# MS in Biostatistics

## Admission Requirements

In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

- **Baccalaureate Field**
  - A major in the biological, physical, or social sciences is preferred.
  - MS in Biostatistics students applying to the concentration in Health Analytics must have completed four math courses in algebra and calculus. Exceptions may be granted for applicants with relevant work experience or high-level academic achievements. Exceptions may be admitted with an individually documented plan of study to compensate for deficiencies, although applicants are strongly encouraged to satisfy all deficiencies prior to matriculation.
- **Grade Point Average** At least 3.00/4.00.
- **Tests Required** GRE General. For GRE General Tests, the combined verbal and quantitative scores must be at least 300.
- **Minimum English Competency Test Score**
  - **TOEFL** 80, with subscores of Reading 19, Listening 17, Speaking 20, and Writing 21 (iBT Test); 60, with subscores of Reading 19, Listening 17, Writing 21 (revised Paper-Delivered Test), **OR**,
  - **IELTS** 6.5, with subscores of 6.0 for all four subscores, **OR**,
  - **PTE-Academic** 54, with subscores of Reading 51, Listening 47, Speaking 53, and Writing 56.
- **Letters of Recommendation** Three required.
- **Personal Statement** Required; the statement should address the applicant's intended research, career goals, and reason for pursuing the MS degree.
- **Other Requirements** Students must have earned a grade of B or above in both Calculus I and Calculus II.

## Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

- **Minimum Semester Hours Required**: 47
- **Course Work**: At least 32 semester hours must be in courses other than IPHS 598 and at least 9 semester hours must be at the 500 level. No more than 4 hours of IPHS 596 may be applied to the degree.

### School-Wide Requirements

| Code | Title | Hours |
|---|---|---|
| **School of Public Health Core Requirements** | | |
| EPID 403 | Introduction to Epidemiology: Principles and Methods | |
| IPHS 520 | Foundations of Public Health | |
| **Required Non-Credit Training** | | |
| Information Privacy and Security/Health Privacy Training (IPS) | | |
| Human Subjects Training | | |
| Title IX Training | | |
| SPH Academic Integrity Tutorial | | |

### Divisional Core Requirements

### MS in Biostatistics

In addition to the Graduate College minimum requirements and the School of Public Health core requirements, students must complete the following divisional requirements to reach 47 semester hours.

| Code | Title | Hours |
|---|---|---|
| **Biostatistics Divisional Core Requirements** | | |
| BSTT 506 | Design of Clinical Trials | |
| or BSTT 507 | Sampling and Estimation Methods Applied to Public Health | |
| BSTT 523 | Biostatistics Methods I | |
| BSTT 524 | Biostatistics Laboratory | |
| BSTT 527 | Statistical Learning in Health Analytics | |
| BSTT 535 | Categorical Data Analysis | |
| BSTT 536 | Survival Analysis | |
| BSTT 537 | Longitudinal Data Analysis | |
| BSTT 550 | Biostatistical Investigations | |
| BSTT 510 | Biostatistics Theory I | |
| BSTT 511 | Biostatistics Theory II | |
| **Electives** | | |
| A minimum of 8 semester hours of electives. BSTT 400, BSTT 401, and BSTT 505 are not suitable electives. | | |

### MS in Biostatistics, Concentration in Health Analytics

In addition to the Graduate College minimum requirements and the School of Public Health core requirements, students must complete the following divisional requirements to reach 48 semester hours.

| Code | Title | Hours |
|---|---|---|
| **Health Analytics Divisional Core Requirements** | | |
| BSTT 426 | Health Data Analytics Using Python Programming | |
| BSTT 494 | Introductory Special Topics in Biostatistics | |
| BSTT 523 | Biostatistics Methods I | |
| BSTT 525 | Biostatistics Methods II | |
| BSTT 527 | Statistical Learning in Health Analytics | |
| BSTT 528 | Machine Learning in Health Analytics | |
| BSTT 529 | Health Analytics Investigations | |
| BSTT 535 | Categorical Data Analysis | |
| STAT 401 | Introduction to Probability | |
| STAT 411 | Statistical Theory | |
| **Electives (Recommended Courses)** | | |
| BSTT 536 | Survival Analysis | |
| BSTT 537 | Longitudinal Data Analysis | |
| One additional elective | | |

- Students will complete the MS in Biostatistics, Health Analytics concentration through course work only. The course BSTT 529 measures the main competency of Health Analytics concentration. This course includes a comprehensive investigation of either a large or sparse complex health data set that will require application of

numerous health analytics methods with an emphasis on public health research applications.

- A final comprehensive written report is needed to complete the program. At least two faculty members from the division will evaluate the final report.

## Other Requirements

- **Comprehensive Examination**: Required for MS in Biostatistics; None for MS in Biostatistics, Concentration in Health Analytics
- **Thesis, Project, or Course-work-Only Options**: Course work only
  - Biostatistics students complete the program through course work only.
  - Biostatistics students in the Health Analytics concentration complete the program through course work and a final comprehensive project in BSTT 529.