STATISTICS B.S.MSC.

STATISTICS MAJOR

Statistics is a mathematical science extensively used in a wide variety of fields. Indeed, every discipline which gathers and interprets data uses statistical concepts and procedures to understand the information implicit in their data. Statisticians become involved in efforts to solve real world problems by designing surveys and experimental plans, constructing and interpreting descriptive statistics, developing and applying statistical inference procedures, and developing and investigating stochastic models or computer simulations. To investigate new statistical procedures requires a knowledge of mathematics and computing as well as statistical theory. To apply concepts and procedures effectively also calls for an understanding of the field of application and oral/written presentation skills.

The curriculum is designed for students who plan to enter business, industry, or government as statisticians or data scientists; to become professional actuaries; or to continue to graduate school in statistics/biostatistics, data science or another field where quantitative ability is valuable (operations research, medicine, public health, demography, psychology, etc.). Students are encouraged to undertake special projects to gain experience in data analysis, design, and statistical computing. Also, experience may be gained with local industry and other organizations for those interested in quality control, industrial statistics, survey and market research or forecasting, for example.

Students pursuing the Bachelor of Science in Mathematical Sciences in CEMS may select statistics as their major. In addition, students pursuing a Bachelor of Arts from the College of Arts and Sciences may concentrate in statistics as a part of their mathematics major.

REGULATIONS

Students pursuing the Bachelor of Science in Mathematical Sciences (Majoring in Statistics) are subject to the Academic Standards in CEMS outlined in this catalogue.

ADDITIONAL REGULATIONS

No more than three grades of D, D+, or D– in 3000-level (or higher) statistics (STAT) courses may be used to satisfy "Major Courses" requirements.

REQUIREMENTS

All students must meet the Degree and University Requirements.

All students must meet the Catamount Core Curriculum Requirements.

All students must meet the College Requirements.

A minimum of 120 credits is required.

A. CORE CURRICULUM

Requirement Description		Credits
CEMS 1500	CEMS First Year Seminar [1]	1
CS 1210	Computer Programming I	3
MATH 1234	Calculus I [2]	4
MATH 1248	Calculus II	4
STAT 1870	Intro to Data Science	3
MATH 2544	Linear Algebra	3
or MATH 2522	Applied Linear Algebra	
STAT 2430	Statistics for Engineering	3

1 CEMS degree requirement designed for first-year students. Students entering the College after their first semester should work with their academic advisor to identify an appropriate substitution as approved for their major. The course used to fulfill the CEMS 1500 requirement cannot be used to fulfill another requirement in the major.

2 A student with a MATH 1234 waiver can use it to fulfill the requirement of MATH 1234 in the Core Curriculum.

B. MAJOR COURSES

Requirement Description		Credits
STAT 2510	Applied Probability	3
STAT 2830	Basic Statistical Methods 2	3
STAT 2870	Basics of Data Science	3
STAT 3000	Med Biostat&Epidemiology	3
STAT 3010	Stat Computing&Data Anlysis	3
STAT 3210	Advanced Statistical Methods	3
STAT 3410	Statistical Inference	3
STAT 4810	Capstone Experience [3]	1-3
or STAT 3996	Undergrad Honors Thesis	
Plus 6 additional credits in STAT numbered 3000 or above.		

3 Satisfies CEMS Professional Development Requirement.

C. ANCILLARY COURSES

Requirement Description		Credits
SPCH 1400	Effective Speaking	3
Two 3- or 4-credit courses designated Catamount Core N1 or N2, at least one of which must be an N2 course with a lab.		

D. MINOR

A student must complete a minor in a field other than Mathematics or Statistics by satisfying the requirements specified by the Department or Program supervising the minor.

Completion of a second major or second degree in a field other than Mathematics will satisfy the minor requirement.