

Section 1 Course Evaluation Executive Summary

| | |
|---|----------------------------|
| Course Name: Algebra I MAT240H1-F-LEC0101 | Instructor: Dror Bar-Natan |
| Course Code: MAT240H1 | Section: LEC0101 |

| | |
|-------------------------|-----------------|
| FAS Fall 2014 UG | |
| Raters | Students |
| Responded | 67 |
| Invited | 112 |

Part A. Core Institutional Items

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| I found the course intellectually stimulating. | 4.4 | 0.8 |
| The course provided me with a deeper understanding of the subject matter. | 4.4 | 1.0 |
| The instructor (Dror Bar-Natan) created an atmosphere that was conducive to my learning. | 4.4 | 0.8 |
| Course projects, assignments, tests, and/or exams improved my understanding of the course material. | 4.1 | 1.0 |
| Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material. | 4.1 | 1.0 |
| Institutional Composite Mean | 4.3 | 0.9 |

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| 6. Overall, the quality of my learning experience in this course was.... | 3.8 | 1.1 |

| | |
|---|---------------|
| 7. Please comment on the overall quality of the instruction in this course. | See Section 2 |
| 8. Please comment on any assistance that was available to support your learning in this course. | See Section 2 |

Part B. Divisional Items

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| The instructor (Dror Bar-Natan) generated enthusiasm for learning in the course. | 4.6 | 0.7 |

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| Compared to other courses, the workload for this course was... | 3.6 | 0.7 |

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| I would recommend this course to other students. | 4.0 | 1.2 |

Part C: Departmental Items

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| The course instructor (Dror Bar-Natan) explained concepts clearly. | 4.4 | 0.7 |

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| The course instructor (Dror Bar-Natan) was approachable. | 4.3 | 0.8 |

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| The course instructor (Dror Bar-Natan) answered questions clearly. | 4.4 | 0.7 |

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

| Question | Summary | |
|--|---------|--------------------|
| | Mean | Standard Deviation |
| UNIT(OQI) Overall, the quality of instruction provided by (Dror Bar-Natan) in this course was: | 4.3 | 0.9 |

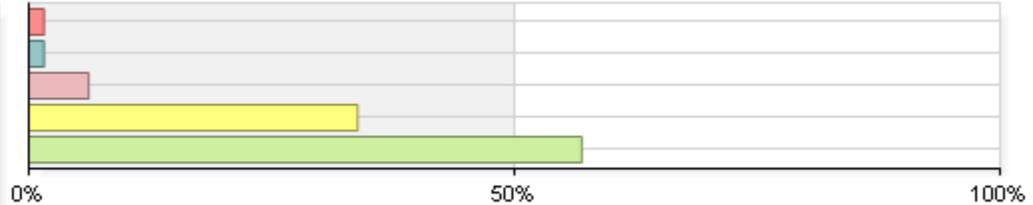
Section 2 Course Evaluation Details and Summaries

Response Distributions and Associated Statistics

Part A. Institutional Items

1. I found the course intellectually stimulating.

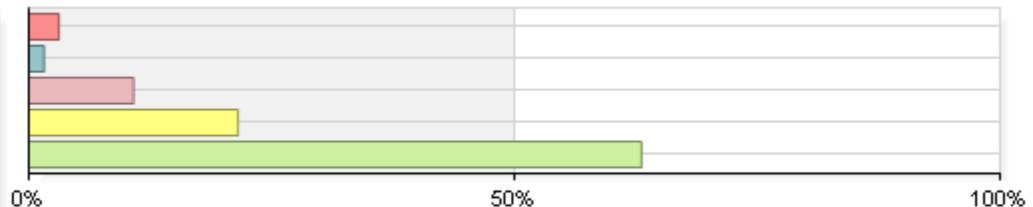
| | | |
|----------------|----|-----|
| 1 Not At All | 1 | 2% |
| 2 Somewhat | 1 | 2% |
| 3 Moderately | 4 | 6% |
| 4 Mostly | 22 | 34% |
| 5 A Great Deal | 37 | 57% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.4 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-0.8 |

