

Mark Keppel High School — Syllabus 2014 — 2015

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A person who never made a mistake never tried anything new.
A. Einstein

COURSE DESCRIPTION

This course introduces students to the major concepts and tools of collecting, organizing, presenting, analyzing, and drawing conclusions from data. Students will be exposed to four broad conceptual themes: exploration of data, the planning of a study, anticipating patterns by producing models using probability and simulation, and statistical inference. Graphing calculators will be required. This course is designed to prepare students for the AP exam.

COURSE OUTLINE

PART I: Organizing data: looking for patterns and departures from Patterns

Displaying distributions with Graphs- Displaying distributions with Numbers- Density Curve and Normal Distribution-Standard Normal Calculations- Scatterplots- Correlation-Least-Square Regression-Transforming Relationships- Caution about Correlation and Regression -Relations in Categorical Data

PART II: Producing Data: Samples, Experiments, and Simulations-Designing Samples-Designing Experiments-Simulating Experiments-

PART III: Probability: Foundations of Inference-The Idea of Probability-Probability Models-General Probability Rules-Discrete and Continuous Random Variables-Means and Variance of Random Variables-The Binomial Distributions-The Geometric Distributions-Sampling Distributions-Sample Proportions-Sample Means

PART IV: Inference: Conclusions with Confidence-Estimating with Confidence-Tests of Significance-Making Sense of Statistical Significance-Inference as Decision-Inference for the Mean of a Population-Comparing Two Means-Inference for a Population Proportion-Comparing Two Proportions-Test for Goodness of Fit-Inference for Two-Ways Tables-Inference About the Model-Prediction and Conditions



A graphing calculator is required for this class, and a TI-83 or TI-84 is strongly recommended. Throughout the year, a graphing calculator will be incorporated into the current statistics topic. You will be taught how to use your calculator specifically for statistics and not for simple arithmetic. Your calculator is a powerful instrument which will allow you to solve problems, experiment, interpret results and support conclusions, in other words, to “see” statistics.

MATERIALS

Textbook: Yates, Moore, and Starnes, The Practice of Statistics, TI-83/89 Graphing Calculator Enhanced, 2nd Ed

Three ring binder (please use graph paper).

Calculator (TI83 or 84)

Pencils and colored pencils

Any other materials will be announced when necessary

(If you are unable to bring to class something from the previous list, please let me know and we will find a solution)

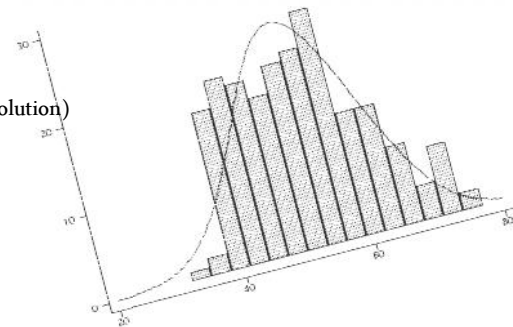
COURSE GRADE DESCRIPTIONS

45% Tests

20% Quizzes

25% Final Exam

10% Assignments (CW, HW, Notes)



NOTE: The overall grade is assigned with a weighted scale. Calculating the raw average will NOT give you the correct overall. The formula to calculate your overall is the following:

$$\text{Overall grade} = 0.45(\text{test grade}) + 0.20(\text{quiz grade}) + 0.10(\text{assignment grade}) + 0.25(\text{final exam grade})$$

GRADE SCALE

A: 90 — 100%

B: 80 — 89%

C: 70 — 79%

D: 60 — 69%

F : below 60%

(grades will be rounded to the nearest integer)

PROJECTS

Every project will be worth either partial or full test scores or partial or full quiz score, depending on the project (you will be notified how much each project is worth at the moment it is assigned). Projects will be done in groups and each member will receive a grade. Note that not all group members will necessarily receive the same grade. Your grade will depend on both how well the project is done and how well YOU worked on the project. I will let you know how grades will be given when a project is assigned.

CLASSWORK/ HOMEWORK

Classwork and Homework are necessary to help students practice new material. Therefore, all work should be:

- Turned in on time
- Neat and done in pencil
- Complete with heading, including your full name, period, and assignment title.
- When a project requires students to collect data outside the classroom, this will be also considered part of the homework.
- I will post every assignment and test/quiz date on the board and on line on the school web-page. You can access it by going to www.mkhs.org and then clicking on classes/homework and then statistics/probability. Note though that sometimes the server is down and either I can't post an assignment or you can't access the webpage. This is not an excuse to skip the assignment: You must copy the assignment from the board during class time. You are recommended to subscribe to my school webpage. I will show you how to do so the 1st day of class. This will allow you to be notified every time a new assignment is posted

NOTE-TAKING

Taking notes is necessary to help you stay focused on the topic in class. Notes can be reviewed at home and kept long term for further reference. I might randomly check your notes as part of your points.

PARTICIPATION

Participation is extremely important in this class and, in order for all of us to be successful and enjoy this class, all participation must be positive.

MAKE-UP WORK AND ABSENCES

- It is respectful to inform your teacher (other than the school) of any day you will be absent, if you know of it in advance.
- You are responsible for seeking and completing any work missed while absent. Please write "ABSENT" at top of page.
- All late work will receive only partial credit, if any.
- If you miss a test or a quiz, you must make arrangements with me (as soon as you come back to class) to make up the test or quiz. Failure to do this will result in a score of zero on such test/quiz.
- Remember that you will be mostly working in groups, so your presence is NECESSARY for the group work involved.
- Please remember if you are truant, you will not be allowed to make up any missed work and will receive zero points on any in-class assignments for the day.

BINDERS

Binders are a required material and required to be brought to class every day. Your binder will help you stay organized and will be an ongoing study guide. Therefore, you must have a binder specifically for this math class. As part of class points, I may randomly check binder, which means binders must be brought to class every day and they must be kept neat and up to date. If you are absent, it is your responsibility to get any missed notes from another student in your class.

CLASS GUIDELINES

Be positive: Maintain a responsible attitude and work habits, cooperate, challenge yourself, and have fun with math.

Be present: To be successful you must attend class on a regular basis.

Be prepared: You need to be in your assigned seat with required materials on the desk when the bell rings. You are NOT allowed to loiter out of the door waiting for the tardy bell to ring. Once you've entered the class it's your responsibility to get ready for the lesson. You will be marked tardy if you are not in your seat and ready to work by the tardy bell.

Be polite: Show RESPECT for others and their property and help maintain a clean and safe environment for yourself and others.

* You are also expected to observe and adhere to all school rules and policies including the tardy policy.

ADDITIONAL INFORMATION

- I reserve the right to modify the present syllabus at any time, to better help and improve yours and other students' learning. Significant changes will be announced in class.
- You are **not allowed to use electronic equipment** (cell phones, etc.) in class. If you are using said electronic equipment, school rules will be applied.
- You are **not allowed to bring food, drinks or chewing gum** in class.
- Do not expect to get a hall pass during class.
- Any materials that I or the school provide, (which include the computers, desk materials, rulers, books, etc.) must be taken care of or will be taken away and you will be required to bring your own on a daily basis.
- There is a **ZERO tolerance for cheating**. Anyone caught cheating or letting someone copy will receive an automatic 0 (zero) for that assignment, and school policies will be applied.
- There is also a ZERO tolerance for graffiti or theft (in any form). Anyone caught will be held accountable for the damage.
- You are also required to follow all school rules.
- You are to follow all the same procedures and meet the same expectations when a substitute teacher is present. If a complaint is made about you or the class by a substitute, action will be taken.

Best wishes for a rewarding academic class and learning experience.