## Description of Your Report

Your Course Evaluation Report contains up to four sets of items, represented in up to four sections in your report, described below.

## Sets of Items

## Institutional Items

These eight items are consistent across the University of Toronto. They are comprised of:

- Five rating-scale items which represent institution-wide teaching and learning priorities.
- The institutional composite mean, a mathematical average of these first five items.
- One rating-scale item on the overall quality of a student's learning experience.
- Two qualitative comment items.


## Divisional Items

These items are consistent across your division. They represent division-wide priorities for teaching and learning.

## Departmental/Program/Course-Type Items

These items (when applicable) represent further levels of granularity and specificity for teaching and learning priorities within your division (e.g., department, program, course type).

## Instructor-Selected Items

These items are optional items which may be selected from the item bank by instructors during the question personalization period.

- Note that the results from these items are only reported to instructors, as they are primarily intended to function as personal formative feedback.


## Report Sections

The following provide different statistical summaries and representations for your institutional, divisional, and departmental/programmatic items (where appropriate).

## Section 1: Course Evaluation Overview

Provides all course evaluation data except instructor-selected items.

## Section 2: Response Distributions and Additional Statistics

Provides detailed response distributions.

- The number and relative percentage of respondents providing a given answer is provided, along with a graphical representation.
- This section also reports further statistics for each set of items relative to Section 1.


## Section 3: Comparative Data

Provides comparative means for your course as compared to the relevant means across all other evaluated courses at a particular level of comparison (e.g. division, program) for each set of items.

## Section 4: Instructor-Selected Items

Provides data for optional items that instructors can select from the item bank during the question personalization period. This section is formatted identically to Section 2.

## Statistical Terms Used in this Report

Mean: The mathematical average. This measure is the most sensitive, and can be greatly affected by extreme and/or divergent scores.

Median: The middle value when all responses are ordered. This measure is less affected by extreme and/or divergent scores.

Mode: The most frequently occurring score.
Standard deviation: A measure of the "spread" of the data.

## FAS Winter 2021 Undergrad

|  |  |
| :--- | ---: |
| Course Name: Analysis II MAT257Y1-Y-LEC0101 (SYNC) | Instructor: Dror Bar-Natan <br> Section: LEC0101 |
| Division: ARTSC | Delivery Mode: SYNC |
| Session: Y |  |
| Session Codes: F = First/Fall, S = Second/Winter | Report Generation Date: April 21, 2021 |
|  |  |
| Raters | Students |
| Responded | 10 |
| Invited | 22 |

## Section 1: Course Evaluation Overview

## Part A. Core Institutional Items

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal

| Question | Summary |
| :--- | ---: |
|  | Mean |
| Median |  |
| The cound the course intellectually stimulating. | 4.9 |
| The instructor (Dror Bar-Natan) | 5.0 |
| Course projects, assignments, tests, and/or exams improved my understanding of the course material. | 4.9 |
| Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding <br> of the course material. | 4.0 |
| Institutional Composite Mean | 4.9 |

Scale: 1-Poor 2-Fair 3-Good 4-Very Good 5-Excellent

| Question | Summary |
| :--- | :---: |
|  | Mean |
| Overall, the quality of my learning experience in this course was: | 4.8 |

## 7. Please comment on the overall quality of the instruction in this course.

## Comments

This class was very well taught throughout. Lectures were clear and interesting. The assignments were well made and the appropriate level of difficulty.

## Dror Bar-Natan is an awesome professor!

Dror is a legend.
Instruction was excellent and I really enjoyed the course and learned well. Every class was well put together and lectures did a very good job of presenting both proofs and their motivations. Overall just a very well taught class.
Dror is a legend what more can I say.
More instructive comment: Dror responded the best to the pandemic compared to all instructors. He was the most techsavy, and produced the best recorded lectures. All notes/recordings where posted on time in a very organized way with was very helpful.