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

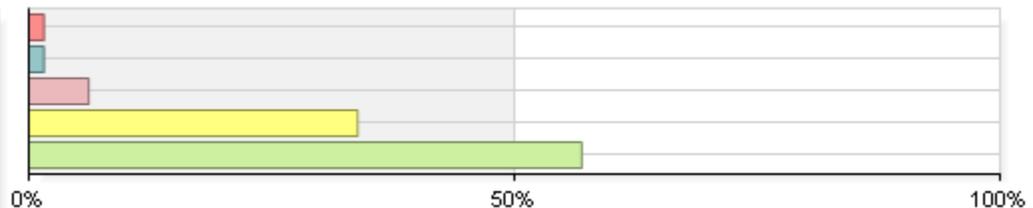
| | | |
|----------------|----|-----|
| 1 Not At All | 2 | 3% |
| 2 Somewhat | 1 | 2% |
| 3 Moderately | 7 | 11% |
| 4 Mostly | 14 | 22% |
| 5 A Great Deal | 41 | 63% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.4 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-1.0 |

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

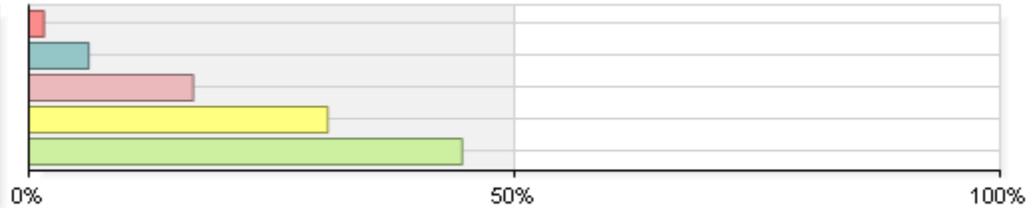
| | | |
|----------------|----|-----|
| 1 Not At All | 1 | 2% |
| 2 Somewhat | 1 | 2% |
| 3 Moderately | 4 | 6% |
| 4 Mostly | 22 | 34% |
| 5 A Great Deal | 37 | 57% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.4 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-0.8 |

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

| | | |
|----------------|-----------|-----|
| 1 Not At All | 1 | 2% |
| 2 Somewhat | 4 | 6% |
| 3 Moderately | 11 | 17% |
| 4 Mostly | 20 | 31% |
| 5 A Great Deal | 29 | 45% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.1 |
| Median | 4.0 |
| Mode | 5 |
| Standard Deviation | +/-1.0 |

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

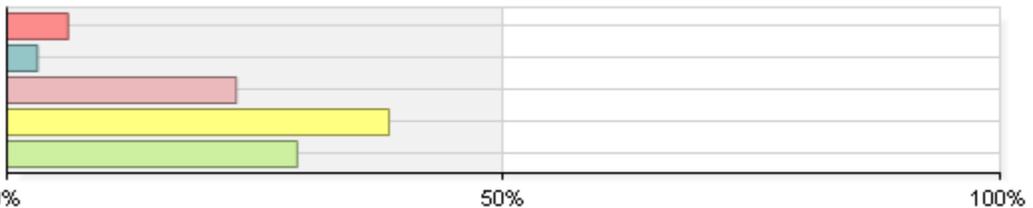
| | | |
|----------------|-----------|-----|
| 1 Not At All | 0 | 0% |
| 2 Somewhat | 5 | 8% |
| 3 Moderately | 12 | 18% |
| 4 Mostly | 19 | 29% |
| 5 A Great Deal | 29 | 45% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.1 |
| Median | 4.0 |
| Mode | 5 |
| Standard Deviation | +/-1.0 |

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

| | | |
|--------------|-----------|-----|
| 1 Poor | 4 | 6% |
| 2 Fair | 2 | 3% |
| 3 Good | 15 | 23% |
| 4 Very Good | 25 | 38% |
| 5 Excellent | 19 | 29% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 3.8 |
| Median | 4.0 |
| Mode | 4 |
| Standard Deviation | +/-1.1 |

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

| Comment |
|--|
| He is a fantastic instructor who made lecture fun and engaging! |
| I really like Dror's enthusiasm in this course. He gives us a lot of "food for thoughts" on linear algebra and overall math. Obviously learned a lot |
| The Professor/teacher's assistants are very intuitive in their explanations for concepts but in practical examples, they fail to have a good explanation as they don't give a clear step by step explanation for examples. |
| This course is very interesting due to what we have experienced in lecture. The professor makes the lecture vivid and efficiency. |
| Dror is a good professor, but I think that sometimes he can write far too much on the board and use excessive mathematical notation. I personally think it is fine, but I have heard at least one classmate complain about having trouble copying down notes while simultaneously listening and absorbing the content meaningfully; and that sometimes the notation is excessive and makes quick comprehension a fair challenge, adding to the already overwhelming task of trying to clearly understand everything (for at least a handful of us.) |
| Prof Bar-Natan's lectures were always funny memorable and enjoyable. At the beginning of each lecture he had a riddle for us which for me served to make me more interested in math as well as enjoy the course more. |
| We covered a lot of material in most lectures which meant that we had to go through everything very fast. Sometimes I found the pace of the lectures too fast to follow. I would have preferred it if we covered fewer examples but instead the pace of the lectures was a little less. Especially for two hour long lectures not understanding something at the beginning of the lecture meant for me not understanding the next 1 hour and 30 minutes of material that followed from it what followed from it. |
| regardless of the quality of instruction 2 hour math lectures are a bad idea - concentrating for that long when the material is quite difficult. I would take away more from two 1 hour lectures than one 2 hour lecture |
| Assignments and midterm are sometimes too easy. I don't feel they provide an adequate preparation for the final. |
| The concepts are clearly explained with good examples and practices in class. The instructor helps me a lot to understand them. |
| Good Professor, very understandable and funny. Let an hard course to be less hard |
| The professor is enthusiastic and funny, which is helpful for staying concentrated during lectures. He provided "riddles", or interesting but approachable problems to solve before classes, and distributed candies during Halloween time. Homework is a lot, but we only had to submit some and the TA marks three or four. We had a huge class which is understandable, but the small denominator on marks of our problem sets makes it easy to slip up a bit and lose a lot of marks in percentage, or conversely, mess up most of the problems but gets marked on only the correctly done ones, which isn't demonstrative of our understanding of the course material. The tutorials are probably not as helpful, mostly because it's supposed to be a class of ten to twenty students but is filled with fifty. This means the TA mainly and only went over homework, which is painful and boring when most students understand the homework but some doesn't. |
| Fast (no review) but thorough |
| Fascinating course, excellent professor who makes the lectures enjoyable. Studying is absolutely mandatory as everything follows the preceding statements and missing or misunderstanding one breaks your complete understanding and can make the course seem well harder than it actually is. |
| The material was clearly explained. |
| The quality of instruction was very good. I enjoyed the occasional well-placed jokes and at the same time I managed to learn a lot from the serious content. The instructor did sometimes need to step back to clear up confusion for himself, but this was not too common and did not seem to affect the quality of teaching. Overall, I greatly enjoyed this course. |
| Very conducive to those with an strong understanding and passion for abstract mathematics. A little hard to follow at times if the lecture material wasn't read ahead of time (although this was usually assigned). |
| The instruction in this course was really well structured. I preferred tutorials more than lectures, probably because of the smaller class size we were able to ask questions and have concepts clarified. The professor created a good learning atmosphere and I enjoyed the riddles that were on the board before class begun. Overall, this class was challenging but rather enjoyable. |
| Very good. |
| Dror was an amazing instructor, I enjoyed learning from him and I also like how he has his own wiki page. He also |

clearly puts effort into teaching and his tests are very fair. One thing I disliked was that some of the notes are not posted onto the wiki. I liked that it was consistently posted in the beginning of the year so I can go over my own notes and see if I made any mistakes with my note taking.

It was VERY good. Prof Natan is a very clear and captivating lecturer.

Excellent

The instructor was very clear and approachable though he occasionally had a tendency to go on tangents. Nevertheless, he was a great instructor for the course.

The professor was very good and enthusiastic, but sometimes he would get lost in his lectures and have to start the section over again.

I know mathematics is about formulating the rule and proving theorem based on the interaction between numbers and functions. For that reason, I find myself hard to grasp a concept until I solve a problem and doing some application of the theorem without necessarily understanding the theorem itself. This type of difficulty in learning mathematics has always emerged whenever I come to advanced calculus and linear algebra lectures. If university courses are made for further learning after high school learning, I always doubt if the courses are really for ordinary students to learn given that their knowledge is up to high school level or if it is just for the top class students who are already a bit familiar with the material in advanced math. I want university to clarify this or improve such a system not just relying on the instructor alone to solve this issue.

Dror was an excellent professor and a charming lecturer. My TA however was extremely lacking in the basic oratorical skills needed for proper instruction. Mr. Boris Lishak needs to improve his comfortability with teaching as the whole tutorial can feel his awkwardness as a teacher.

