Math 4901: Senior Seminar Assessment 2003–2004

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Students presented senior seminars in either fall 2003 or spring 2004. The faculty met to discuss the senior seminar process and assign grades to the students. A student's grade is ultimately assigned by the faculty advisor for the student, and this meeting helped ensure consistency in the grading from one faculty member to the next.

Grading Scheme:

30%	Active participation throughout the process
10%	Project Proposal with mathematical foundation and research plans
30%	Final written paper
30%	40-min presentation

Minutes from Faculty Discussion on December 11, 2003

The participation of the students was deemed very good. Some students worked on their projects over the summer, and all met with their faculty advisor regularly.

The proposals submitted by the students were deemed good as a whole.

The presentations were deemed very good as a whole. A few comments were made regarding a couple of the presentations which contained some errors (either in the material presented during the presentation or introduced during questions/answer session following the presentations). For the most part, these errors were minor taken in the context of the significant accomplishments of the students exhibited by the presentations and papers they produced. A couple of the presentations were deemed excellent, with students exhibiting a professional demeanor, excellent mathematical content, or a personal presentation style which was engaging to the audience.

The final paper versions were deemed very good as a whole. It was felt one paper was not as good as it could have been. The student had been given feedback on the paper, but chose not to make the changes which were suggested. The student's advisor felt the student did not expend the necessary effort to make the paper excellent.

The faculty felt the senior seminars in the fall of 2003 were, as a whole, of very good quality.

Minutes from Faculty Discussion on April 28, 2004

The participation of the students was deemed very good as a whole.

The presentations were deemed very good as a whole, with some deemed as excellent. Most students used technology (typically PowerPoint, *Mathematica*, or LaTeX) well during their presentation, and some students incorporated other visual aids or group tasks for the audience to aid comprehension. One presentation suffered from technological glitches which contributed to an overall poor presentation. This was seen as unfortunate, since the student had made the effort to get a laptop from Computing Services specifically to avoid technical difficulties (the laptop would not connect to the video monitor, forcing the student to deal with the very difficulties they had hoped to avoid). This incident served to reinforce the need to check the actual presentation tools that are to be used, and have a backup plan in place in case it is needed.

The final paper versions were deemed very good as a whole.

Many of the students were very independent in their approach to the seminar, and these were generally thought of as students who developed a deeper understanding of the material than others, and led to better written papers and oral presentations. Students who did not do as well in the senior seminar typically did not make use of the resources available to them, did not work independently between meetings with their advisor, and did not incorporate advisor or second reader feedback into the final paper. However, the great majority of students did very good to excellent on all aspects of the senior seminar.

The faculty made two changes to the senior seminar program. The first is to involve a second reader in the process sooner, when the reader has time to give more substantial feedback and the student has sufficient time to incorporate any changes suggested. The second change was to streamline the instrument used to provide feedback on the oral presentation, and to add questions to encourage the audience to give the student more specific feedback on what worked well in the oral presentation, and what could be improved.

Appendix

This appendix contains the data from the assessment sheet which is distributed to the audience at the senior seminar presentation. The assessment is only on the student's presentation.

The audience members rate the student on a scale of 0 to 5 (0: No opportunity to observe, 1: Unsatisfactory, 2: Below average, 3: Average, 4: Good, 5: Excellent) and are also provided with space to write comments.

Data for Fall 2003

There were six students who completed their senior seminar presentation in Fall 2003.

1. *The student is able to describe and explain a theorem, mathematical formula/model, and a solution of a problem in broad terms to a nonspecialist audience.*

	Student						All
	1	2	3	4	5	6	
# of Evaluations	31	23	28	27	31	34	
Mean	3.7	4.0	4.1	4.6	4.7	4.0	4.2
St. Dev.	0.86	0.76	0.90	0.57	0.53	0.72	

2. *The student is able to design and deliver effective messages through the oral communication channel.*

	Student						All
	1	2	3	4	5	6	
Mean	4.1	3.9	4.3	4.7	4.6	4.2	4.3
St. Dev.	0.56	0.71	0.52	0.47	0.66	0.64	

3. *The student is able to use presentation tools effectively.*

	Student						All
	1	2	3	4	5	6	
Mean	4.4	4.2	4.1	4.7	4.7	4.5	4.4
St. Dev.	0.57	0.73	0.80	0.55	0.53	0.61	

4. *The student shows an enthusiasm towards the area.*

	Student						All
	1	2	3	4	5	6	
Mean	4.0	4.0	4.0	4.6	4.8	4.7	4.4
St. Dev.	0.80	1.00	0.90	0.58	0.40	0.45	

5. *The student shows an evidence of critical and independent thinking.*

	Student						All
	1	2	3	4	5	6	
Mean	4.5	3.9	4.0	4.3	4.6	4.2	4.3
St. Dev.	0.81	0.79	0.90	0.55	0.56	0.78	

6. *The student demonstrates basic knowledge of mathematics.*

	Student						All
	1	2	3	4	5	6	
Mean	4.7	4.3	4.7	4.7	4.7	4.5	4.6
St. Dev.	0.57	0.86	0.61	0.55	0.61	0.70	

7. *The student demonstrates a content knowledge in the area of research.*

	Student						All
	1	2	3	4	5	6	
Mean	4.6	3.9	4.6	4.6	4.8	4.5	4.5
St. Dev.	0.55	0.90	0.50	0.64	0.40	0.53	

Data for Spring 2004

There were eleven students who completed their senior seminar presentation in Fall 2004.

1. *The student is able to describe and explain a theorem, mathematical formula/model, and a solution of a problem in broad terms to a nonspecialist audience.*

	Student						All
	1	2	3	4	5	6	
# of Evaluations	31	23	28	27	31	34	
Mean	3.7	4.0	4.1	4.6	4.7	4.0	4.2
St. Dev.	0.86	0.76	0.90	0.57	0.53	0.72	

2. *The student is able to design and deliver effective messages through the oral communication channel.*

	Student						All
	1	2	3	4	5	6	
Mean	4.1	3.9	4.3	4.7	4.6	4.2	4.3
St. Dev.	0.56	0.71	0.52	0.47	0.66	0.64	

3. *The student is able to use presentation tools effectively.*

	Student						All
	1	2	3	4	5	6	
Mean	4.4	4.2	4.1	4.7	4.7	4.5	4.4
St. Dev.	0.57	0.73	0.80	0.55	0.53	0.61	

4. *The student shows an enthusiasm towards the area.*

	Student						All
	1	2	3	4	5	6	
Mean	4.0	4.0	4.0	4.6	4.8	4.7	4.4
St. Dev.	0.80	1.00	0.90	0.58	0.40	0.45	

5. *The student shows an evidence of critical and independent thinking.*

	Student						All
	1	2	3	4	5	6	
Mean	4.5	3.9	4.0	4.3	4.6	4.2	4.3
St. Dev.	0.81	0.79	0.90	0.55	0.56	0.78	

6. *The student demonstrates basic knowledge of mathematics.*

	Student						All
	1	2	3	4	5	6	
Mean	4.7	4.3	4.7	4.7	4.7	4.5	4.6
St. Dev.	0.57	0.86	0.61	0.55	0.61	0.70	

7. *The student demonstrates a content knowledge in the area of research.*

	Student						All
	1	2	3	4	5	6	
Mean	4.6	3.9	4.6	4.6	4.8	4.5	4.5
St. Dev.	0.55	0.90	0.50	0.64	0.40	0.53	