I like Prof Bar-Natan and his course! However, I could have benefited from this course more:
(1) The textbook was Spivak, but I don't think this book did a good job as an introductory text. I am a stupid person, so I would really appreciate more detials being presented when I learned something the first time.
(2) Most of the time, Prof just gave a sketch of the proof (and there might be minor mistakes in the proof). Prof believed that the details were easy for someone who had learned MAT157. Easy as they might look, when I thought about them carefully, some "WLOG" really needed more justification; I really feel that there is a gap between MAT157 and MAT257 (the difficulty of MAT157 should be increased!), and I belive that technical details are still important for a 2nd year student. Sadly, the details could not be found in our textbook either, because our textbook was Spivak.
(3) The manifold part did not connect well. We learned everything in $R^{\wedge} n$, and all of a sudden, three definitions were listed, and we were told that what we had learned also applied to the manifolds; they were basically the same, so we would just use the old good properties and would not prove them again... On the other hand, some time spent on other materials could have been cut down. For instance, we spent one week on the proof of IFT and two weeks on the proof of CoV. There are some interesting ideas in the proofs, but it was not so fun to listen to Prof proving them for two weeks. Besides, when a proof is splited into so many small chunks, it can be easy to lose track of the big picture.
(4) What I would suggest is that Prof post some handouts of the proofs of the important theorems. In this way we can spend less time on them in class and see more details. Why can't we just refer to the textbook? Because (a) our book was Spivak and (b) Prof's approach can be better than the one in the book. Prof did post the notes written in class, but that did not help much, because we had already seen them in class.
(5) Some questions in the last few assignments were much higher than the average difficulty of all asignment questions.

1. He explains the concepts in a intuitive manner both the details on the main idea/intuition - made what I thought is a very hard course very approachable - when I said the early 9am class is the best part of my day I mean it.
2. The professor sure knows how to get my brain flowing nice and early in the morning with daily riddles before class - these are a lot of fun to think about.
3. The professor is very approachable in answering questions that I had about the course material.

This course was fantastic. I definetly struggled with parts of the MAT257 material both overall it has been a real joy to learn. My one piece of negative feedback is that the end of the course feels slightly rush, however, this could be caused by a number of things including the online enviorment. Thanks for a great year.
Materials in the course were very well explained.
Excellent. Professor Bar-Natan is very organized and good at providing intuitive expositions of difficult mathematical concepts. He made a lot of the hard ideas digestible and interesting.

## 8. Please comment on any assistance that was available to support your learning in this course.

## Comments

The professor responded promptly to questions on Piazza and the tutorials were very well done.
All four TAs are super supportive.
I think homework problems could sometimes have been a bit more difficult (and some of the tests). Perhaps more challenging problems (so even the best students are puzzled for a bit) could be given on two-week assignments instead of the weekly ones. On a separate note, I was generally impressed with tutorial quality.

Eventually, I found one of the TAs actually taught you how to do assignment questions in his tutorials...
Overall it was decent.
The teaching assistants are very kind and always come to tutorials prepared to answer questions we have about the course material.
Tutorials were very helpful. The reject questions before tests were also very helpful and motivating for studying.
We had office hours and tutorials.

## Part B. Divisional Items

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal

| Question | Summary |
| :--- | ---: |
|  | Mean |
| FAS001 The instructor (Dror Bar-Natan) generated enthusiasm for learning in the course. | 4.9 |

Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy

| Question | Summary |
| :--- | ---: |
|  | Mean |
|  | Median |
| SAS002 Compared to other courses, the workload for this course was... | 3.7 |
| Question |  |
| FAS003 l would recommend this course to other students. |  |

## Part C: Departmental Items

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal

| Question | Summary |
| :--- | ---: |
| The course instructor (Dror Bar-Natan) explained concepts clearly. | Mean |
|  | Median |
|  | 4.8 |
| Scale: 1-Not At All $\mathbf{2}$ - Somewhat | 5 - Moderately |
| Question |  |
| The course instructor (Dror Bar-Natan) was approachable. | $\mathbf{5 - A}$ Great Deal |