Professor Bar-Natan is an excellent instructor, informative, thorough and has a great sense of humour to lighten the mood.

Dror Bar-Natan is a great lecturer, and was able to infuse the technical information with generally philosophical/intuitive insights that made the material more palatable and more important, in many ways. The TA whose tutorial I attended was similarly helpful, though I found that his potential for instruction was a bit hampered by the focus on textbook questions that people may or may not have found helpful. Although I think he was a good TA, I was surprised by the lack of actual conceptual content we discussed in the tutorials.

Done well but did not cover all the material that was required for us to cover

Excellent

The professor was clear and moved at a reasonable pace during lectures, did not enjoy the textbook. The material was interesting and engaging.

Clear, Concise, stimulating

I love this course

The course and professor were excellent.

Great

The instructor didn't care, he couldn't be bothered to use legible notation, his notes were unclear and I found he used too many shortcuts and often because of all the steps he skipped he made mistakes. For the second half of the course I had to rely solely on the textbook because the notes were illegible. Also, we couldn't get through the curriculum so by the end of the course he wrote theorems and said we didn't have to learn certain parts of the curriculum because we wouldn't have the time but the theorems he provided us were based on things we were told not to learn... We had to learn one unit in the matter of one week essentially. I still went to the lectures because sometimes I would learn some new notation or way of thinking that the instructor could provide, other than that I just think he couldn't be bothered to care.

Sorry, I don't mean to be rude or anything but this is the truth..

good

Tutorials were next to useless, stopped going.

The instructor was very engaging, and also presented the course material in a clear manner. Homework assignments were challenging but doable. Overall a very worthwhile class. The tutorials were also very well-organized and informative.

I thought Dr. Natan did a great job of balancing many things: doing theory and proofs, doing examples, keeping the lecture interesting...I really enjoyed this class and learned a lot.

Dror was an excellent instructor. Everything that was unclear in the textbook was thoroughly explained in class and I always came away from an hour of lecture with the same feeling of progress I would otherwise get from two hours with the textbook. He made lectures interesting by being invested in the material and demonstrating how one can find value in mathematics, instead of injecting his personal politics and cheap pandering jokes (as many 'rockstar' humanities

professors are apt to do). It is always good to have a course where the lectures themselves are enriching and not just a metric for how far into the textbook you should be.

Fast paced, but intellectually stimulating

Dror is a somewhat lazy but very smart instructor. He rarely includes enough detail in his proofs and especially near the end of the course, you can tell that he doesn't always prepare for his lectures. Nevertheless, he presents seemingly complicated proofs in the textbook in a digestible way. In particular, his statement and proof of the Replacement Theorem is much more logical and easier to follow than the textbook version. Likewise, his proofs of elementary row operations and the properties of determinants are also done in a much less confusing way than in the textbook. Also, his way of multiplying matrices is very cool (in this case, his laziness actually works to his advantage).

Teacher was good, TA's were awful

Professor Dror Bar-Natan was a very good lecturer. He explained concepts very clearly in such a way as to make mathematical abstraction more clear and understandable. More so than just explaining the course material he taught in a way to emphasize mathematical thinking and proper mathematical arguments. The instruction has thus greatly aided the development of my mathematical maturity and my ability to reason mathematically.

Generally awesome, professor made the class interesting, and easy to understand, while still doing things rigorously.

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

Comment

What most helps me in this course is the notes that professor provided on the portal.

I think assistance, at least relative to some of the courses I am taking, is quite sparse. The professor has one hour of office hours a week, and although we could schedule one by appointment, I would hope for more available office hours, as well as something like a study center or a group of tutors available to seek help from. Some of the other classes I am taking have specific venues available to go to help for, but not for this class, and that may be due to the relatively small size of the class compared to many of the large ones, which is a fair reason; however, I think such help is just as important for this class, especially considering the relative difficulty of this course: a smaller class of students does not necessarily imply a smaller group in need of help.

help was readily available when asked for.

Tutorials are very useful to build a better understanding on the concepts mentioned and taught in class. Usually tutorials are like a two-hour office hours. I can still go to the Math Aid Centre or the TA's office hours for more help.

Tutorial sections were helpful when working in groups

The tutorial TA was not very helpful. He tended to mumble, which made it hard to understand what he was saying sometimes.

