

### Program Planner

## Master of Science Plan II – Comprehensive Exam

This checklist is a planning tool. Please consult with your advisor to track academic progress. Students must maintain a minimum 3.0 GPA and enroll in at least 12 units per quarter.

### COURSE REQUIREMENTS – Data Science Track – 48 UNITS

#### CORE COURSES – 32 units

| Course                               | Title                                   | Units   | Term Taken |
|--------------------------------------|---|---------|------------|
| STA 135                              | Multivariate Data Analysis              | 4 units | _____      |
| STA 200A                             | Introduction to Probability             | 4 units | _____      |
| STA 200B                             | Intro to Mathematical Statistics        | 4 units | _____      |
| STA 206                              | Statistical Methods for Research        | 4 units | _____      |
| STA 207                              | Statistical Methods for Research        | 4 units | _____      |
| STA 208                              | Statistical Methods in Machine Learning | 4 units | _____      |
| STA 209                              | Optimization for Big Data Analytics     | 4 units | _____      |
| <b>ONE of the following courses:</b> |   |         |            |
| STA 242                              | Intro to Statistical Programming        | 4 units | _____      |
| STA 243                              | Computational Statistics                | 4 units | _____      |

*The following courses can be used as substitutes: For students who entered the Statistics MS program as PhD students, successful completion of STA 232A, B, C substitutes for STA 206, 207, 208*

**TOTAL CORE UNITS:** \_\_\_\_\_

#### ELECTIVE COURSES – 16 units

**At least one course from the following:**

| Course  | Title                                | Units   | Term Taken |
|---------|--------------------------------------|---------|------------|
| STA 137 | Applied Time Series Analysis         | 4 units | _____      |
| STA 138 | Analysis of Categorical Data         | 4 units | _____      |
| STA 144 | Sampling Theory of Surveys           | 4 units | _____      |
| STA 145 | Bayesian Statistical Inference       | 4 units | _____      |
| STA 260 | Statistical Practice & Data Analysis | 3 units | _____      |

*With the permission of a graduate advisor, an internship coupled with STA 299 can substitute for an elective.*

*A third 4-unit elective course taken from Mathematics, Statistics, Computer Science, or related disciplines (with Graduate Advisor approval)*

**At least two courses from the following:**

|                 |   |         |       |
|-----------------|---|---------|-------|
| STA 220         | Data & Web Technologies for Data Analysis | 4 units | _____ |
| STA 221         | Big Data & High Perf Stat Computing       | 4 units | _____ |
| ECS 120         | Theory of Computation                     | 4 units | _____ |
| ECS 122 A or B  | Algorithm Design & Analysis               | 4 units | _____ |
| ECS 130         | Scientific Computing                      | 4 units | _____ |
| ECS 140A or 240 | Programming Languages                     | 4 units | _____ |
| ECS 165 A or B  | Database Systems                          | 4 units | _____ |
| ECS 289G        | Special Topics in Computer Science        | 4 units | _____ |

**TOTAL ELECTIVE UNITS:** \_\_\_\_\_

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### COURSE REQUIREMENTS – Standard Track – 44 UNITS

#### CORE COURSES – 32 units

| Course   | Title                                   | Units   | Term Taken |
|----------|---|---------|------------|
| STA 135  | Multivariate Data Analysis              | 4 units | _____      |
| STA 200A | Introduction to Probability             | 4 units | _____      |
| STA 200B | Intro to Mathematical Statistics        | 4 units | _____      |
| STA 200C | Intro to Mathematical Statistics        | 4 units | _____      |
| STA 206  | Statistical Methods for Research        | 4 units | _____      |
| STA 207  | Statistical Methods for Research        | 4 units | _____      |
| STA 208  | Statistical Methods in Machine Learning | 4 units | _____      |

#### ONE of the following courses:

|         |                                  |         |       |
|---------|----------------------------------|---------|-------|
| STA 242 | Intro to Statistical Programming | 4 units | _____ |
| STA 243 | Computational Statistics         | 4 units | _____ |

**TOTAL CORE UNITS:** \_\_\_\_\_

*The following courses can be used as substitutes: For students who entered the Statistics MS program as PhD students, successful completion of STA 232A, B, C substitutes for STA 206, 207, 208*

#### ELECTIVE COURSES – 12 units

At least three courses, with at least one course at graduate level, selected from this list:

| Course  | Title                                     | Units   | Term Taken |
|---------|---|---------|------------|
| STA 137 | Applied Time Series Analysis              | 4 units | _____      |
| STA 138 | Analysis of Categorical Data              | 4 units | _____      |
| STA 220 | Data & Web Technologies for Data Analysis | 4 units | _____      |
| STA 221 | Big Data & High Perf Stat Computing       | 4 units | _____      |
| STA 144 | Sampling Theory of Surveys                | 4 units | _____      |
| STA 145 | Bayesian Statistical Inference            | 4 units | _____      |
| STA 260 | Statistical Practice & Data Analysis      | 3 units | _____      |

*or any 4-unit letter-grade graduate level course in Statistics. With the permission of a graduate advisor, an internship coupled with STA 299 can substitute for an elective.*

**TOTAL ELECTIVE UNITS:** \_\_\_\_\_

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**MS Comprehensive Exam**

Every M.S. student needs to pass a comprehensive exam, to continue in the program. The M.S. Comprehensive Examination is a written examination. The examination may include the use of statistical software and may be offered in a computer lab. The examination is taken at the end of the Winter quarter (during Spring Break) upon completion of STA 200A, 200B, 206, 207. If a student does not attempt the examination upon completion of those courses, and does not receive prior approval from the exam committee, it will be counted as not passing the comprehensive exam.

More information can be found on the Statistics website

**Advancement to Candidacy**

Plan II M.S. Candidates must file an [advancement to M.S. candidacy \(Plan II\) form](#) prior to completion of the program. Candidates must have taken at least half of the required coursework for their degree requirements (18 units). Contact your Program Coordinator for details.

**Typical Programs:**

For a well-prepared student it is possible to complete the core course requirements by the end of the first year. Students may take longer if they take required electives in the fourth or fifth quarter. Normative time to degree is 4-6 quarters.

|  |                                  |
|--|----------------------------------|
| Typical program:                                 |                                  |
| <b>Year 1</b>                                    | <b>Year 2</b>                    |
| <b>Fall</b>                                      | <b>Fall</b>                      |
| STA 206 (4)                                      | Elective (4)                     |
| STA 200A (4)                                     | Elective (4)                     |
| Elective (4)                                     | Elective or 299 + internship (4) |
| <b>Winter</b>                                    |                                  |
| STA 207 (4)                                      |                                  |
| STA 200B (4)                                     |                                  |
| STA 135 (4)                                      |                                  |
| <i>M.S. Comp Exam &amp; Advance to Candidacy</i> |                                  |
| <b>Spring</b>                                    |                                  |
| STA 200C (4)                                     |                                  |
| STA 208 (4)                                      |                                  |
| STA 242/243 (4)                                  |                                  |

|   |  |
|---|--|
| Typical program for a student requiring two full years (Standard Track only): |  |
| <b>Year 1</b>   | <b>Year 2</b>                                    |
| <b>Fall</b>   | <b>Fall</b>                                      |
| STA 106   | STA 206  |
| STA 131A  | STA 200A   |
| Elective  | Elective   |
| <b>Winter</b>   | <b>Winter</b>                                    |
| STA 108   | STA 207  |
| STA 135   | STA 200B   |
| STA 131B  | Elective   |
| <b>Spring</b>   | <i>M.S. Comp Exam &amp; Advance to Candidacy</i> |
| STA 131C  | <b>Spring</b>                                    |
| Elective  | STA 208  |
| Elective  | STA 242/243                                      |
|   | STA 200C   |

*Consult with your faculty advisor to develop a plan based on your experience*