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal

| Question | Summary |
| :--- | ---: |
|  | Mean Median |
| The course instructor (Dror Bar-Natan) answered questions clearly. | 4.9 |

Scale: 1-Poor 2-Fair 3-Good 4-Very Good 5-Excellent

| Question | Summary |
| :--- | :---: |
| UNIT(OQI) Overall, the quality of instruction provided by (Dror Bar-Natan) in this course was: | Mean |

## Section 2: Response Distributions and Additional Statistics

This section provides detailed response distributions.
Mean: The mathematical average. This measure is the most sensitive, and can be greatly affected by extreme and/or divergent scores.

Median: The middle value when all responses are ordered. This measure is less affected by extreme and/or divergent scores.

Mode: The most frequently occurring score.
Standard deviation: A measure of the "spread" of the data.

## Part A: Core Institutional Items

1. I found the course intellectually stimulating.

2. The course provided me with a deeper understanding of the subject matter.

3. The instructor (Dror Bar-Natan) created a course atmosphere that was conducive to my learning.

4. Course projects, assignments, tests and/or exams improved my understanding of the course material.

| 5 A Great Deal (8) |  |  |  | 80\% | 100\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 4 Mostly (2) |  | 20\% |  |  |  |
| 3 Moderately (0) | 0\% |  |  |  |  |
| 2 Somewhat (0) | 0\% |  |  |  |  |
| 1 Not At All (0) | 0\% |  |  |  |  |
| 0 |  | 50\% |  |  |  |
| Statistics |  |  |  |  | Value |
| Mean |  |  |  |  | 4.8 |
| Median |  |  |  |  | 5.0 |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.4 |

5. Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.

| 5 A Great Deal (8) |  |  |  | 80\% | 100\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 4 Mostly (2) | $\begin{aligned} & 0 \% \\ & 0 \% \\ & 0 \% \end{aligned}$ | 20\% |  |  |  |
| 3 Moderately (0) |  |  |  |  |  |
| 2 Somewhat (0) |  |  |  |  |  |
| 1 Not At All (0) |  |  |  |  |  |
| 0 |  | 50\% |  |  |  |
| Statistics |  |  |  |  | Value |
| Mean |  |  |  |  | 4.8 |
| Median |  |  |  |  | 5.0 |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.4 |

6. Overall, the quality of my learning experience in this course was....

| 5 Excellent (8) |  |  |  | 80\% | 100\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 4 Very Good (2) |  | 20\% |  |  |  |
| 3 Good (0) | 0\% |  |  |  |  |
| 2 Fair (0) | 0\% |  |  |  |  |
| 1 Poor (0) | 0\% |  |  |  |  |
|  |  |  | 50\% |  |  |
| Statistics |  |  |  |  | Value |
| Mean |  |  |  |  | 4.8 |
| Median |  |  |  |  | 5.0 |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.4 |

## Part B. Divisional Items

The instructor (Dror Bar-Natan) generated enthusiasm for learning in the course.

| 5 A Great Deal (9) | (10\% 90\% |  |  | 90\% |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 4 Mostly (1) |  | 10\% |  |  |  |
| 3 Moderately (0) | 0\% |  |  |  |  |
| 2 Somewhat (0) | 0\% |  |  |  |  |
| 1 Not At All (0) | 0\% |  |  |  |  |
|  |  |  | 50\% |  | 100\% |
| Statistics |  |  |  |  | Value |
| Mean |  |  |  |  | 4.9 |
| Median |  |  |  |  | 5.0 |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.3 |

Compared to other courses, the workload for this course was...


I would recommend this course to other students.


