using the descriptive tools from the course. A formal report of the project is to be typed and submitted as if it were a scientific paper ready for presentation. The project grade will be distributed as follows:

- **Description (10%)** A typed, double-spaced, one-page description of the question you wish to address and your plan for gathering data.
- **Draft (30%)** A typed, double-spaced draft of the project that includes the Introduction, Methodology, and Data Exploration sections outlined below in Table 1 Project Outline.
- **Final (60%)** A typed, double-spaced final report incorporating any suggested changes to the draft and the remaining sections—Results, Conclusion, and Future Study—as outlined below in Table 1 Project Outline.

Table 1 Project Outline

Component	Description
Title	Provide a specific and meaningful title for the project.
Introduction	Describe the project and scope of the problem addressed.
Methodology	Provide any details of the approach to the problem solution. State methods of data gathering, difficulties, assumptions and/or constraints, and the statistical analyses/tests used.
Data Exploration	Provide both graphic and numeric summaries of the data and document your data exploration with explanations of any and all calculations used. Provide tabular results in an appendix to the report.
Results	Provide calculations and results of statistical tests/inferences.
Conclusion	Provide a clear rationale of the conclusion(s) reached in this project.
Future Study	In a project of this nature [with time being a factor to properly complete a full investigation of a question/project] provide a description of what should be included in further study of your problem.

Before Submitting Your Draft

Ask yourself the following and address any negative responses:

Does an independent reader have a clear idea of...

- the problem I have addressed?
- the background for my choice?
- the analyses and assumptions I used?
- my calculations?
- the conclusion(s) I reached?

If you responded “no” to any of the above questions, then the project is not complete nor is it ready for submission. Address any incomplete thoughts or missing ideas before you submit your draft.

Some Example Topics of Math125 Project

- ❖ SAT (ACT) Scores Comparisons for Local School Districts
- ❖ Football: Offense (PF) vs Defense (PA) Study of Superbowl Teams
- ❖ Fall vs Spring Sales (average weekly sales)
- ❖ Pitching and Winning League Champs for World Series.
- ❖ PSSA Math/Reading: Urban vs Rural Schools
- ❖ Doctor's Office: Missed Appointments Analysis
- ❖ Voting Survey
- ❖ Popular Radio Stations: A Survey
- ❖ Temperature Predictions (accuracy of); One day vs 10 day predictions
- ❖ Pennsylvania (Local Municipality) Census: 1900-2000; Prediction of Growth
- ❖ Internet Usage by Selected population(s)
- ❖ Effect of Having a Job on Study Hours/Grades
- ❖ Commuting Times to/from Duquesne
- ❖ Test Scores: A Comparison of
- ❖ Observational survey (variety of topics)
- ❖ Comparison shopping
- ❖ Probability Models
- ❖ Temperature comparison for travel (vacations)
- ❖ Cost analyses
- ❖ Stock prices/predictions
- ❖ Temperature Changes – 7AM to 9AM in Pgh
- ❖ Swimming times - for various skill developments

- ❖ Data Trends (2 variables) (scatterplots plus analyses)
- ❖ Cancellation of dinner reservations
- ❖ # hours exercising
- ❖ “Freshman 15”
- ❖ Presidential Voting (Primary)
- ❖ Use of Steroids in Sports - Opinion Poll
- ❖ Comparison of Chemistry Tutoring Centers
- ❖ Compare SAT (Public vs Private Schools)
- ❖ Effect of Classical Music on memory
- ❖ Hockey Scoring 1st, 2nd, or 3rd Periods
- ❖ Spend weekends - Oakland vs Southside
- ❖ Holding doors open
- ❖ Distance home to DU vs major (Nursing)
- ❖ Facebook use vs GPA
- ❖ Heart Rate vs Brand of caffeine drinks
- ❖ Hockey Scoring; Left Wing vs Right Wing
- ❖ Preference of Restaurants
- ❖ Practice Time for Music majors
- ❖ Flu Vaccine; %'s.
- ❖ Return books On-time to Library
- ❖ Types of Backpacks
- ❖ Home Field Advantage - Football/Baseball