## Detailed Statistics Summary: end-of-course-survey

| Title | N | Frequency |  |  |  |  | Mean | SD | Median | Mode |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 12 |  | 4 | 5 |  |  |  |  |
| F1-01. Background - end of course survey | 20 | 00 | 2 | 3 | 4 | 11 | 4.20 | 1.06 | 5.0 | 5 |
| F1-02. expected grade | 20 | 00 | 0 | 3 | 8 | 9 | 4.30 | 0.73 | 4.0 | 5 |
| F1-02. tutorial attandenace | 20 | 03 | 3 | 1 | 5 | 8 | 3.60 | 1.54 | 4.0 | 5 |
| F2-01. review of past courses | 20 | 00 | 1 | 10 | 4 | 5 | 3.65 | 0.93 | 3.0 | 3 |
| F2-02. amount | 20 | 00 | 2 | 3 | 11 | 4 | 3.85 | 0.88 | 4.0 | 4 |
| F2-03. interesting material | 20 | 00 | 2 | 4 | 8 | 6 | 3.90 | 0.97 | 4.0 | 4 |
| F2-04. text | 20 | 00 | 2 | 8 | 5 | 5 | 3.65 | 0.99 | 3.5 | 3 |
| F2-05. supplementary texts | 20 | 01 | 6 | 10 | 3 | 0 | 2.75 | 0.79 | 3.0 | 3 |
| F2-06. library resources | 17 | 31 | 3 | 11 | 0 | 2 | 2.94 | 0.97 | 3.0 | 3 |
| F2-07. assignment problem interest | 20 | 00 | 1 | 12 | 5 | 2 | 3.40 | 0.75 | 3.0 | 3 |
| F2-08. assignment problem usefulness | 20 | 00 | 0 | 2 | 8 | 10 | 4.40 | 0.68 | 4.5 | 5 |
| F2-09. assignment grading | 20 | 00 | 0 | 1 | 9 | 10 | 4.45 | 0.60 | 4.5 | 5 |
| F2-10. term test length | 20 | 00 | 0 | 0 | 6 | 14 | 4.70 | 0.47 | 5.0 | 5 |
| F2-10a. term test appropriateness | 19 | 11 | 0 | 2 | 8 | 8 | 4.16 | 1.01 | 4.0 | 4,5 |
| F2-11. term test grading | 20 | 0 | 0 | 1 | 8 | 11 | 4.50 | 0.61 | 5.0 | 5 |
| F2-12. assignment number | 20 | 03 | 3 | 9 | 3 | 1 | 2.75 | 1.07 | 3.0 | 3 |
| F2-13. tutorial usefulness | 20 | 00 | 5 | 4 | 6 | 5 | 3.55 | 1.15 | 4.0 | 4 |
| F2-14. tutorial number | 20 | 00 | 0 | 3 | 8 | 9 | 4.30 | 0.73 | 4.0 | 5 |
| F2-15. computing resources | 19 | 12 | 3 | 9 | 4 | 1 | 2.95 | 1.03 | 3.0 | 3 |
| F3-01. Laboratories interest | 20 | 01 | 0 | 3 | 11 | 5 | 3.95 | 0.94 | 4.0 | 4 |
| F3-02. laboratories usefulness | 20 | 03 | 3 | 6 | 4 | 4 | 3.15 | 1.35 | 3.0 | 3 |
| F3-03. lab report grading | 20 | 00 | 0 | 2 | 7 | 11 | 4.45 | 0.69 | 5.0 | 5 |
| F3-04. lab report comments | 20 | 00 | 3 | 8 | 5 | 4 | 3.50 | 1.00 | 3.0 | 3 |
| F3-05. lab demonstrator rating | 20 | 00 | 0 | 0 | 5 | 15 | 4.75 | 0.44 | 5.0 | 5 |
| F3-05b. lab demonstrator effectiveness | 20 | 00 | 0 | 0 | 6 | 14 | 4.70 | 0.47 | 5.0 | 5 |
| F4-01. new material introduction speed | 20 | 00 | 3 | 4 | 10 | 3 | 3.65 | 0.93 | 4.0 | 4 |
| F4-02. key concepts | 20 | 00 | 2 | 10 | 6 | 2 | 3.40 | 0.82 | 3.0 | 3 |
| F4-03. encourage questions | 20 | 00 | 0 | 0 | 4 | 16 | 4.80 | 0.41 | 5.0 | 5 |
| F4-04. related materials | 20 | 00 | 2 | 7 | 9 | 2 | 3.55 | 0.83 | 4.0 | 4 |
| F4-05. presentation of material | 20 | 01 | 4 | 7 | 6 | 2 | 3.20 | 1.06 | 3.0 | 3 |
| F4-06. instructor availablity | 20 | 00 | 1 | 4 | 8 | 7 | 4.05 | 0.89 | 4.0 | 4 |
| F4-07. instructor helpfullness | 17 | 30 | 1 | 5 | 7 | 4 | 3.82 | 0.88 | 4.0 | 4 |
| F4-07. stimulation of interest | 20 | 00 | 2 | 5 | 9 | 4 | 3.75 | 0.91 | 4.0 | 4 |
| F4-09. Course rating | 20 | 00 | 0 | 5 | 9 | 6 | 4.05 | 0.76 | 4.0 | 4 |
| F4-10. Instructor rating | 20 | 00 | 2 | 6 | 8 | 4 | 3.70 | 0.92 | 4.0 | 4 |

## More Detailed Statistics Summary: end-of-course-survey

## Question: F1-01. Background - end of course survey

This is the end of course survey for this physics course. Please let me know if there are any problems. I have put this together from two different survey sources, one mandated by CUPE for sessional instructors, and one used by the Department of Physics for Physics courses, so there might be some repitition of some types of questions.

I have assigned "grades" to each of the survey answers in order to aid in tracking responses. Any "score" you might receive for completing the survey IS NOT recorded as part of your course grades. This survey is anonymous and the results are returned to the instructor only in aggregate form, along with all free response comments.

Please answer each survey question/statement with a response from one to five, with higher numbers representing agreement. I have tried to structure each statement so that "good" responses coorespond with large numbers, so some of the statements may be worded a little strangely. Any questions that are not relevant to your particular situation can just be left blank.

I think that you can hit the "save answer" button after each question and stop at any time to return to the survey later. If you hit the "finish" button, you will not be able to complete any survey questions that you did not answer, so make sure you are completely finished before hitting the "finish" button! However, none of your answers are submitted to me until the "finish" button is pressed, so make sure that you do submit all the answers before the date when the survey will be closed.

The first few questions deal with background information:
What percentage of the lectures did you attend?

1. $0-20 \%$ 2. $20-40 \%$ 3. $40-60 \%$ 4. $60-80 \% 5.80-100 \%$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.20 | 1.06 | 5.0 | 5 | 0 | 0 | 2 | 3 | 4 | 11 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $15.0 \%$ | $20.0 \%$ | $55.0 \%$ |

Question: F1-02. expected grade
What final grade do you expect to achieve in this course?

1. F 2. D 3. C 4. B 5. A

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.30 | 0.73 | 4.0 | 5 | 0 | 0 | 0 | 3 | 8 | 9 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $15.0 \%$ | $40.0 \%$ | $45.0 \%$ |

Question: F1-02. tutorial attandenace
What percentage of the tutorials did you attend?

1. $0-20 \%$ 2. $20-40 \%$ 3. $40-60 \%$ 4. $60-80 \% 5.80-100 \%$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.60 | 1.54 | 4.0 | 5 | 0 | 3 | 3 | 1 | 5 | 8 |
|  |  |  |  |  | $0.0 \%$ | $15.0 \%$ | $15.0 \%$ | $5.0 \%$ | $25.0 \%$ | $40.0 \%$ |

The next few questions deal with course content:
An appropriate amount of time was spent on review of material from previous courses.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.65 | 0.93 | 3.0 | 3 | 0 | 0 | 1 | 10 | 4 | 5 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $5.0 \%$ | $50.0 \%$ | $20.0 \%$ | $25.0 \%$ |

## Question: F2-02. amount

The amount of material covered during the course was appropriate.
$1=$ Disagree Strongly $\qquad$ 5 = Agree Strongly

1. ...... 2
2. 
3. $\qquad$ 4. $\qquad$ 5. . . . . .

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.85 | 0.88 | 4.0 | 4 | 0 | 0 | 2 | 3 | 11 | 4 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $15.0 \%$ | $55.0 \%$ | $20.0 \%$ |

## Question: F2-03. interesting material

The class material was very interesting.
$1=$ Disagree Strongly $\ldots . . .5=$ Agree Strongly
1.
2. ...... 3.
3. ...... 4 $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.90 | 0.97 | 4.0 | 4 | 0 | 0 | 2 | 4 | 8 | 6 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $20.0 \%$ | $40.0 \%$ | $30.0 \%$ |

## Question: F2-04. text

The text was very useful in helping me understand the course material.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.65 | 0.99 | 3.5 | 3 | 0 | 0 | 2 | 8 | 5 | 5 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $40.0 \%$ | $25.0 \%$ | $25.0 \%$ |

Question: F2-05. supplementary texts

The supplementary texts were very useful in helping me understand the course material.
1 = Disagree Strongly ...... $5=$ Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 2.75 | 0.79 | 3.0 | 3 | 0 | 1 | 6 | 10 | 3 | 0 |
|  |  |  |  |  | $0.0 \%$ | $5.0 \%$ | $30.0 \%$ | $50.0 \%$ | $15.0 \%$ | $0.0 \%$ |

Question: F2-06. library resources
The library resources were very useful in helping me understand the course material.
1 = Disagree Strongly ...... 5 = Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 17 | 2.94 | 0.97 | 3.0 | 3 | 3 | 1 | 3 | 11 | 0 | 2 |
|  |  |  |  |  | $15.0 \%$ | $5.0 \%$ | $15.0 \%$ | $55.0 \%$ | $0.0 \%$ | $10.0 \%$ |

Question: F2-07. assignment problem interest
The assignment problems were very interesting.
1 = Disagree Strongly ...... 5 = Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.40 | 0.75 | 3.0 | 3 | 0 | 0 | 1 | 12 | 5 | 2 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $5.0 \%$ | $60.0 \%$ | $25.0 \%$ | $10.0 \%$ |

Question: F2-08. assignment problem usefulness
The assignment problems were very useful in helping me understand the course material.
1 = Disagree Strongly ...... 5 = Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.40 | 0.68 | 4.5 | 5 | 0 | 0 | 0 | 2 | 8 | 10 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $40.0 \%$ | $50.0 \%$ |

## Question: F2-09. assignment grading

The assignment problems were graded fairly.
1 = Disagree Strongly ...... 5 = Agree Strongly
$\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.45 | 0.60 | 4.5 | 5 | 0 | 0 | 0 | 1 | 9 | 10 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $5.0 \%$ | $45.0 \%$ | $50.0 \%$ |

Question: F2-10. term test length
The time allowed for term tests was appropriate.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly
1.
2. . . . . . .
3.
4.
5. . . . . .

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.70 | 0.47 | 5.0 | 5 | 0 | 0 | 0 | 0 | 6 | 14 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $30.0 \%$ | $70.0 \%$ |

Question: F2-10a. term test appropriateness
The term tests provided an accurate evaluation of my understanding of the course material.

1 = Disagree Strongly $\qquad$ 5 = Agree Strongly
1.
2
3. $\qquad$ 4. $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 19 | 4.16 | 1.01 | 4.0 | 4,5 | 1 | 1 | 0 | 2 | 8 | 8 |
|  |  |  |  |  | $5.0 \%$ | $5.0 \%$ | $0.0 \%$ | $10.0 \%$ | $40.0 \%$ | $40.0 \%$ |

Question: F2-11. term test grading
The term tests were graded fairly.
1 = Disagree Strongly ...... $5=$ Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.50 | 0.61 | 5.0 | 5 | 0 | 0 | 0 | 1 | 8 | 11 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $5.0 \%$ | $40.0 \%$ | $55.0 \%$ |

Question: F2-12. assignment number
The number of assignments was appropriate.
1 = Disagree Strongly ...... 5 = Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode | 而 | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 2.75 | 1.07 | 3.0 | 3 | 0 | 3 | 4 | 9 | 3 | 1 |
|  |  |  |  |  | $0.0 \%$ | $15.0 \%$ | $20.0 \%$ | $45.0 \%$ | $15.0 \%$ | $5.0 \%$ |

Question: F2-13. tutorial usefulness
The tutorials were very useful in helping me understand the course material.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly
1.
3.
4.
5. . . . . . .

| $\mathbf{N}$ | Mean | SD | Median | Mode | $\mathbf{1}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.55 | 1.15 | 4.0 | 4 | 0 | 0 | 5 | 4 | 6 | 5 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $25.0 \%$ | $20.0 \%$ | $30.0 \%$ | $25.0 \%$ |

Question: F2-14. tutorial number
The number of tutorials was appropriate.
1 = Disagree Strongly $\qquad$ 5 = Agree Strongly

1. . . . . .
2. 
3. $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.30 | 0.73 | 4.0 | 5 | 0 | 0 | 0 | 3 | 8 | 9 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $15.0 \%$ | $40.0 \%$ | $45.0 \%$ |

Question: F2-15. computing resources
The computing resources available were adequate.
1 = Disagree Strongly ...... $5=$ Agree Strongly
1.
3.
4. $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 19 | 2.95 | 1.03 | 3.0 | 3 | 1 | 2 | 3 | 9 | 4 | 1 |
|  |  |  |  |  | $5.0 \%$ | $10.0 \%$ | $15.0 \%$ | $45.0 \%$ | $20.0 \%$ | $5.0 \%$ |

Question: F3-01. Laboratories interest
The next few questions deal with laboratories:
The laboratories for this course were very interesting.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly

1. . . . . . .
2 3.
2. $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.95 | 0.94 | 4.0 | 4 | 0 | 1 | 0 | 3 | 11 |
|  |  |  |  |  | $0.0 \%$ | $5.0 \%$ | $0.0 \%$ | $15.0 \%$ | $55.0 \%$ |

Question: F3-02. Iaboratories usefulness
The laboratories were very useful in helping me understand the course material.
1 = Disagree Strongly $\qquad$ 5 = Agree Strongly
1.
3. $\qquad$ 4. 5. . . . . .

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.15 | 1.35 | 3.0 | 3 | 0 | 3 | 3 | 6 | 4 | 4 |
|  |  |  |  |  | $0.0 \%$ | $15.0 \%$ | $15.0 \%$ | $30.0 \%$ | $20.0 \%$ | $20.0 \%$ |

Question: F3-03. lab report grading
The lab reports were graded fairly.

```
1 = Disagree Strongly
```

$\qquad$

``` 5 = Agree Strongly
```

$\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.45 | 0.69 | 5.0 | 5 | 0 | 0 | 0 | 2 | 7 | 11 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $35.0 \%$ | $55.0 \%$ |

Question: F3-04. lab report comments
Comments on lab reports were very useful in helping me understand the course material.
$1=$ Disagree Strongly $\qquad$ 5 = Agree Strongly

1. ...... 2.
2. 
3. $\qquad$ 4. ...... 5 $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.50 | 1.00 | 3.0 | 3 | 0 | 0 | 3 | 8 | 5 | 4 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $15.0 \%$ | $40.0 \%$ | $25.0 \%$ | $20.0 \%$ |

## Question: F3-05. lab demonstrator rating

My overall rating of the lab demonstrator is:
1 = Poor $\qquad$ $5=$ Excellent

1. ...... 2 $\qquad$
$\qquad$
2. 
3. . . . . . .

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.75 | 0.44 | 5.0 | 5 | 0 | 0 | 0 | 0 | 5 | 15 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $25.0 \%$ | $75.0 \%$ |

Question: F3-05b. Iab demonstrator effectiveness
The lab deomonstrators were very effective.
1 = Disagree Strongly ...... 5 = Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.70 | 0.47 | 5.0 | 5 | 0 | 0 | 0 | 0 | 6 | 14 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $30.0 \%$ | $70.0 \%$ |

Question: F4-01. new material introduction speed
The next few questions deal with the instructor and in-class presentation:
The speed of introduction of material was appropriate.
1 = Disagree Strongly ...... 5 = Agree Strongly
1.
.
3. $\qquad$ 4.
5. . . . . .
.

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.65 | 0.93 | 4.0 | 4 | 0 | 0 | 3 | 4 | 10 | 3 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $15.0 \%$ | $20.0 \%$ | $50.0 \%$ | $15.0 \%$ |

Question: F4-02. key concepts
Key concepts were explained very well.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.40 | 0.82 | 3.0 | 3 | 0 | 0 | 2 | 10 | 6 | 2 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $50.0 \%$ | $30.0 \%$ | $10.0 \%$ |

Question: F4-03. encourage questions
The instructor encouraged the asking of questions in class.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly

1. ...... 2. . . . . . 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.80 | 0.41 | 5.0 | 5 | 0 | 0 | 0 | 0 | 4 | 16 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $20.0 \%$ | $80.0 \%$ |

Question: F4-04. related materials

The instructor related the material to other areas of physics.
1 = Disagree Strongly ...... 5 = Agree Strongly
1.
2
3. $\qquad$ 4 $\qquad$ 5.

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.55 | 0.83 | 4.0 | 4 | 0 | 0 | 2 | 7 | 9 | 2 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $35.0 \%$ | $45.0 \%$ | $10.0 \%$ |

Question: F4-05. presentation of material
The in-class presentation of material was done very well.
1 = Disagree Strongly ...... 5 = Agree Strongly

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| N | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.20 | 1.06 | 3.0 | 3 | 0 | 1 | 4 | 7 | 6 | 2 |
|  |  |  |  |  | $0.0 \%$ | $5.0 \%$ | $20.0 \%$ | $35.0 \%$ | $30.0 \%$ | $10.0 \%$ |

## Question: F4-06. instructor availablity

The instructor was very available to students outside class.
$1=$ Disagree Strongly ...... $5=$ Agree Strongly
1.
2.
3. $\qquad$ 4. ...... 5 $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.05 | 0.89 | 4.0 | 4 | 0 | 0 | 1 | 4 | 8 | 7 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $5.0 \%$ | $20.0 \%$ | $40.0 \%$ | $35.0 \%$ |

Question: F4-07. instructor helpfullness
When available outside of class, the instructor was very helpful.
$1=$ Disagree Strongly $\ldots . . .5=$ Agree Strongly
1.
2.
3. $\qquad$ 4. . . . . . 5 $\qquad$

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 17 | 3.82 | 0.88 | 4.0 | 4 | 3 | 0 | 1 | 5 | 7 | 4 |
|  |  |  |  |  | $15.0 \%$ | $0.0 \%$ | $5.0 \%$ | $25.0 \%$ | $35.0 \%$ | $20.0 \%$ |

Question: F4-07. stimulation of interest
The instructor greatly stimulated my interest in the course material.
1 = Disagree Strongly $\qquad$ 5 = Agree Strongly
$\qquad$

1. ...... 2.
2. 
3. 
4. 

| $\mathbf{N}$ | Mean | SD | Median | Mode | $\mathbf{1}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.75 | 0.91 | 4.0 | 4 | 0 | 0 | 2 | 5 | 9 | 4 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $25.0 \%$ | $45.0 \%$ | $20.0 \%$ |

Question: F4-09. Course rating
My overall rating of the course is:
$1=$ Poor ...... 5 = Excellent

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode | - | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 4.05 | 0.76 | 4.0 | 4 | 0 | 0 | 0 | 5 | 9 | 6 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $0.0 \%$ | $25.0 \%$ | $45.0 \%$ | $30.0 \%$ |

Question: F4-10. Instructor rating
My overall rating of the instructor of the course is:
1 = Poor ...... 5 = Excellent

1. ...... 2. ...... 3. ...... 4. ...... 5. ......

| $\mathbf{N}$ | Mean | SD | Median | Mode |  | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 3.70 | 0.92 | 4.0 | 4 | 0 | 0 | 2 | 6 | 8 | 4 |
|  |  |  |  |  | $0.0 \%$ | $0.0 \%$ | $10.0 \%$ | $30.0 \%$ | $40.0 \%$ | $20.0 \%$ |

## Detail Summary: end-of-course-survey

Question: F2-z. Further comments about course content/resources

What further comments do you have about the course content and/or available resources?

## Responses

$\left.\begin{array}{|ll|}\hline \text { User ID } & \text { Response } \\ 1 & \begin{array}{l}\text { I thought that the number of assignments we were given was ok, } \\ \text { but I think that the length of those assignments was too large. WWe } \\ \text { only had a week to do them plus we have responsibilities in our } \\ \text { other classes for assignments and the like. }\end{array} \\ 2 & \begin{array}{l}\text { I would have liked the course material to be a bit more focused, } \\ \text { rather than spread out over a range of fideas on quantum physics. } \\ \text { Rather, if we had done fewer topics but covered them for longer, } \\ \text { with COMPLETE examples done in class to follow. }\end{array} \\ 5 & \begin{array}{l}\text { Very interesting course but it could be overwhelming at times. }\end{array} \\ 6 & \begin{array}{l}\text { More library resources would be nice, or even just to be made } \\ \text { aware of any available resources there. }\end{array} \\ \text { I'm disappointed that I didn't get more out of the course. .. but } \\ \text { then, I'm mostly disappointed that I didn't put more into the } \\ \text { course. }\end{array}\right\}$

## Detail Summary: end-of-course-survey

## Question: F3-05a. lab demonstrators names

What was(were) the name(s) of the lab demonstrator(s)?


Responses

| User ID | Response |
| :--- | :--- |
| 1 | Dave Marshall |
| 2 | Dave Marshall |
| 3 | David Marshall |
| 4 | Dave Marshall |
| 5 | David Marshall, Taylor Scott (Velocity of light) |
| 6 | Dave Marshall |
| 7 | Dave Marshall |
| 8 | dave marshall |
| 9 | Dave Marshall |
| 10 | Dave Marshall |
| 11 | Dave Marshall |
| 12 | Dave Marshal |
| 13 | David Marshall |
| 14 | Dave Marshall (also Taylor S.) |
| 15 | dave marshall |
| 16 | Dave Marshall |
| 17 | Dave Marshall |
| 18 | Dave |
| 20 | Dave Marshall |

## Detail Summary: end-of-course-survey

Question: F3-z. Further comments Laboratories

What further comments do you have about the Laboratories?
$\square$

## Responses

| ser ID | Response |
| :---: | :---: |
| 1 | mabye update them? |
| 2 | The instructor was great but there was not very many comments as to what you did wrong on lab reports. It would be nice to know where to spend the most focus when writing the report. And also I dont think it is necessary to do a write up for most of the labs. Maybe cut back to only doing 1 or 2 full write ups. |
| 3 | Dave was very helpful in and outside of the laboratory classroom. He was always available if we had questions, and was reasonable with the due dates for the laboratories. |
| 4 | I found that writing up full lab reports for all the labs was very time consuming and it really didnt help me learn the material. |
| 5 | They were very interesting in the way that it was the method that first determined a fundamental equation, concept or value. |
| 6 | Difficult to complete given the amount of assignments |
| 7 | I enjoyed the 'historical context' of the labs. |
| 8 | none |
| 9 | It would have been nice if the lab topics matched those being discussed in class (ie. the relativity lab was done at the very beginning of the term when it was covered in lecture). |
| 10 | I think that it would have been more useful had there been more comments written on the lab reports to see where we went wrong. Otherwise I thought the labs were evaluated ver well. However, the experiments themselves did not really help at all in my understanding of the course material. |
| 11 | I didnt see much relation between course material and labs. The labs were more of a stress to me than an aid. covering things that we learned in highschool, and that proved less than doable (speed of light: achieved number 1000x smaller than expected, and millikan oildrop) |
| 12 | they should be few full write ups |
| 13 | no comment |
| 14 | The laboratory writeups were far too much work for the grade weighting they were given in the course. I would suggest more half-writeups for the labs, since the understanding of the material in the lab does not decrease, and more time is made available for reading and understanding other course material. |
| 16 | There should not be as many full lab write ups |
| 17 | On top of reading prior to labs; detailed explanations especially of mistakes to avoid, should be given to students to avoid incorrectly performed labs which lead to incorrect lab report. As an example, I would use my Millikan Oil Drop experiment whereby the oil drops charge had to vary during the course of its observation; but unfortunately my data was not accurate enough to represent the required results due to this slight oversight. |
| 18 | Good labs, maybe equipment a bit outta date |

## Detail Summary: end-of-course-survey

Question: F4-z. Further comments about instructor and in-class presentation

What further comments do you have about the instructor and in-class presentation?

## Responses

## User ID Response

1
2 I think more time should be spent on actually teaching the class and not doing "The agenda" at the beginning of every class. We already know what we are there to learn each day so he doesnt have to tell us. (We were given a week by week schedule of our readings). Sometimes it was hard to get the readings done for the thursday class so I would go into it knowing nothing so the lesson would make no sense to me. He teaches assuming that everyone has read the material and he should teach it thinking that no one has read the material. Some people are too scared to ask questions in class so the instructor should cover everything from the readings and most of the time only things that are asked about are covered.

3 Johann tried very hard to give us as much help as possible, and was very interested in improving the way the course is taught. I greatly admire professors who are willing to change and reevaluate how they do things according to what would be best for the students.
4 I think that allowing us as students to ask questions in leacture is great, but it first required you to do the readings first and there are some days that things get a little crazy and you dont have time to do the readings and so the "student-led-teacher-directed" discussions that the lectures are based on are not necessarily worth going to. I think that maybe there should have been more structure in the lectures.
5 There should be more presentation of the course rather than reading and asking question about grey areas. We are talking about Quantam physics, not grade 10 algebra. There should also be more examples. Which would create a better understanding of the material, rather than strugglinbg through the assignements which are graded.
6 More preparation needs to be done for the presentation of material in class. It seems that the material was lacking direction given that the class format was usually outlined by students at the beginng of the class.
7 Thanks, Johann!

8 good class!
9
10 I think the course was well presented, but it depended way too much on having completed the readings prior to class. Since on many occasions I didn't have the time to complete the readings before class, the lectured didn't benefit me as much as I would have liked. I also would have liked to have seen a few more example problems done in class.

12 in class presentation should be elaborated with more illustrative examples. good thing, toward the end ot the course the instructor

|  | actaully conformed with the class needs, he did a great job by <br> actually doing more examples and involving the students more. |
| :--- | :--- |
| 13 | no comment |
| 14 | Johann did an excellent job making the course material interesting <br> and easy to understand. |
| 17 | Keep up the good work!! |
| 18 | Classes were always interesting and helped with the understanding <br> of the material (at least the ones attended) <br> johann clearly paid attention to the comments of the midyear <br> survey. there were a lot more examples to work through in class <br> during the second half. thanks. |

## Detail Summary: end-of-course-survey

## Question: Fz. Further comments about the course overall

What further comments do you have about the course overall?
$\square$

## Responses

| User ID | Response |
| :---: | :---: |
| 1 | A very good introduction to quantum but man am i getting tired of this whole "everything you know is wrong" idea that keeps on coming up in physics |
| 2 | I think it is a good course, but the use of a third year textbook is kinda hard. I am finding trouble understanding the text sometimes because it is so technical. We should have a textbook that we can understand. |
| 3 |  |
| 5 | The course was interesting, but became too much at times, with an assignent and a lab due every week. But if the material was presented in class a little more with some examples the assignments would be better, because the students would have more of an understanding of the material. If there was anything that struggled the student the texts and other sources are there to remind or aid. |
| 7 | I still don't get it. |
| 8 | good class!! |
| 9 | I really enjoyed this class, and I feel like I've learned a lot. |
| 10 | Nothing really...overall it was a good course, just a lot of work. |
| 11 | I enjoyed the course material, not so much on the labs and the last assignment during exams |
| 12 | course is very interesting |
| 13 | no comment |
| 14 | No further comments. |
| 16 | it was a really interesting course overall |
| 17 | To perform some practical applications of Quantum physics in Labs rather than investigate or proove the quantum nature of energy in all labs. |
| 18 | Lectures and labs were run really well, material was interesting good course! |

