
Statistics is the discipline that educates a human being about Data. Data arise in all academic disciplines as well as in all real life situations. Experts in education, health profession, business and industry need the help of statistics for better understanding of their own subjects. Using a statistical software package, any layman can generate tables and graphs. But statistical software does not provide the intellectual capability to decide how a sample has to be collected, or how a sample can be made representative. This can be achieved through expertise in statistics. A BS Degree in statistics can provide a person with all these knowledge and understanding and also more importantly a lucrative career due to the growing needs of dealing with Big Data in astronomical, medical and various biological fields.

A – GENERAL EDUCATION CORE – 42 HOURS

Students must fulfill the General Education Core requirements. The courses listed below satisfy both degree requirements and General Education core requirements.

Required

020 - Mathematics – 3 hours

Choose from:

- MATH 1342 Elementary Statistical Methods (or MATH 1387 Honors)
- MATH 1343 Introduction to Biostatistics (or MATH 1388 Honors)

090 - Integrative and Experiential Learning – 3 hours

- CSCI 1380 Computer Science I

Recommended

030 - Life and Physical Sciences – 6 hours

Choose from:

- ENVR 1401 Introduction to Environmental Science I three-hour lecture
 - ENVR 1402 Introduction to Environmental Science II three-hour lecture
- Or*
- BIOL 1406 General Biology I (or BIOL 1487 Honors) three-hour lecture
 - BIOL 1407 General Biology II (or BIOL 1488 Honors) three-hour lecture

080 - Social and Behavioral Sciences – 3 hours

Choose from:

- ECON 1301 Introduction to Economics
- ECON 2301 Principles of Macroeconomics

090 - Integrative and Experiential Learning – 2 hours

Choose from:

- ENVR 1401 Introduction to Environmental Science I one-hour lab
 - ENVR 1402 Introduction to Environmental Science II one-hour lab
- Or*
- BIOL 1406 General Biology I one-hour lab
 - BIOL 1407 General Biology II one-hour lab

B – MAJOR REQUIREMENTS – 60 HOURS (39 advanced)

1 – Statistics Core – 39 hours (18 advanced)

- MATH 2413 Calculus I (or MATH 2487 Honors)
- MATH 2414 Calculus II (or MATH 2488 Honors)
- MATH 2415 Calculus III
- MATH 2318 Linear Algebra
- STAT 2331 Essentials of Statistics
- STAT 2336 Statistical Computing and Data Management
- STAT 3335 Applied Regression Analysis
- STAT 3336 Sampling
- STAT 3337 Probability and Statistics
- STAT 3338 Mathematical Statistics
- STAT 4332 Experimental Design and Analysis
- STAT 4390 Statistics Project

2 – Advanced Statistics Electives – 12 hours (12 advanced)

Choose 12 hours from the following:

STAT 3351 Multivariate Analysis
STAT 3352 Introduction to Linear Models
STAT 4341 Introduction to Stochastic Processes
STAT 4342 Time Series Analysis
STAT 4345 Introduction to Simulation
STAT 4346 Introduction to Bayesian Inference
STAT 4347 Nonparametric Statistics
STAT 4351 Categorical Data Analysis
STAT 4352 Survival Analysis
STAT 4392 Statistical Consulting
STAT 4399 Special Topics in Statistics

Courses like Introduction to Bioinformatics, Environmental and Spatial Statistics, Statistical Data Mining and Machine Learning, Big Data Analytics, Structural Bioinformatics could be some recommended courses for Special Topics in Statistics.

3 – Advanced Math Electives – 9 hours (9 advanced)

Choose 9 hours from the following:

MATH 3341 Differential Equations
MATH 3345 Linear Optimization
MATH 3350 Introduction to Mathematical Proof
MATH 3361 Applied Discrete Mathematics
MATH 3372 Real Analysis I
MATH 3383 Actuarial Statistical Estimates
MATH 3385 Theory of Interest
MATH 3386 Actuarial Financial Mathematics
MATH 3399 Special Topics in Mathematics
MATH 4342 Complex Variables

C – FREE ELECTIVES – 18 HOURS (9 advanced)

Recommended

BIOL 3413 Genetics
BIOL 3415 Molecular Biology
CSCI 2380 Computer Science II
CSCI 3310 Mathematical Foundations of Computer Science
CSCI 3333 Algorithms and Data Structures
CSCI 4333 Database Design and Implementation

TOTAL CREDIT HOURS FOR GRADUATION – 120 HOURS

TOTAL ADVANCED HOURS – 48 HOURS

ADMISSION, PROGRESSION, AND GRADUATION REQUIREMENTS, if applicable:

Progression requirements

1. The student must maintain an overall GPA of at least 2.25 at the end of the 90 credit hours that count towards the degree.

Graduation requirements

1. The student must complete all Statistics core course requirements with grades of 'C' or better.
2. The student must have an overall GPA of 2.5 or better in section B – Major Requirements.