

Text: Mathematics Appreciation, revised edition, Magliano & McLoughlin, Kendall/Hunt Publishing Co.

Topics:

Set Theory, Probability, Statistics

An additional topic may be covered, time permitting. The book is followed closely; however, supplementary material may be introduced as well.

Requirements:

Attendance: It is important to attend class to learn the material properly. Students are responsible for learning material and completing assignments missed due to absence. Be aware of college policy as outlined in the handbook. Make-up opportunities are not guaranteed for students with chronic absences. Poor attendance may lower grades.

Participation: Pay attention!. Ask and answer questions as necessary.

Homework: Assignments are given regularly and must be completed by the next class when it is reviewed.

Tests: There will be three or four topic tests. They will be announced approximately one week in advance. Always show work and be neat as partial credit may be given. There are no make-up tests. Exceptions may occur; instructor discretion will be exercised.

Paper or Project: Details to be discussed in class. See attached guidelines

Final: A final exam/project will be required.

Withdrawals: All withdrawals must be done officially by the college's posted deadline. Late withdrawals will not be approved unless there are unusual extenuating circumstances.

Extra help is available during office hours. Please get extra help as soon it is apparent it is needed. Do not wait until the day before a test. Good attendance is required to receive extra help. In addition, free tutoring is available in the Academic Learning Center.

Grading:

A point system is used to calculate grades. The ratio of points earned to total points possible multiplied by 100 yields the grade at any given time. Grades are not curved; however, the lowest grade (excluding the final exam) will be dropped. Please keep a record of grades; keeping returned assignments is advised.

Grade Scale

A 90 - 100	B 80 - 86	C 70 - 76	D 60 - 66
B+ 87 - 89	C+ 77 - 79	D+ 67 - 69	F below 60

* College policy requires permission of the Department before students may register for a third attempt of a particular course. No third attempts will be allowed for any mathematics course unless the student involved successfully completes the prerequisite for that course immediately before the third attempt. No fourth attempts will be permitted except in extremely unusual circumstances.

Class Expectations:

Come to class on time with necessary materials, ready to work.

When tardy, please enter as discreetly as possible; when leaving early, please inform the instructor at the beginning of class and sit near the door. Do not leave the class unless necessary.

During class, do not talk to classmates. Do not nap. Pay attention! Please refrain from noises such as sighs, yawns whistles, etc.

Turn off beepers, phones, watch alarms, etc. prior to class.

Complete class assignments as given.

Cheating will not be tolerated; anyone caught is subject to college policy outlined in the handbook.

Project Assignment

Select a nonprofit service agency that requires statistical research for program evaluation, public needs assessment, or public relations and support. Assist the agency, based on its needs, *in developing a survey tool, organizing and/or conducting the survey, compiling and analyzing data, or some combination of these or some other statistical undertakings.

The following components must be completed:

- 1) Complete entrance and exit surveys and a reaction form. Keep a record of time spent at the volunteer site and time spent on this project.
- 2) Make at least one visit to the agency; speak with the supervisor. Make a list of objectives the agency needs to meet as a result of this research project.
- 3) Plan a project to meet the program objectives. Obtain instructor advisement and approval. Be prepared to defend your plan and answer questions. Clear the plans with the agency.
- 4) Prepare the project, conduct the research and compile results as appropriate to the nature of the project. Report to the instructor; report to the agency if requested to do so.
- 5) Prepare a written report consistent with agency requirements and subject to instructor approval. Submit to the instructor.
- 6) Make necessary revisions and submit the final product to the agency.

Students are strongly encouraged to work in pairs or small groups in order to share the workload. Those students interested in participating should make arrangements to begin as soon as possible. **All projects must be approved by the instructor by October 15.** There are several agencies that have specific needs; consult with the instructor to pursue these avenues. Anyone who has an agency of their own selection is free to pursue that one, subject to instructor approval and written agreement from the agency, who will be asked to complete a satisfaction survey when the project is completed. Given the sequential nature of this assignment, it is important to adhere to deadlines and be committed to completion as these agencies will be depending on participants. Plan to work closely with the instructor for guidance, as these projects will vary based on individual agency needs and personal styles.

Participants of this project will be exempt from one class test; this project grade will replace the test grade. Additionally, at least one class meeting will be excused, replaced by an agency visit of which verification will be required. The grade for this project will be determined according to the following guidelines:

- 1) Adherence to each of the required components is worth 40%. The criteria includes: proof of at least one visit to the agency: notes on the objectives, based on the visit; the project plan and its connections to the objectives; group interaction, if applicable and adherence to deadlines and instructor advisement.
- 2) The final report, including accuracy and format, is worth 40%.
- 3) Student's self-assessment, according to the same criteria is worth 20%.

The final project must be completed and submitted to the agency by **December 22, 1999.**

This project is designed to provide a meaningful application and extension of course content, providing firsthand experience in research methods and statistical reports. Planning the research according to agency needs requires students to develop problem-solving skills, refine their reasoning, and be creative in developing suitable plans. Students choosing to work in small groups gain the added benefit of developing communication skills and effective interaction in a team project, a common practice in today's industry. This elective exploration allows students to connect statistics to other disciplines and examine its use in various fields, particularly observing its place 'in the realm of community service. In so doing, students can gain a sense of community needs, learn about service organizations, and increase their social awareness. Ultimately, students will learn from this process, broadening classroom knowledge and perhaps experiencing personal fulfillment as well!

