Graduate Student Handbook
Statistics & Data Science
Auburn University

Updated: January 6, 2026

1. Introduction

This handbook is for graduate students enrolled in the Department of Mathematics and Statistics at Auburn University in one of the following programs:

- Ph.D. in Statistics and Data Science
- M.S. in Statistics (non-thesis)
- M.S. in Data Science and Engineering – Data Science track (non-thesis)

The department provides a vibrant academic environment with weekly seminars and colloquia, encouraging students to actively engage in scholarly activities. High-achieving students are recognized through awards and fellowships, and travel funding for conferences is available through the department, COSAM, and the Graduate School.

This handbook supplements the Auburn University Graduate School policies. Students are responsible for adhering to Graduate School and program-specific requirements. In case of conflict, Graduate School policies take precedence.

Resources:

- Graduate School Handbook: `https://graduate.auburn.edu/current-students/`
- Graduation Checklist: `http://graduate.auburn.edu/current-students/graduation/`
- Department Website: `https://www.auburn.edu/cosam/departments/math/students/grad/math-programs.htm`

2. About the Department

The Department of Mathematics and Statistics at Auburn University is home to a vibrant and diverse academic community committed to excellence in teaching, research, and service. The department offers graduate and undergraduate programs across a wide spectrum of mathematical and statistical disciplines, supporting interdisciplinary research and workforce development.

Statistics and Data Science at Auburn

The Statistics and Data Science group within the department focuses on a range of theoretical and applied research areas. Faculty members engage in projects spanning environmental statistics, functional data analysis, statistical learning, computational statistics, biostatistics, and data science applications in agriculture, engineering, health, and the social sciences.

Research areas include but are not limited to:

- Multivariate analysis and robust statistics
- Functional and high-dimensional data analysis
- Machine learning and statistical computing
- Time series and spatial statistics
- Bayesian methods and inference
- Experimental design and causal inference
- Applications in health, agriculture, and climate science

Graduate students benefit from mentorship, interdisciplinary collaborations, and opportunities to participate in seminars, colloquia, and joint research projects. The department plays a central role in initiatives such as the Center for Data Science and Innovation (CDSI), promoting data literacy and community engagement.

3. Program Overview

This section provides a summary of the degree programs offered by the Department of Mathematics and Statistics at Auburn University that fall under Statistics and Data Science. Each program is designed to equip students with rigorous training in statistical theory,

methods, and modern computational techniques. Students are encouraged to engage in interdisciplinary projects and professional development opportunities throughout their graduate studies.

3.1. Ph.D. in Statistics and Data Science

Minimum 60 credit hours beyond the bachelor's degree:

- 30 hours of graded coursework
- 10 hours of STAT 8990 (Dissertation)
- 20 hours of additional coursework or research

Additional requirements:

- Preliminary exams (written) and a general oral exam
- Original research and dissertation defense

Full details: `https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/statisticsdatasci_major/`

3.2. M.S. in Statistics (non-thesis)

- 27 hours of graded coursework
- 3 hours of STAT 7980 (Project)
- Oral comprehensive exam required

Full details: `https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/mathematicsandstatisticsmsmammpsphd_major/matematicsdiscretestatisticalsciencesNONthesisms/`

3.3. M.S. in Data Science and Engineering – Data Science Track

- 30 hours of graded coursework in statistics, CS, and engineering
- Capstone project (STAT 7940)
- No oral exam required

Full details: `https://bulletin.auburn.edu/.../datascienceandengineering_major/`

4. Academic Requirements

This section outlines common academic milestones, expectations, and policies that apply across the programs, including committee formation, plan of study, and key examinations.

4.1. Plan of Study and Committee Formation

All students must file a Plan of Study (CTEC form) before the semester prior to graduation. Ph.D. students need 4 committee members; MS students need 3 of which one is the major advisor.
More info: `http://graduate.auburn.edu/current-students/graduation/`

4.2. Exams and Milestones

Ph.D. students:

- Two written prelim exams
- General oral exam
- Dissertation defense

Preliminary Examinations Ph.D. students in Statistics and Data Science are required to pass two written preliminary examinations:

- **Part I – Theory:** Based on content from **STAT 7600/7610 (Statistical Theory and Methods I & II)**. This portion evaluates students' understanding of the theoretical foundation of statistical inference.
- **Part II – Methods:** Based on content from **STAT 7020 (Regression Analysis)**, **STAT 7840 (Applied Multivariate Statistical Analysis)**, and **STAT 7650 (Computational Statistics)**. This portion emphasizes methodological application, computational skills, and interpretation.

Students may attempt both parts of the preliminary exam at the end of their first year if adequately prepared. Passing both parts is required for advancement to the General Oral Exam (Candidacy). Exams are typically offered in May or August.

Prelim Policy: Ph.D. students **must** complete both parts of the preliminary examination by the end of their fifth regular semester in the program to maintain satisfactory academic

progress.

Ph.D. in Statistics and Data Science Course Requirements

Core I – Required Courses (15 credits)

Course Code	Course Title
STAT 7600	Statistical Theory and Methods I
STAT 7610	Statistical Theory and Methods II
STAT 7020	Regression Analysis
STAT 7840	Applied Multivariate Statistical Analysis
STAT 7650	Computational Statistics

Core II – Electives (18 credits)

Select 12 credits from the following:

STAT 7860	Applied Time Series Analysis
STAT 7700	Generalized Linear Models
STAT 7030	Categorical Data Analysis
STAT 7850	Theory of Statistical Inference
STAT 7800	Linear Models
STAT 7820	Applied Stochastic Processes I
STAT 7830	Applied Stochastic Processes II
STAT 7630	Bayesian Statistics

Select 6 credits from the following:

MATH 7800	Probability I
MATH 7810	Probability II
MATH 7820	Applied Stochastic Processes I
MATH 7200	Real Analysis I
MATH 7210	Real Analysis II

Additional Requirements

STAT 7930	Statistical Consulting Practicum (3 credits)
STAT 7950	Statistics Seminar (2 credits)
STAT 8990	Research and Dissertation (10 credits)
Electives	Advisor-approved electives (12 credits)*

* Advisor-approved electives are required. Approval must be obtained in writing (e.g., via email) prior to registration.

Total Credit Hours Required: 60

MS in Statistics:

- Oral comprehensive exam

MS in Data Science and Engineering:

- No oral exam required

5. Project, Capstone, and Dissertation Requirements

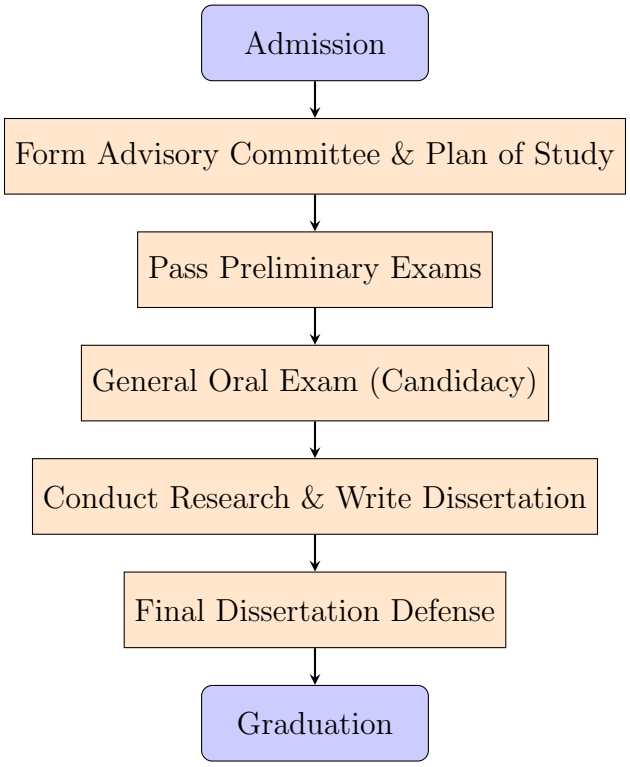
Graduate students are expected to complete a culminating academic project appropriate to their degree level:

- **Ph.D. students** conduct original research, culminating in a written dissertation that must be defended in a public oral presentation.
- **MS-STAT students** complete a Master's Project (STAT 7980) under faculty supervision, typically involving analysis of real-world data and an oral presentation.
- **MS-DSE students** complete a capstone project, often in partnership with industry, that demonstrates their ability to apply data science methods in practice.

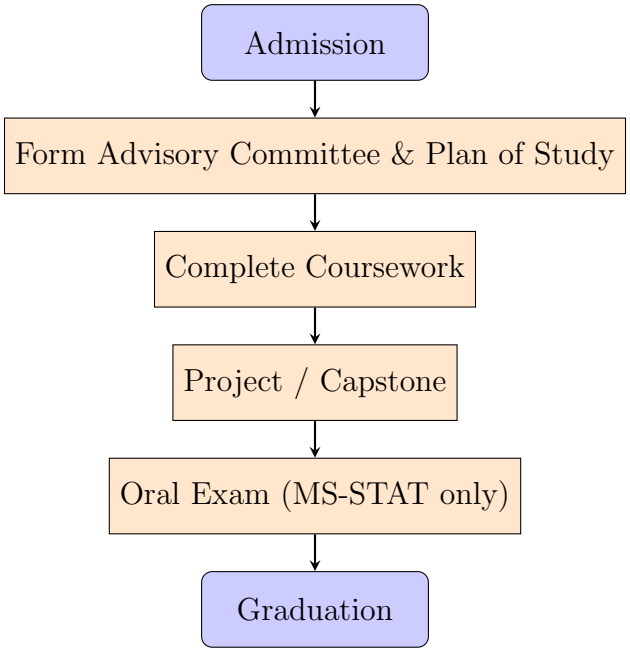
Details and expectations are set in coordination with the student's advisor and committee.

- Ph.D.: STAT 8990 dissertation and oral defense
- MS-STAT: STAT 7980 project
- MS-DSE: STAT 7940 capstone

Ph.D. in Statistics and Data Science – Process Flow



M.S. in Statistics / Data Science and Engineering – Process Flow



5.1. Transition from MS to Ph.D.

Apply with:

- Support letters from two faculty
- Curriculum change form submission:
  - Domestic: `https://gradforms.auburn.edu/CurriculumChangeDomestic.aspx`
  - International: `https://gradforms.auburn.edu/CurriculumChangeIntl.aspx`

5.2. Time Limits

- MS: Complete within 2 years
- Ph.D.: Candidacy within 6 years, all work within 10 years (AU Graduate School limit).

Suggested Timelines for Graduate Programs

Ph.D. in Statistics and Data Science (4–5 years)

Year	Milestone/Activity
Year 1	Begin coursework (core and electives); attend seminars; identify research interests
Year 2	Continue coursework; prepare for and pass preliminary exams; update Plan of Study; explore dissertation topics, form advisory committee; submit initial Plan of Study (CTEC form)
Year 3	Complete coursework; pass General Oral Exam (enter candidacy); begin dissertation research
Year 4	Conduct research and draft dissertation; present at conferences
Year 5	Finalize dissertation; submit to Graduate School; defend dissertation; graduate

M.S. in Statistics (non-thesis) – 2 Years

Semester	Milestone/Activity
Fall Year 1	Begin core coursework; attend seminars
Spring Year 1	Continue coursework;
Fall Year 2	Continue coursework, Identify advisor; file Plan of Study (CTEC),
Spring Year 2	Start STAT 7980 project; finalize project; complete oral comprehensive exam, graduate

M.S. in Data Science and Engineering – Data Science Track

Semester	Milestone/Activity
Fall Year 1	Start coursework
Spring Year 1	Continue coursework; choose electives
Summer/Fall Year 2	Form advisory committee; submit Plan of Study, identify capstone project; complete STAT 7940 capstone project; graduate

6. Graduate Assistantships (GTA/GRA)

- Competitive support for Ph.D. students
- Tuition waivers: 75 hours (Ph.D.), 38 hours (MS)
- Performance-based reappointment; limited summer support

6.1. GTA Funding Time Limit

Graduate Teaching Assistantship (GTA) funding for Ph.D. students is limited to **five years**. A **sixth year of support** may be considered in exceptional cases. To request an extension, the following steps must be followed:

1. Contact your advisor to discuss the need for additional funding.
2. Submit the request in a timely manner, ideally before the end of the fifth year.
3. The advisor must provide a written justification for the extension request.

4. The justification should be sent to the Graduate Program Officer and the Department Chair.

All extension requests will be reviewed on a case-by-case basis and are subject to departmental funding availability and the student's satisfactory academic progress.

6.2. Graduate Teaching Assistant (GTA) Course Requirements

The table below outlines the required seminar and training courses for GTAs during their first two years in the program:

Year	Semester	Required Courses
Year 1	Seminar 1 (Fall)	MATH 7950 001 – Graduate Student Seminar
	Seminar 2 (Spring)	MATH 7950 002 – GTA Training Seminar
Year 2	Seminar 1 (Fall)	STAT 7950 001 – Statistics Seminar
	Seminar 2 (Spring)	STAT 7950 002 – Statistics Seminar

Graduate Teaching Assistant (GTA) Course Requirements

7. Research and Conference Travel Support

Graduate students are encouraged to present their research at academic conferences and professional meetings. Several sources of travel support are available:

- **External Sources:** Students are encouraged to seek travel funding from external professional societies and organizations such as the American Statistical Association (ASA), NSF-funded workshops, and research collaborations.
- **Graduate School Travel Grants:** Competitive funding opportunities are available through the Graduate Student Council.
- **COSAM Travel Support:** The College of Sciences and Mathematics (COSAM) offers limited travel support for graduate students. `https://www.auburn.edu/cosam/departments/research/travel/students/`
- **Departmental Matching:** If a student secures funding from external sources (e.g., Graduate School or COSAM), the department will typically match that amount, subject to available funds.
- **Advisor Support:** Faculty advisors may also support student travel using grant or research funds. Students should consult with their advisor regarding available resources.

Students seeking support must apply well in advance and provide documentation of acceptance to present, estimated expenses, and secured funding from other sources. Matching requests should be submitted to the Graduate Program Officer.

8. Academic Standing and Probation Policies

- If GPA < 3.0: on probation.
- Two probations: no more assistantships
- On probation: reduced duties and no summer/travel/GRA/GTA funding

9. Communication Expectations

Clear and timely communication is essential for academic success. Auburn University email is the official channel for all correspondence. Students must check their email regularly for updates regarding coursework, department announcements, assistantship duties, and Graduate School deadlines.

Additionally:

- GTAs should check their campus mailbox weekly.
- Students are encouraged to regularly meet with their faculty advisors.
- Any questions about program requirements should be directed to the Graduate Program Officer.

Students must check their Auburn email regularly. Faculty may also communicate via mailbox or verbal announcements.

10. Key Contacts

- **Graduate Program Officers (GPO) for Statistics & Data Science Graduate Programs:**
  Dr. Jingyi (Ginny) Zheng (jzz0121@auburn.edu) & Dr. Roberto Molinari (robmolinari@auburn.edu)
- **Graduate Program Officer (GPO) Mathematics Graduate Programs:**
  Dr. Yanzhao Cao (yzc0009@auburn.edu)

- **Interim Chair:**
  Dr. Nedret Billor (billone@auburn.edu)
- **Academic Instruction Coordinator:**
  Lora Merchant (joseplm@auburn.edu)
- **Administrative Services Coordinator :**
  Erica Mallard (elm0098@auburn.edu)