

## Interpreting Outcomes Describing and Understanding the MCAD Data

The data in the My Course Analytics Dashboard (MCAD) can be analyzed using some basic statistical techniques. The way that you analyze data depends on several factors including the size of the sample, the type of the data you are evaluating, and the outcome you want to consider. In this document, we will share some basic information on what you will see in the database and how you might think about it.

### Variables

A variable is an item in the data that can vary in value. Examples of variables in the MCAD database are gender and transfer status. There are two types of variables in the MCAD database: qualitative (or non-numeric) and quantitative (or numeric). Numeric variables can be either discrete (count-based) or continuous (measures).

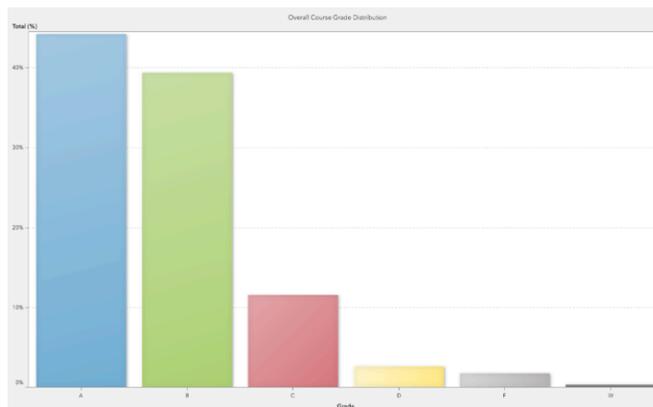
### Tables

There are several types of tables presented in the MCAD. The most common is a frequency table. This table shows summaries of data, which allow you to count the number of students in each group and view the percentage of total for students in a given group. The table shows counts of the number and percent of observations in various categories. These tables can be used for visual interpretation. You may be able to see trends in these tables and compare the percentages of particular groups that appear.

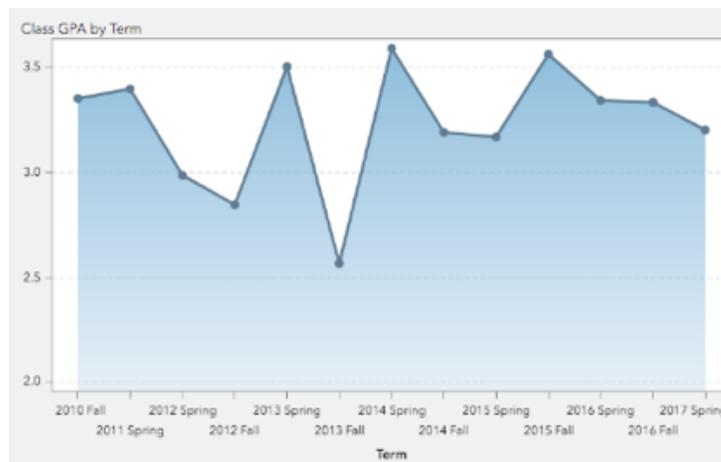
Race/Ethnicity ▲	Asian		Black/African Ameri...		White		Two or More Races		Unknown		Total	
	Total	% of...	Total	% of...	Total	% of...	Total	% of...	Total	% of...	Total	% of...
2017 Spring - TEST101 - 002	1	12.5%	.	.	4	50.0%	2	25.0%	1	12.5%	8	100.0%
2017 Spring - TEST101 - 001	1	16.7%	1	16.7%	3	50.0%	1	16.7%	.	.	6	100.0%
Total	2	14.3%	1	7.1%	7	50.0%	3	21.4%	1	7.1%	14	100.0%

### Graphs

Graphs of MCAD data may appear as bar charts or line graphs. Bar charts display the percentages of students that fit into various categories.



Line graphs display data changes for continuous variables. Line graphs present an easy visual way to compare various trends across groups. Line graphs only appear on some of the MCAD data presentation screens (e.g., class GPA).



In interpreting the data in these various graphs, you may consider the pattern of the distribution including symmetry, range of values, extreme values or outliers, and modality or most frequently occurring values. Make sure to consider the axes and scales of the various graphs.

#### Using the MCAD data

We realize that the MCAD data may raise more questions than it provides answers. We encourage you to focus on trends in student outcomes to get a sense of how various sociodemographic groups perform in your courses. This may be easiest with a course you have taught multiple times. As you begin to notice trends, you can start to think about how you might change or adapt your teaching to respond to any concerns that arise.

There are some limits to using the data. Most instructors will only have a small sample size and should be cautious about interpretation. Additionally, without comparative data on similar courses or across instructors, it is difficult to know how your courses compare to peers. We encourage you to focus on areas in your own teaching that you can monitor or improve. For instance, if you notice that a particular group of students always performs less well in your courses, you may consider some inclusive approaches to teaching that can help ameliorate the differences between groups. Please visit the resource page on the MCAD website for more information (<https://cfe.unc.edu/inclusive-teaching/>).

If you would like assistance developing approaches in the classroom that will reduce group differences, the Center for Faculty Excellence (<https://cfe.unc.edu>) can help guide you in this work. If you would like help with statistical analysis, please contact the Odum Institute (<http://odum.unc.edu/>). Finally, if you are interested in a more advanced approach, you will likely need to apply to the Office of Human Research Ethics (<http://research.unc.edu/human-research-ethics/>) for approval.