I did not find the need to seek very much assistance to support my learning in the course; however, the professor had office hours and the TA (Nikita Nikolaev) was helpful. The TA seemed to make a special effort in tutorials and tried to find the best way to carry them out rather than simply doing "just enough". Furthermore, he was willing to answer questions after tutorials about material related to class even if it wasn't specifically material that was covered in class.

Tutorials were a great source of help to get things clarified. Office hours were also available, although I did not attend them once throughout the semester because I didn't feel the need to do so. After having concepts explained at lectures, tutorials, and the textbook readings, I understood the material without the need for extra office hours.

The wiki page was a good resource

I didn't really ask for help, but I felt like the tutorials clarified a lot of my doubts and the professor replies to emails much faster than most professors.

The TA's were both very helpful and friendly.

It would have been better if the TA of the Odd Section opted out from acting as a professor and focusing simply on just doing his job: Solving problems and going over the solutions in detail, which contributes to the overall understanding of the course. I am not saying that he did not go over the material because he did, I am just pointing out that it would have been a lot better, more efficient, and less time consuming if he opted out from giving speeches or asking students to work in small groups to solve 5 problems in a 2-hours tutorial, where he ended up going quickly over the solutions in the last 15 minutes and wasted 1 hour and 45 minutes on group work in class!

Tutorials and instructors (as well as TA) office hours were very helpful.

He was always there for his office hours and was quick to respond to his emails.

The assistance available for individual questions in this course was average, being mostly the purpose of office hours

and such. I didn't get the feeling that there was any great effort taken to make help widely available.

Tutorials and professor office hours

i cannot see clearly what my TA writes on the blackboard almost all the time, even though i sat in the second row of the classroom. I don't think he knows how to use chalks correctly.

The T.A. (Nikita Nikoleav) was good. He was clear and tedious, he would leave notes on how i could improve my solutions from the problem sets.

The teacher assistant is very good.

Didn't require any, but if I did the tutorials wouldn't have done much.

I thought our TA Nikita was good too. Specifically he was knowledgeable and was very good at thoroughly writing proofs on the board; that taught me how I should write my proofs on the assignments.

The textbook choice for this course was misguided. Friedberg et. al is a great textbook for a second course in linear algebra, but it is also specifically designed for a second course. There is no motivation for anything the whole way through. The finals for 2011, 2013 and other years where the course was taught from Linear Algebra Done Right seemed to cover more content, and that book is really designed for a theoretical first course, which this class is. Ultimately, this course covered the same content as LADR but the motivation for this content was absent throughout the entire second half of the course, and the requisite rigor for homework problems went down significantly. I will definitely go back to Friedberg in the future, but I don't think it is the right textbook for this course. I will probably work through LADR to prepare for MAT247 next semester because I feel like F. I. S. left me at least somewhat unprepared for it.

Professor's hours were during tutorial for another math course (that is a co-requisite for this course), making it difficult to meet

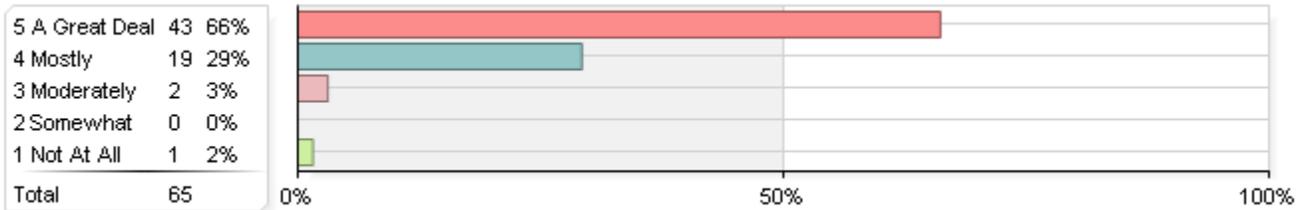
Tutorials allowed answered questions, but the nature of the material requires mostly self study for full understanding. Not something that can be made clear in a few questions.

Dror and the TAs were quite helpful but this is very much a course where you have to depend on yourself. Sometimes, the TAs would explain something and I end up understanding none of it so I have to think very hard before getting somewhere.

I found office hours to be helpful however the tutorials were not particularly useful. I did not find I took much from my tutorials, and they did not present any novel ways to further explain the material.