Service Project Descriptions-Fall 1999

Grace's Kitchen

Program Coordinator-Valerie Fisher

In order to assess the community needs and programs in the Plainfield area and to better coordinate these programs and assist the community, data must be collected and organized on all available services. This project may include research on the demographics of the region to conduct a needs assessment research on the target service population to assess program availability- and tabulate, organize, and present survey results.

St. Elizabeth Hospital

Volunteer Coordinator- Lisa Liss

In order to assess patient satisfaction, data must be collected from the patient. This project requires hospital visits to meet with patients, therefore medical records and/or shots may be necessary. An interview survey tool must be developed, interviews must be conducted with a sample, possibly the population, and the results must be organized and tabulated.

Reach Out and Read

Project Coordinators- Prof. Susan Stock, Prof. Judy Mayer

This literacy program encourages parents to read aloud with their children and make books a part of their children's lives. At each scheduled visit to the well-child medical facility, readers read to the children (up to five years old) in the facility waiting room. Students are asked to develop evaluation techniques to measure the effectiveness of the program in developing the children's interest in and enjoyment of reading. Volunteer readers, the parents, and the medical staff would be surveyed.

Big Brothers/Big Sisters of America

Contact-Mary Dasney

In order to expand this program, data collected must be reviewed, tabulated, and cross-referenced. Additionally, to develop this program in Union County, research on demographics may be necessary and a survey tool may need to be constructed. This project may require a combination of these statistical applications.

People for Animals

President-Dawn Luetscher

In order to assess awareness and potential use of a mobile spay/neuter clinic and/or transport service, some research and recommendations for survey plans must be finalized. This study may include research on demographics and operations of other mobile/transport units; demographics of region for local unit and suggested survey goals based on population-, review of survey tool- establish format & samples for survey results; sort and tabulate existing data.

"All projects must have instructor approval by October 1.5. More details will be provided once

a selection is made. Students may choose something other than one of these options but must discuss plans with the instructor first & have a contact name for instructor verification.

Paper Topics & Requirements-Fall 1999

Suggested Topics:

The paper may be on any topic of interest as long as it can be related to a topic discussed in class. It may be about a mathematician, the history and development of a mathematical field, or an application of mathematics. Some ideas include:

Applications:

Major:

Education-statistical study of student performance on standardized tests with a discussion of contributing variables and suggestions to address the issue

Sociology/Psychology-a study of probability and how it relates to games/gambling with a discussion of addictive personalities, social ramifications, and potential solutions

Hobby:

Sports:

a study of the use of statistics in sports and how it affects trading, salaries, etc.

a study of the use of probability in sports betting, legal (horse races, etc.) and otherwise

Any-applications of surveys from set theory (MAT1 17) and statistics in magazine articles on some area of interest-critique an article

Mathematicians

Georg Cantor (MAT1 17)

Ludwig Wittgenstein (MAT 117)

Leonhard Euler (MAT1 17)

John Venn (MAT1 17)

Blaise Pascal

Pierre de Fermat

Christiaan Huygens

James Bernoulli

Pierriz Simon de Laplace

John Gaunt

William S. Gossett

P. L. Chebyshev

Karl F. Gauss

Francis Galton

Topics

Pascal-Pensees rule of the wager

Chevalier de Mere, aristocratic gambler

Darrell Huff-*How to Lie with Statistics*

Cantor-cardinal number & paradoxes (MAT 117)

Requirements:

The paper must be double-spaced in font size 10 or 12 and approximately 10 pages in length . Be sure to footnote and provide a bibliography page. The cover page should include name, course, section, topic, and date. All topics must have **instructor approval by October 15**. More details will be provided once a selection is made. Students are encouraged to develop topics of interest and relevance to their own lives.

Projects may replace papers but details must be arranged with the instructor.

The grade for this paper will be determined according to the following guidelines.

1) Adherence to each of the required components is worth 40%. The criteria includes: submitted outline & bibliography for pre-approval, draft & revisions, specifications-font, length, cover, components, etc. , and meeting-, required deadlines and advisement.

- 2) The final report, including accuracy, relevancy, and originality is worth 40%.
- 3) Student's self- assessment, according to the same criteria is worth 20%.

Suggested Agenda

Project:

By October 15-

Determine project/instructor approval
Complete entrance survey
Make appointment with agency representative

By November 1

Complete initial agency visit/organize notes
Plan draft
Schedule instructor advisement appointment

By November 24-

Complete advisor appointment
Agency approval
Revise draft

By December 13-

Review final draft (group, advisor, agency, as necessary)
Final revisions/final report
Exit surveys

By December 22-

Submit Project

Paper:

By October 15-

Determine topic/instructor approval
Preview of Literature

By November 15 -

Develop Outline
Determine Sources
Instructor Advisement to review plans (required)

By December 6-

Submit Draft

By December 13-

Complete Revisions

By December 22-

Submit Final Paper

© Copyright C. Roemer. All rights reserved.
Published with permission by Campus Compact