

Master of Science Applied Data Science

New Program Proposal



EAST TENNESSEE STATE
UNIVERSITY

Data Science

- Is “as much art as science” (Kolakowski, N. 2/13/20)
- Demands a mix of skills and experience
- Requires graduate level education
- Collects data, organizes & analyzes data, and helps industries use data for growth and decision-making
- Relies on interdisciplinary knowledge



Employment for Data Scientists

- 7% growth in job postings between 2018-2019 (Kolakowski, N. 2/13/20)
- 11.5 million Data Science jobs predicted by 2026 (U.S. Bureau of Labor Statistics)
- Average time to fill data science positions
 - Nationally 46 days
 - Regionally 365+ days (Joyner, J., Chick-Fil-A)
- \$95,000-\$102,000 average salary



Industries that Utilize Data Scientists

- Retail
- Medicine
- Communication, media, entertainment
- Transportation
- Construction
- Education
- Manufacturing
- National Resource Management
- Government
- Energy & Utilities



Program Highlights

- Interdisciplinary
 - math, statistics, computer science form core
 - electives drawn from other disciplines including geosciences, public health, economics, psychology, anthropology, sports science, etc.
 - uses courses in current inventory
- 36-39 hours with thesis & non-thesis options



Appeal to Working Students

- On ground and online options
- Full-time or part-time



MS Applied Data Science

Distinctive Features

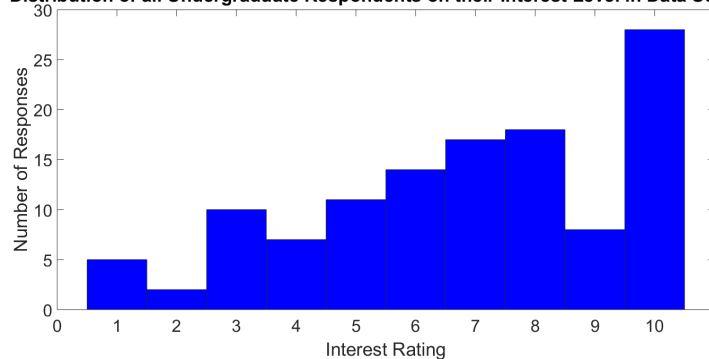
- **Domain-specific courses** (that is, specialized computer languages leveraged for different purposes)
- **Industrial-based projects with industry partners** (aka “internship”)
- Deliberate balance of theory and application



Key Results of Feasibility Study

85 ETSU
undergraduates
expressed strong
interest in the program.

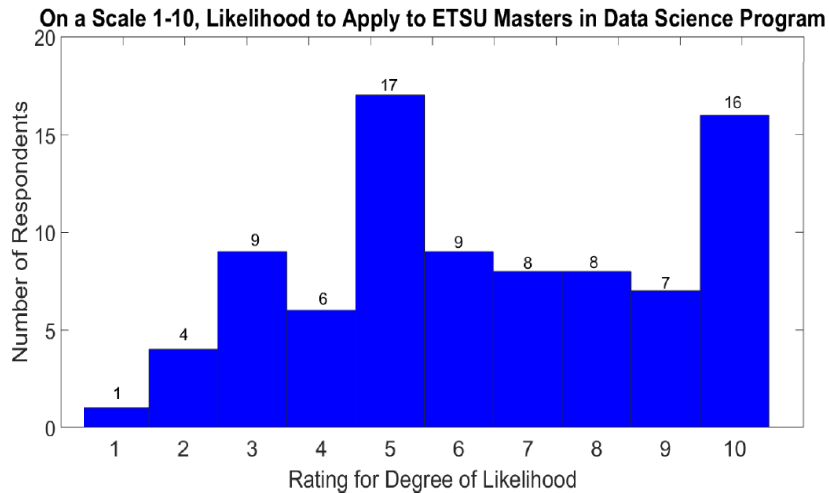
Distribution of all Undergraduate Respondents on their Interest Level in Data Science



N=121 ETSU undergraduates in relevant majors



Key Results of Feasibility Study

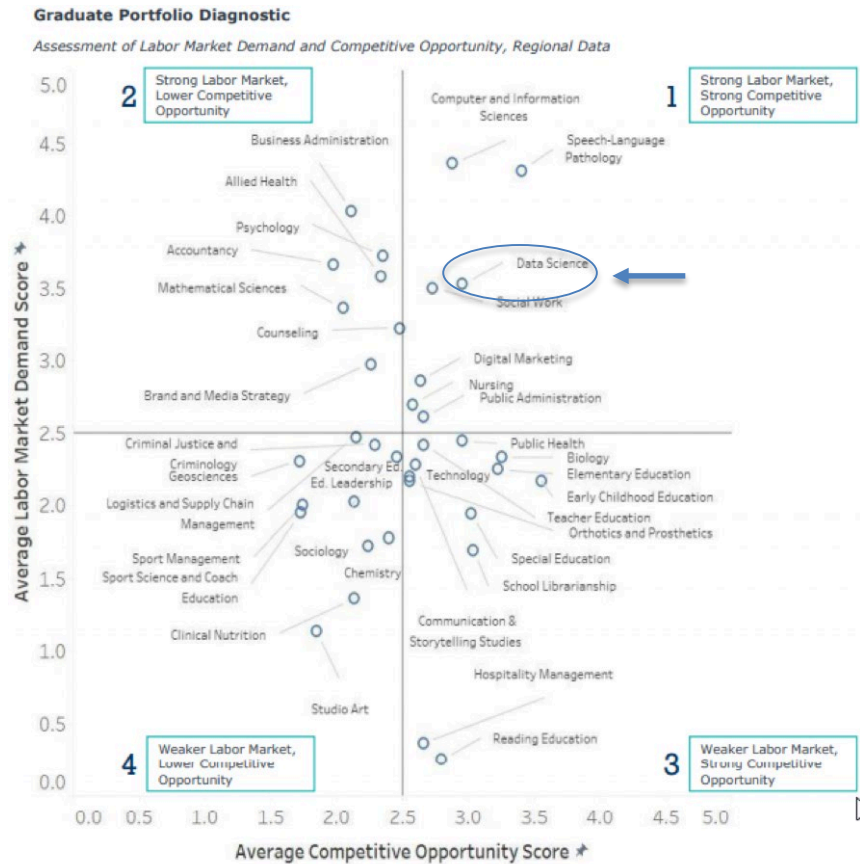


48/85 current UG students would likely to apply

N=85 UG who expressed interest



Key Findings EAB



Enrollment and Revenue Projections

Academic Year	2021-2022	2022-2023	2023-2024	2023-2024	2024-2025
Projected number of new students	12	16	20	24	24
Projected cumulative number of students	12	28	36	44	48
Projected Number of Graduates*	0	9	12	16	19

Academic Year	2021-2022	2022-2023	2023-2024	2023-2024	2024-2025
Tuition	\$138,228	\$316,772	\$407,004	\$497,236	\$541,392
Expenditures	\$153,557	\$215,314	\$222,033	\$220,834	\$223,719
NET	(\$15,329)	\$101,458	\$184,971	\$276,402	\$317,673

All students are tuition paying except 6 graduate assistants (total by year 2).

*Graduation rate assumes full-time students will complete in 2 years; 25% of students will be part-time and will take 4 years to graduate. We assume an attrition of 2 students each year.

Expenditures include 1 new tenure-track position in Department of Mathematics and Statistics, Program Director stipend, operating expenses, travel, 6 Graduate Assistantships.



Supports State's and ETSU's Goals

Tennessee Master Plan

- increase enrollment in high-needs fields
- increase computer science/data analytics offerings
- execute partnerships between higher education and industry

ETSU

- improve the quality of life in our region and beyond
- strategic enrollment growth