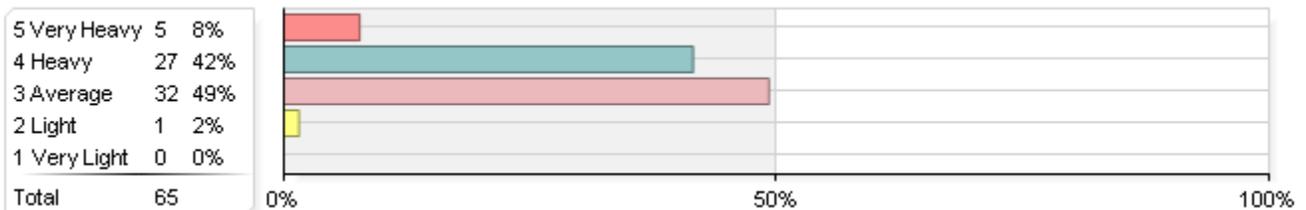
Part B. Divisional Items

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



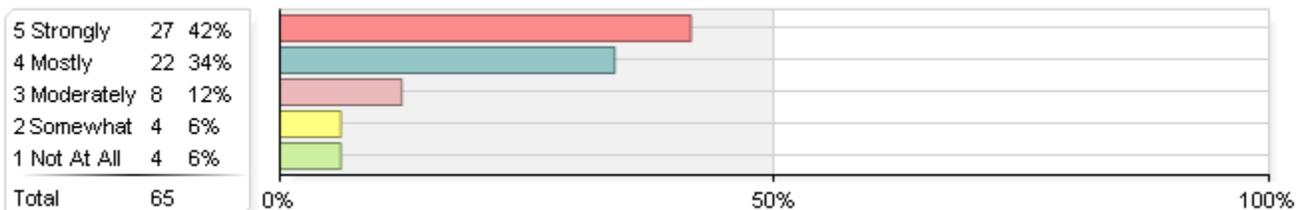
| Statistics | Value |
|--------------------|--------|
| Mean | 4.6 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-0.7 |

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



| Statistics | Value |
|--------------------|--------|
| Mean | 3.6 |
| Median | 3.0 |
| Mode | 3 |
| Standard Deviation | +/-0.7 |

I would recommend this course to other students.

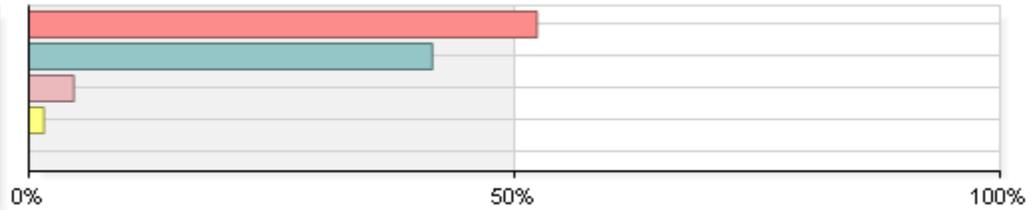


| Statistics | Value |
|--------------------|--------|
| Mean | 4.0 |
| Median | 4.0 |
| Mode | 5 |
| Standard Deviation | +/-1.2 |

Part C. Departmental Items

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

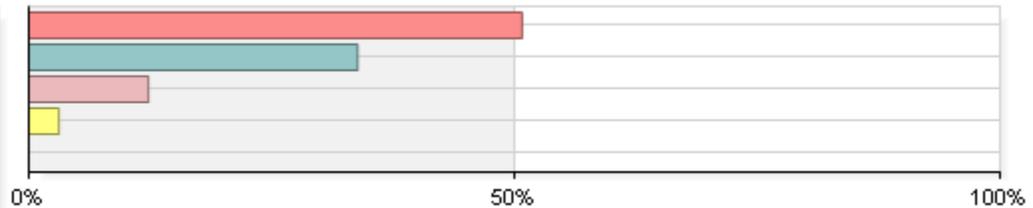
| | | |
|----------------|-----------|-----|
| 5 A Great Deal | 34 | 52% |
| 4 Mostly | 27 | 42% |
| 3 Moderately | 3 | 5% |
| 2 Somewhat | 1 | 2% |
| 1 Not At All | 0 | 0% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.4 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-0.7 |

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

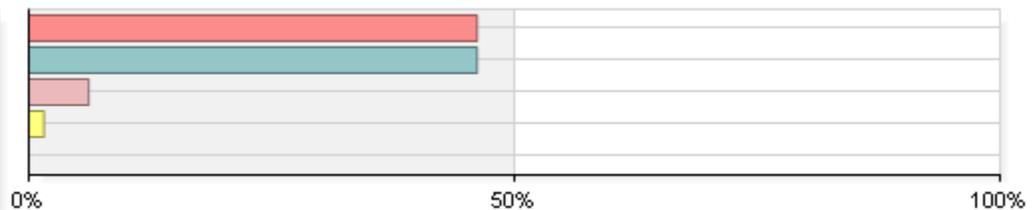
| | | |
|----------------|-----------|-----|
| 5 A Great Deal | 33 | 51% |
| 4 Mostly | 22 | 34% |
| 3 Moderately | 8 | 12% |
| 2 Somewhat | 2 | 3% |
| 1 Not At All | 0 | 0% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.3 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-0.8 |

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

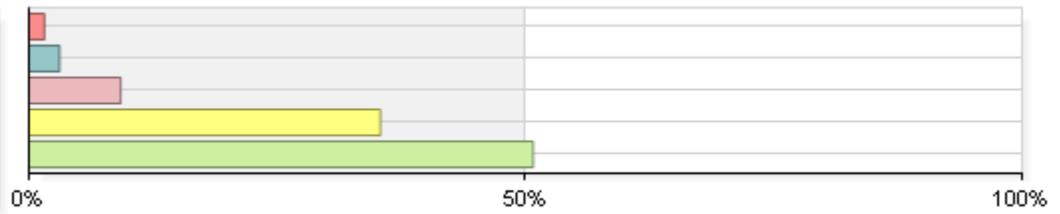
| | | |
|----------------|-----------|-----|
| 5 A Great Deal | 30 | 46% |
| 4 Mostly | 30 | 46% |
| 3 Moderately | 4 | 6% |
| 2 Somewhat | 1 | 2% |
| 1 Not At All | 0 | 0% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Mean | 4.4 |
| Median | 4.0 |
| Mode | 5, 4 |
| Standard Deviation | +/-0.7 |

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

| | | |
|-------------|----|-----|
| 1 Poor | 1 | 2% |
| 2 Fair | 2 | 3% |
| 3 Good | 6 | 9% |
| 4 Very Good | 23 | 35% |
| 5 Excellent | 33 | 51% |
| Total | 65 | |



| Statistics | Value |
|--------------------|--------|
| Response Count | 65 |
| Mean | 4.3 |
| Median | 5.0 |
| Mode | 5 |
| Standard Deviation | +/-0.9 |

Section 3. Comparative Data

Part A. Core Institutional Items

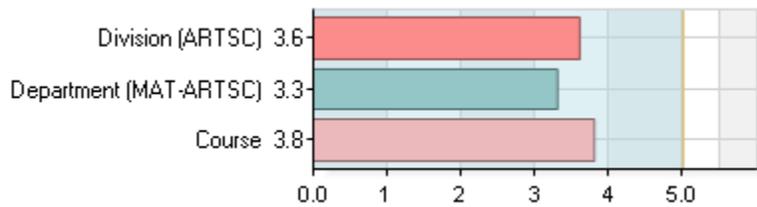
Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal



Section 3. Comparative Data (continued)

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

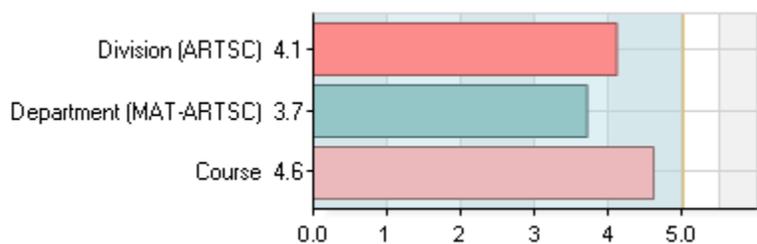
6. Overall, the quality of my learning experience in this course was:



Part B. Divisional Items

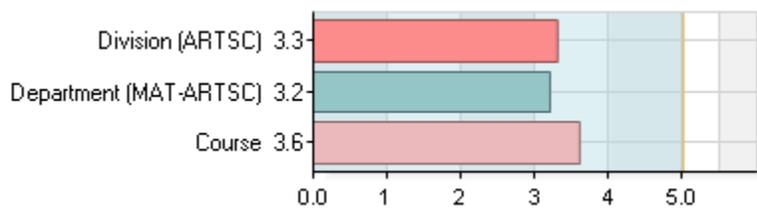
Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

9. The instructor generated enthusiasm for learning in the course.



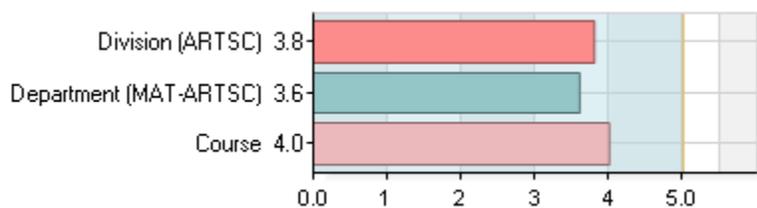
Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy

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



Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly

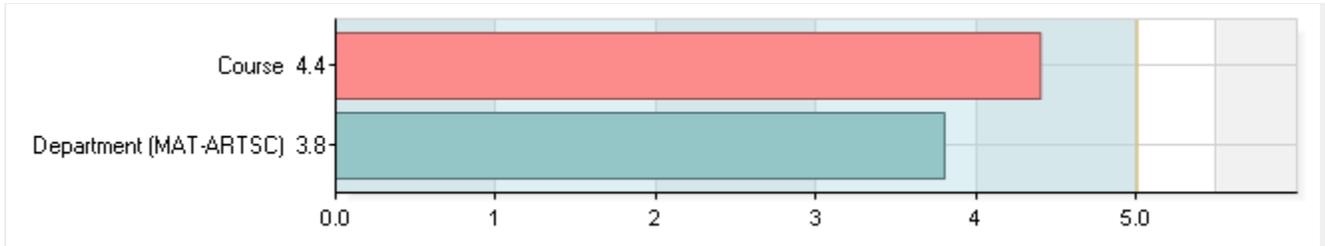
11. I would recommend this course to other students.



Part C: Departmental Items

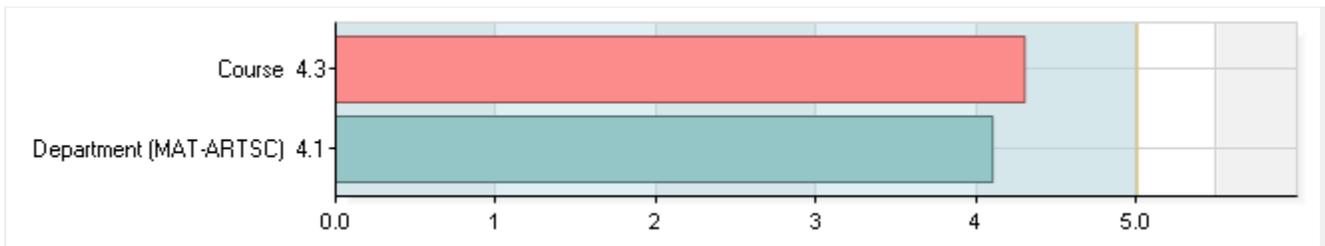
The course instructor (**Dror Bar-Natan**) explained concepts clearly.

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



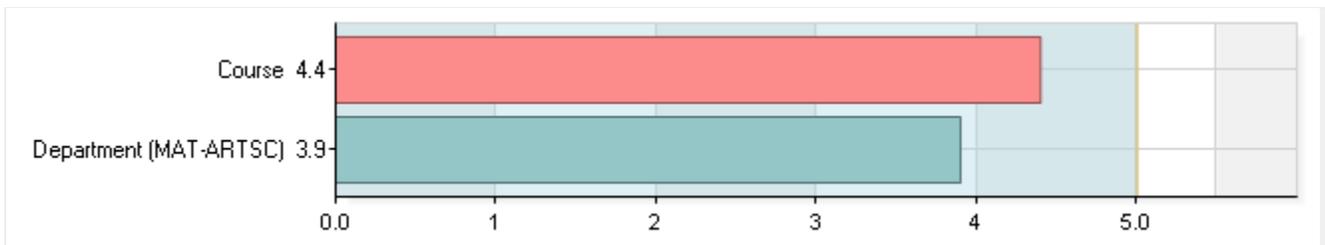
The course instructor (**Dror Bar-Natan**) was approachable.

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



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