## Part C. Departmental Items

The course instructor (Dror Bar-Natan) explained concepts clearly.

| 5 A Great Deal (8) |  |  |  | 80\% | 100\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 4 Mostly (2) |  | 20\% |  |  |  |
| 3 Moderately (0) | 0\% |  |  |  |  |
| 2 Somewhat (0) | 0\% |  |  |  |  |
| 1 Not At All (0) | 0\% |  |  |  |  |
| 0 |  | 50\% |  |  |  |
| Statistics |  |  |  |  | Value |
| Mean |  |  |  |  | 4.8 |
| Median |  |  |  |  | 5.0 |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.4 |

The course instructor (Dror Bar-Natan) was approachable.


The course instructor (Dror Bar-Natan) answered questions clearly.

| 5 A Great Deal (9) |  |  |  | 90\% |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $10 \%$ |  |  |  |  |
| 4 Mostly (1) |  |  |  |  |  |
| 3 Moderately (0) | 0\% |  |  |  |  |
| 2 Somewhat (0) | 0\% |  |  |  |  |
| 1 Not At All (0) | 0\% |  |  |  |  |
| 0 |  |  | 50\% | 100\% |  |
| Statistics |  |  |  | Value |  |
| Mean |  |  |  | 4.9 |  |
| Median |  |  |  | 5.0 |  |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.3 |

Overall, the quality of instruction provided by (Dror Bar-Natan) in this course was:

| 5 Excellent (8) |  |  |  | 80\% | 100\% |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 4 Very Good (2) |  | 20\% |  |  |  |
| 3 Good (0) | 0\% |  |  |  |  |
| 2 Fair (0) | 0\% |  |  |  |  |
| 1 Poor (0) | 0\% |  |  |  |  |
| [ Total (10) ] |  | 50\% |  |  |  |
| Statistics |  |  |  |  | Value |
| Mean |  |  |  |  | 4.8 |
| Median |  |  |  |  | 5.0 |
| Mode |  |  |  |  | 5 |
| Standard Deviation |  |  |  |  | 0.4 |

## Section 3. Comparative Data

This section provides overall means for given comparators (e.g., division, department) alongside the mean values for a given course. Note that the comparators are calculated by pooling together all individual student survey responses (e.g., student responses for all of the courses in a department are pooled together and the departmental mean responses calculated from that). The provided comparators are thus a measure of the 'average' student experience for a unit or division; they are not a measure of the 'average' course in a unit or division. This calculation has the effect of giving large courses more 'weight' in the calculation of the comparator means. The effect of this on the calculated comparator varies depending on the relative proportion of large or small courses within a unit or division. As such, the departmental and divisional comparative mean values provided on course evaluations should not be regarded as an absolute and definitive benchmark.

For example, if a department offered only two courses, one with 1000 students who all answered 3.5 and the other with 10 students who all answered 4.5 (so that the means would be 3.5 and 4.5 respectively), then the departmental mean provided on the course evaluations would be 3.51 since the calculation would be $[(3.5 \times 1000)+(4.5 \times 10)] / 1010]=3.51$ and $\operatorname{not}(3.5+4.5) / 2=4$.

Part A. Core Institutional Items
Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal
Institutional Composite Mean


1. I found the course intellectually stimulating.

2. The course provided me with a deeper understanding of the subject matter.

3. The instructor (Dror Bar-Natan) created an atmosphere that was conducive to my learning.

4. Course projects, assignments, tests, and/or exams improved my understanding of the course material.

5. Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.


Scale: 1-Poor 2-Fair 3-Good 4-Very Good 5-Excellent
6. Overall, the quality of my learning experience in this course was:


## Part B. Divisional Items

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal
9. The instructor generated enthusiasm for learning in the course.


Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy
10. Compared to other courses, the workload for this course was:


Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly
11. I would recommend this course to other students.


## Part C: Departmental Items

The course instructor (Dror Bar-Natan) explained concepts clearly.

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal


The course instructor (Dror Bar-Natan) was approachable.

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal


The course instructor (Dror Bar-Natan) answered questions clearly.

Scale: 1-Not At All 2-Somewhat 3-Moderately 4-Mostly 5-A Great Deal


Overall, the quality of instruction provided by (Dror Bar-Natan) in this course was:


