Mathematics and Statistics Department
Elon University Honors Thesis Guidelines

What the Thesis should look like – The Honors Thesis in Mathematics or Statistics should be similar to but more in-depth than a mathematics or statistics Senior Seminar project. A paper on the order of 20-25 pages should be considered a minimum. It will normally be based on an article from a moderate level mathematics or statistics journal or a mathematical or statistical question. About a third to a half of the paper would be a synopsis of the article or a review of the background on the question, showing a clear understanding of the material, and using outside sources when needed. The rest of the paper would be developed by the student, as opposed to being garnered from other sources. This could take the form of an extension or extensions of results, application of techniques to different situations, answering a similar or related question or questions, or some combination.

How the mentor is selected– The student will approach the mathematics or statistics faculty member as it is currently done for Senior Seminar and Independent Research. The department feels that each faculty member can make a choice of whether he or she would be able to be a capable mentor for the chosen topic at the advanced level of an Honors Thesis.

How the Honors Thesis fits in with Senior Seminar – Honors students majoring in Pure Mathematics are required to take Senior Seminar. Applied Mathematics majors are also encouraged to take Senior Seminar. The peer review and feedback are invaluable and the department feels they need to be maintained. There is no requirement that statistics majors take Senior Seminar.

Timing – As part of the senior assessment the department requires that majors compile a portfolio of work, and students in some concentrations within the major may have to include a relatively final draft of the research paper/thesis as a required portfolio product. The ideal timing suggested for completing the Honors thesis is based on the departmental portfolio submission deadline which is early February for May or Summer graduation. There is no expectation that the thesis would be completed by the end of the fall, and students can continue to revise their thesis in the spring after portfolio submission.

Ideally, students will start in the fall (2 hours) of the junior year, and then complete most of the work in the spring of the junior year (4 hours). Students would then work towards a relatively final draft in the fall of the senior year (2 hours). In general, we foresee this being the optimal format, but students are encouraged to work with their thesis advisors to create their specific plans.

Mathematics Education – An Honors Thesis in Mathematics Education will not count towards a project in the mathematics Senior Seminar because of the significant difference in research focus. A Mathematics Teacher Licensure student may complete a field-based Honors Thesis in Mathematics Education, using a social science model that includes the following sections: Introduction, Rationale, Survey of Literature, Methods, Findings and Conclusions. Such a project might involve an experiment dealing with pedagogy or learning styles or a case study, and it can be an offshoot of a much more limited study conducted in an earlier education class or practicum. A thesis of this type should be approximately 40-50 pages, not including the bibliography. It should use APA documentation and represent sophisticated research methods and writing style.

Treatment of 4998: Up to 4 hours of HNR 4998 may 'count' as an elective or towards the capstone hours towards a major in Mathematics, Applied Mathematics and Statistics with the approval of the department chair who will consider the students' complete 4-year plan of study to determine appropriateness.

Any deviations from the above expectations will be rare and requires approval by the department via the chair and by the research mentor. Successful completion of the above expectations in no way guarantees or overrides the necessary approval of the Honors Fellows program.