

## Understanding Your Results from the “Student Rating of Courses and Teaching” Spring 2023 and Prior

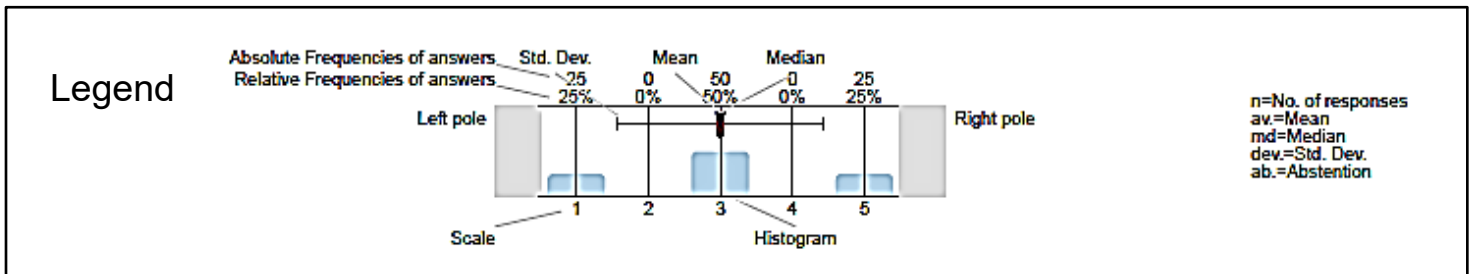
### The report header

- Instructor Name
- Term (eg, Fall 2013)
- Course-Section-Type-Instructor Count-Term (eg, SW101-001-LEC-1-Fa13)
  - Types = LEC or LAB
  - Instructor Count is ‘1’ for the majority of courses. Team-taught courses will have more than one report – one for each faculty member where ‘1’ = instructor one, ‘2’ = instructor two, etc.
- Course Title
- Number of responses / Number of students enrolled = Response Rate

Results for your course section are presented in three ways. First your course results are displayed for each question. Second your course results are displayed in the ‘Profile - Questions’ section, which facilitate a comparison of your course results with aggregated results from all courses offered that semester with the same prefix (e.g., DA, FS, GO, MB, PS, RE, etc.). Lastly, summary results are compiled for your course and course prefix group in the ‘Profile - Summary’ section.

### Results for your course section only (Bar Charts, pages 1-3)




- The results are presented in the order that students completed the questions on the evaluation form (#1.1 to #5.1).
- For each question that is based on a scale (1=Disagree Strongly to 5=Agree Strongly), a histogram (bar chart) is presented along with descriptive statistics.
- The legend is presented and described below.



### How to Read the Histogram or Bar Chart

- The scale is at the bottom: 1 (Disagree Strongly) to 5 (Agree Strongly).
  - On your results, the Left Pole and the Right Pole labels will be replaced with the question's minimum scale label (Disagree Strongly) and the maximum scale label (Agree Strongly).
- On the right-hand legend, n is the number of students who responded to the question. Above the top of the bar chart, there are two rows of numbers that correspond to each of the 5 possible responses on the rating scale. The top row of numbers reports the Absolute Frequency of answers, which is the number of students who gave that rating on the scale. The lower row reports the Relative Frequency (%) of answers, which is the percentage of students who gave that rating on the scale. The blue bars above the scale provide the same information visually, showing the Relative Frequency of responses.
  - In the Legend above, n = 100. 25 responders rated this question as a 5 (Strongly Agree) which is 25 percent (%) of all responses (25/100 = 25%).

*How to Read the Histogram or Bar Chart (continued)*

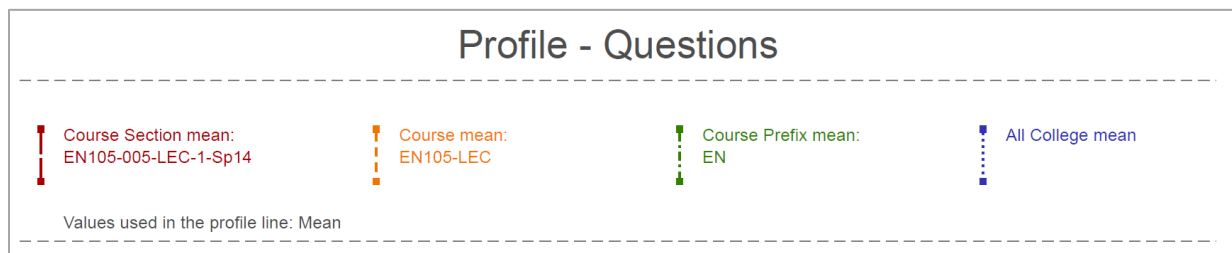
- Descriptive Statistics (See Appendix A for definitions of these statistics)
  - Several descriptive statistics are visually plotted on this image:
    - Mean – a **red** vertical bar 
    - Median – a **blue** arrow 
    - Standard Deviation – a horizontal **black** 'whisker' line that runs through the mean.   
The ends of this line mark a distance of one standard deviation above and below the mean. The mean will always be in the center of this whisker line.
  - To the right of the histogram, you will find the same descriptive statistics reported numerically:
    - Number of responses (**n**)
    - Mean (**av.**)
    - Median (**md**)
    - Standard Deviation (**dev.**)
    - Abstention (**ab.**) is not used as this only applies to “not applicable” response options. It will not be displayed on your reports.

**Results for student information questions (Frequencies, page 3)**

- The section provides results to the student information questions (#6.1 to #6.4).
- In addition to the overall n (number of respondents for #6.1, number of responses for 6.2-6.4), frequencies are shown for each response option numerically (% values) for the **course section** (red), the **course** (orange), the **course prefix** (green), and **all-college** (blue).
- For questions #6.2 to #6.4, the percentage will sum to 100%; however, for #6.1 students can select all that apply and the percentage will range from 0-100% for each of the 5 items (required for major, elective for major, etc.).

**Your course section results comparison ('Profile - Questions,' pages 4-5)**

- This section shows profile lines and descriptive statistics for questions on the survey (#1.1 to #5.1) that allow you to compare your **course section** (red) results (mean, etc.) to the aggregated results for the following:
  - **course** (orange) - all section offerings of the same course that semester (e.g., all sections of EN105 for the term).  
Note: if only one section of a course is offered, only the red course section mean profile line will appear as it 'overlaps' the orange course mean line.
  - **course prefix** (green) - all of the course sections offered that semester within the same course prefix (e.g., all EN courses for the term).
  - **all-college** (blue) – all course section offerings at the College for the semester



### *How to Read the Profiles*

- The four profile lines connect the means for each question for visual comparison. One line is for your course section, one for the course (if multiple sections are offered that semester), one for the course prefix, and one for the all college.
- Additional statistics are presented to the right: **n**, **av.**, **md**, and **dev**. For each question, descriptive statistics are provided to the right and are color-coded to correspond to the profile line (e.g., your course section is shown on the top line in red, and aggregated statistics for the course, course prefix, and all college are found below that).

### **Your course section results comparison overall ('Profile - Summary,' page 6)**

- Contains a summary of profile line comparisons for 5 items:
  1. The Course... (mean of responses to questions #1.1 to #1.9)
  2. Course Overall (question #2.1)
  3. The Instructor... (mean of responses to questions #3.1 to #3.10)
  4. Instructor Overall (question #4.1)
  5. Learning Overall (question #5.1)
- As in the 'Profile - Questions' section (above), you can compare your **course section** results (mean) to the results for the following:
  - **course** (orange) - all section offerings of the same course that semester (e.g., all sections of EN105 for the term).  
Note: if only one section of a course is offered, only the red course section mean profile line will appear as it 'overlaps' the orange course mean line.
  - **course prefix** (green) - all of the course sections offered that semester within the same course prefix (e.g., all EN courses for the term).
  - **all-college** (blue) – all course section offerings at the College for the semester
- Three of these items ('2. Course Overall,' '4. Instructor Overall,' and '5. Learning Overall') are single questions asked directly to students and are simply repeated from the profile section on pages 4 and 5.
- Two of these items '1. The Course...' and '3. The Instructor...' are indicators or constructs calculated from all the questions in the respective question groups. An indicator is the overall mean of a question group of questions. It is calculated by adding up all response values to all questions of this question group and then dividing this sum by the total number of responses given to all questions in the group. The calculation of indicators is described in more detail in Appendix A.
  - '1. The Course...' is the overall mean of questions #1.1 to #1.9.
  - '3. The Instructor...' is the overall mean of questions #3.1 to #3.10.
- This section allows you to easily examine the 'overall' questions and compare them to the indicators.
  - For example, you can compare '1. The Course...' (Indicator of questions #1.1 to #1.9) to '2. Course Overall' (single question #2.1).

## Appendix A: Calculation and Meaning of Statistics

- **Mean (av.)**

- The arithmetic mean is the average of a series of measurements. It is calculated by adding up the individual values and then dividing this sum by the number of values.
- Example Calculation:
  - The arithmetic mean for a series of measurements of 8 responses to a survey question with 5 answer options is calculated as follows:
    - 1. Sum up values of responses:  $3 + 1 + 5 + 4 + 4 + 3 + 4 + 5 = 29$
    - 2. Divide sum by number of responses:  $29 / 8 = 3.63$

- **Median (md)**

- The median divides a distribution into two halves, i.e., it is the value which is exactly in the middle of the set of values.
- This means that in 50% of cases a response value that was higher or exactly equal to this value was given. The remaining 50% of values are either lower than this value or again equal to it. Compared to the mean, the median is less likely to be influenced by few extremely high or low response values. In other words, the median is robust against outliers (values that deviate extremely).
- Median values will always be a response option (1, 2, 3, 4, or 5) or a point exactly between two options (1.5, 2.5, 3.5, or 4.5).
- Example Calculation:
  - The median of a set of data comprising 8 responses (3, 1, 5, 4, 4, 3, 4, 5) for a survey question with 5 answer options is calculated as follows:
    - 1. Order response values in ascending order: 1, 3, 3, 4, 4, 4, 5, 5
    - 2. As we have an even number of responses (8), calculate the arithmetic mean of the two middlemost values  $((4 + 4) / 2) = 4$
    - 3. If the number of responses is odd, the median is the middlemost value in the ordered list.

- **Standard Deviation (dev.)**

- The standard deviation describes how the values of a series of measurements are spread around the mean. A low standard deviation indicates that the data points tend to be very close to the mean. A high standard deviation indicates that the data points are spread out over a large range of values. It is possible that two different data sets with identical means could have different standard deviations.
- The standard deviation is the square root of the variance. The variance describes the average of the squared differences of the measurements from the mean. As the standard deviation is not a squared value it is easier to interpret in relation to individual values than the variance.
- Example Calculation:
  - To calculate the standard deviation of a set of 8 responses (3, 1, 5, 4, 4, 3, 4, 5) to a question with 5 response options:
    - 1. Calculate the sum of the squared differences of each of the values to the mean:  
 $(3 - 3.625)^2 + (1 - 3.625)^2 + (5 - 3.625)^2 + (4 - 3.625)^2 + (4 - 3.625)^2 + (3 - 3.625)^2 + (4 - 3.625)^2 + (5 - 3.625)^2 = 11.875$
    - 2. Divide the sum by (n -1):  $11.875/7 = 1.696$

- 3. Take the square root from 1.696
  - 4. The standard deviation is 1.30
- It is important to note that, often times, small differences between your score and the mean are not statistically meaningful or “significant”. The standard deviation can provide a useful comparison measure here. To know if a particular score is meaningfully different than the mean, it is essential to compare not only the means, but also the standard deviations. Such comparisons are best done with relatively large class sizes. Similar means are more statistically distinguishable with more student responses. Determining if a given score is significantly different from the average is more difficult for small classes and small course prefix groups.

• **Indicator (construct)**

- An indicator is the overall mean of a question group of survey responses. It is calculated by adding up all response values to all questions of this question group and then dividing this sum by the number of responses given.
- There are only two indicators in the Skidmore report and they are found on page 6 (‘1. The Course...’ and ‘3. The Instructor...’).
- Example Calculation:
- Calculating an indicator for a question group:

Questions in question group	Number of valid responses	Values of responses	Mean value
Question 1	5	3, 4, 2, 5, 4	3.60
Question 2	4	1, 4, 2, 4	2.75
Question 3	3	5, 3, 5	4.33
<b>Indicator Mean= (3 + 4 + 2 + 5 + 4 + 1 + 4 + 2 + 4 + 5 + 3 + 5) / 12 = 3.50</b>			

- Note: It has to be stressed that the indicator is not calculated by averaging the means computed for the individual evaluation questions. In that case, responses would not be weighted according to the number of valid responses given to each question, but rather by the number of questions in the group, resulting in a different value. In the above example this would be  $((3.60 + 2.75 + 4.33) / 3) = 3.56$ . Instead, the indicator analysis presented gives equal weight to each student response to each question in the group.