



Insights from Two Years of Implementing an Innovative, Experience-Based Statistics Graduation Requirement

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INTRODUCTION & BACKGROUND

We have recently initiated a new process for students to fulfill Elon University's senior comprehensive requirement for statistics majors (B.S. and A.B.). Elon University is a mid-sized, private university located in North Carolina, USA. There are, on average, about 40 declared statistics majors in the Department of Mathematics and Statistics, which is also home to the Data Analytics major. The new senior comprehensive evaluation process for statistics majors was implemented in Fall 2023, and students graduating in 2024 (n = 11) and 2025 (n = 16) have used the new system. A majority of students have opted for the new points option.

PREVIOUS APPROACH

- Seniors compiled a portfolio in their final semester
- Contained resume and cover letter
- Included student projects to support written narratives for six prompts related to computing, communicating statistics, and application of statistics
- Required an exit interview

UPDATED APPROACH

- Students can **choose** between two options:
 - Revised portfolio
 - Statistics experience points
- Both options require a resume and cover letter

Revised Portfolio

- Requires three prompts that are more reflective in nature (along with supporting project work examples)
- Completed in **final semester**

Statistics Experience Points

- Students must earn four points from approved statistics experiences
- Completed **across four years**

MOTIVATION TO UPDATE PROCESS

- The original portfolio was not seen to add value to students' experiences.
- The portfolio was viewed by students as busy work and stressful since completed in the last semester.
- Review and feedback on portfolios (plus subsequent revisions), along with exit interviews, were time-consuming for faculty.

STATISTICS EXPERIENCES POINT SYSTEM

Selected Statistics Experiences with Point Values

Research Presentations	Additional Statistics Experiences	Service*	Creative Outreach*
Internal Departmental Presentation (1 pt)	Participate in a Data Competition (1 pt)	TA for a Statistics Class (1 pt per semester)	Create a Multimedia Project That Explains a Statistical Concept (1 pt)
Local / Campus Presentation (2 pts)	Earn a Professional Certification (1 pt)	Tutor for Statistics (1 pt per semester)	
National Presentation (3 pts)	Complete a Statistics Thesis (2 pts)	Hold a Leadership Role for an Active Statistics club (1 pt)	Submit an Artistic Project to a Competition (1 pt)
	Submit a Manuscript for Publication (2 pts)		

* No more than 3 points can come from this category, with no more than 2 points for one activity.

Sample Pathways for Reaching the Required Four Points

- Honor's thesis (2 pts) + Presentation at campus research forum (2 pts)
- SAS certification (1 pt) + Participate in DataFest (1 pt) + TA for stats class for 2 semesters (2 pts)
- Complete an actuarial exam (1 pt) + Hold a leadership role in stats club (1 pt) + Tutor for statistics for 1 semester (1 pt) + Submit a song to USCOTS A-μ-Sing (1 pt)
- Research presentation at NCUR (3 pts) + Submit a manuscript for publication (2 pts)

New Approach Choice	Number (%) of Students Since Fall 2023	Most Common Experiences Completed
Revised Portfolio	9 (33.3%)	Tutor for statistics
Points (4 points exactly)	9 (33.3%)	Research Presentation at Elon's Spring Undergraduate Research Forum
Points (5-10 points)	6 (22.2%)	Extra capstone (internship or research)
Points (>10 points)	3 (11.1%)	

Tracking Points and Communicating Progress

- Students submit points through the form on the right
- Submissions are checked once per week
- Approved submissions are recorded two ways

Stats Experience Points

Stats Exp	Research Presentations	1	0-4	25 %	DA Scholar Presentation
Stats Exp	Additional Stats Experiences	2	0-4	50 %	Additional Capstone (Internship)
Stats Exp	Service	1	0-3	33 %	STS 1100 TA
Stats Exp	Creative Outreach	-	0-3	-	
Stats Exp	Other	-	0-4	-	
Stats Exp	Resume/Cover Letter	-	-	-	pass
Stats Exp	Course total	4	0-18	25 %	

4

0-18 25 %

Congratulations! You have earned your four points to satisfy the Senior Comprehensive Evaluation. If you have not completed the cover letter and resume process, make sure you do that as well. Please continue to submit any additional experiences for our records and for possible future priority recognition.

A student-facing gradebook in our LMS students can use to check progress

A faculty-facing spreadsheet for advisors and overall program tracking

5. Category of Experience (If you are unsure, review the document linked at the top of this form or discuss it with your advisor) * [X]

☐ Research Presentation (e.g. SURF, NCUR, etc.)

☐ Service (e.g. tutoring, serving as a TA, etc.)

☐ Creative Outreach (e.g. project competition submission, statistics article, etc.)

☐ Additional Statistics Experience (e.g. data competition, professional certification, etc.)

☐ Other Experience (Note: This should be discussed with your advisor before submission)

6. What is the activity? * [X]

Enter your answer

7. Date(s) of the activity (Note: If something was completed over a semester, you can list the semester instead of the exact dates) * [X]

Enter your answer

8. Provide an explanation of this activity. Please include details about what you did, how it connects to statistics, and the name of a staff or faculty member who can verify your participation. * [X]

Enter your answer

Complete	Last	First	Advisor	Year	Grad Sem	Stats Present	Stats Exp	Service	Creative	Other	Total Points	Portfolio	Resume	Cover	Presentation Notes	Stat Exp Notes	Service Notes	Creative Notes	Other Notes
YES	Alison	Allen	Advisor A	Senior	2025 1-Spring	2	1	1	0	0	4	YES	YES	YES	SURF (23)	DataFest (24)	TA 1100 (\$24)		
YES	Burke	Betsy	Advisor B	Senior	2025 1-Spring	0	1	0	0	0	1	YES	YES	YES		SAS Cert (25)			
NO	Carter	Candace	Advisor C	Senior	2026 1-Spring	3	0	0	0	0	3	NO	YES	YES	NCUR (25)				SURF planned for 4th point
NO	Dawkins	Dylan	Advisor D	Senior	2026 1-Spring	0	0	0	0	0	0	NO	NO	NO					
NO	Eberhardt	Eve	Advisor E	Senior	2027 1-Spring	0	0	1	0	0	1	NO	NO	NO			Tutor (\$25)		

STUDENT PERSPECTIVES**

Student considerations regarding the **portfolio**:

- "I'd been saving all of my work from my previous classes, but it would have been a fair amount of work to pull everything back up, I believe, and that was something that I think I could still do to this day, but ... **it's a task that I kind of dreaded doing.**"
- "The portfolio **doesn't add much to my resume.**"
- "I had friends who hadn't enjoyed the portfolio. They felt it **added stress and was a bit intimidating.**"

What student liked most about the **points system**:

- "Everything I did for the points packs a pretty good punch on my resume...This really **incentivizes students to have workable skills** which I think is the biggest bonus of being a stats major."
- "Everything that I wanted to get involved in already, earned me the requirements for the points to graduate for the senior comprehensive evaluation. So, **it aligned well with my personal goals.**"
- "The list [of approved experiences] has **everything you could ever want to do.**"
- "**A little bit of gamification is ok.** Doing something for the credit afterwards can teach you something along the way. ... **It made being a stats major more enjoyable.**"

** Obtained via IRB-approved student interviews

NEXT STEPS AND SUPPORTING DOCUMENTS

- Continue to update and expand the list of approved statistical experiences
- Explore approaches to making completion tracking methods more robust and efficient

- Document describing our approach:
<https://tinyurl.com/ElonPoints25>

