Math 4901: Senior Seminar Assessment 2004–2005

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1 Introduction

The math senior seminar consists of a paper (typically 10-15 pages) and presentation (40 minutes long) created by the student, under the supervision of a faculty advisor. The student works on the senior seminar for two semesters. Students may approach the senior seminar from a variety of directions—they may build on previous work they have done as a Morris Academic Partner (MAP), through the Undergraduate Research Opportunity Program (UROP), or other research experience; they may reproduce or extend a mathematical concept from a primary paper in the literature; or they may use multiple references to obtain an understanding of a mathematical concept. In all cases, the student should strive for some degree of originality in their project.

The degree of independence in student work varies—some students work closely with their faculty advisor, and others work independently. In all cases students should periodically meet with their faculty advisors to receive feedback as they create their project proposal, paper and presentation.

The student submits a project proposal near the end of the first semester they are enrolled in the senior seminar. There is no standard template for what should go into a project proposal, it is used to ensure the student has made some progress on their paper in the first semester, and has an outline of what still needs to be completed.

Before the presentation, each student’s near final version of their paper is read closely by a second reader from the math faculty, who provides constructive feedback on the paper before it is read by the rest of the math faculty. The entire math faculty meet with the student for a short (15 minute) meeting before the presentation. At this meeting, the faculty give their responses to the paper, and may offer suggestions to the student about the paper or the presentation.

Audience members at the presentation fill out an assessment tool (see Appendix). The results from the audience assessment can help faculty assess the quality of the presentation, but its primary use is to provide the student feedback on the presentation. The presentation should be at a level appropriate to the audience (math majors who may not be familiar with the specifics of the seminar topic). Both the paper and presentation should exhibit a significant mathematical component and be of a high professional quality.

After all the students have finished their presentations, the faculty meet to discuss the senior seminar process and assign grades (A-F) to the students. A student’s grade is ultimately assigned by the faculty advisor for the student, and this meeting helps ensure consistency in the grading from one faculty member to the next.

Students are made aware of the senior seminar time line and expectations of the course through communications and meetings with the senior seminar coordinator, their faculty advisor, and via the course webpage (http://www.morris.umn.edu/academic/math/policies-seniorsem04-05.html).
2 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

The above grading scheme is meant to give an understanding of the relative importance of the various components of the senior seminar. Final grades are typically arrived at in a holistic manner.

3 Minutes from Faculty Discussion on May 2, 2005

Thirteen students presented senior seminars in spring 2005 (no students presented in fall 2004).

The participation of the students was deemed very good. Some students worked very independently, with a limited amount of interaction with their advisors, and others worked more closely with their advisors.

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 few students could have improved their presentations with more practice. A few presentations were deemed excellent, with students exhibiting a professional demeanor, excellent mathematical content, or a presentation which was engaging to the audience.

The final paper versions were deemed very good as a whole. Some of the final papers could have benefited from a more in-depth look at the topic, or making the mathematics used more transparent to the reader. A few papers were deemed excellent, being well written and delving deeply into a mathematical concept.

The faculty felt the senior seminars for 2004/05 were, as a whole, of very good quality. The faculty felt that all students reached an excellent or very good understanding of their topic by the end of the senior seminar experience.

One student who was registered for the senior seminar worked on it in the fall, then decided not to pursue the Math major and stopped work on his project in the spring, without contacting or replying to emails from his senior seminar faculty advisor. The student did not go through university channels to withdraw from the course. This student earned an F in the senior seminar.

A short discussion on changing the grading of the senior seminar to S-N was concluded with faculty deciding to leave the grading as A-F. The faculty feel the senior seminar is working well, the A-F grading motivates students, and the time spent assigning letter grades is time well spent.

The faculty discussed letting students present when they are ready rather than in April or December. This year was atypical in that no students presented in December. The faculty still want students to spend two semesters on the senior seminar, and will encourage students who are prepared to do a senior seminar to register spring-fall, and present in December. This will allow some students to complete their seminar early enough to present results at conferences in the spring. It will also spread out the workload for the faculty over the year.
A Appendix

This appendix contains the numerical summary of the data from the assessment sheets which are distributed to the audience at the senior seminar presentation. The assessment is only on the student’s presentation.

Assessment Data for Spring 2005

There were thirteen students who completed their senior seminar presentation in spring 2005.

1. Presented a clear explanation of a mathematical topic

<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>4.53</td>
<td>4.00</td>
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<td>4.11</td>
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<td>0.70</td>
<td>0.48</td>
<td>0.64</td>
<td>0.86</td>
<td>0.62</td>
<td>0.71</td>
<td>1.1</td>
<td>0.90</td>
<td>0.47</td>
<td>1.1</td>
<td>0.57</td>
<td>0.70</td>
<td>0.86</td>
</tr>
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</table>

2. Spoke clearly, correctly, competently, and confidently

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<tr>
<th>Student</th>
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<td>0.48</td>
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<td>0.80</td>
<td>0.55</td>
<td>0.62</td>
<td>0.95</td>
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3. Used presentation tools effectively

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<td>1.1</td>
<td>0.56</td>
<td>0.50</td>
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</table>

4. Displayed a depth of understanding in the area of research

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<td>0.80</td>
<td>0.62</td>
<td>0.82</td>
</tr>
</tbody>
</table>
Please take a moment to provide an honest and thoughtful assessment of the presentation.

What were the main strengths of the presentation?

What suggestions do you have for improvement?

Further comments: