PROJECT DUE DATE - the last class.
You should submit a topic by November 5 .You can work by yourself or together (2-5 person

OBJECTIVE   To use some of the more advanced methods developed in this course to study and analyze a real data set of your own choosing. The data are to be obtained by you either from your own work (especially for graduate students) or from a public source (e.g., journals, newspaper, magazine, the Internet) or you may collect them yourself.

PROJECT REQUIREMENTS

1. Describe the problem carefully and explain what question(s) you are trying to answer.

2. Define the populations and the variables, and discuss the sampling issues appropriately. (For example, you may have to demonstrate that the sampling procedure you use is giving you a simple random sample. Or you may have to explain that, even though you do not have a random sample, the statistical inference is still plausible.)

3. Write up your results, including data analysis and diagnostics. Label and interpret graphs and other printout. Explain the statistical results in the context of the actual problem.

4. The report must be neat, in proper English, and on time. The length must be at most 5 pages. The pages should be stapled together and NOT bound in any kind of binder. Also, the exact source of the data must be included, e.g., a website, journal reference, whatever. If this is missing, the report will receive no credit.

5. The choice of project is up to you. It should not be too ambitious, since you have a limited amount of time to do it and there will no doubt be snags; but it should not be trivial, either. If you have any questions please see me as soon as possible.

Possible topics:
1) Technology in the classroom vs. traditional lecture presentation (power point lectures, on-line homeworks ,PRS, etc)
2) How many times , on average, does an UMass Undergraduate student visit library (let's say on a typical week) .What about a graduate student?
3) What is the mean number of emails sent or received by UMass student or Undergraduate student or Graduate student living in the dorms and a lot more - hours of sleeping ,studying , reading books...

The final paper should include the following information:
Part 1:
1) The statement of your topic e.g., how much does a UMass student spend on a typical weekend for fun and entertainment.
2) The statement of the targeted population, the sampling method -how did you choose your sample, where the observations came from, sample size? Is this a representative sample? Any problems with getting a representative sample?
3) Information about your surveying method –questions you asked, how did you ask them –using phone, email, in person …)
4) You should examine your collected data (raw data) - do you have outliers – moderate or extreme, strange responses what did you decide to do about them –remove, replace or keep them – make sure you write about this step.
Part 2:
1) Calculate summary descriptive statistics on your "clean data" – mean, median, standard deviation, minimum, and maximum, the lower and upper quartile .Make a comment.
2) Include tables, graphs (histogram, bar chart, pie chart …….).Again make a comment about shape, spread, the middle, outliers …….
3) Estimate the population parameter(s) with a 95 % confidence level (or use hypotheses testing)
4) Write a final conclusion.
If part of your project is to investigate whether there is a difference in spending money between females and males – then repeat steps 4-7 for males and females separately and see if there is a difference.
For this you can use one of the t-tests (we have 3 tests) to estimate the difference .Check all conditions.
Support your statement with hypotheses testing. You may want to use Anova or Linear Regression. Have a fun!!!!!