

## STATISTICS AMP

All students must meet the Requirements for the Accelerated Master's Degree Pathway

### OVERVIEW

The Statistics Program offers biostatistics, statistics, data science and probability courses for the entire university community along with traditional degree programs and individually designed degree programs emphasizing statistics applied to other fields. The degree programs are designed primarily for students who plan careers in data sciences, business, actuarial science, industry, and government or advanced training in disciplines that make extensive use of statistical methods and data science. The program faculty is deeply involved in consulting and collaborative research in a wide variety of fields, including industry, agriculture, and in the basic and clinical medical sciences. These research activities along with the research of other quantitative UVM faculty offer students unique opportunities to apply their classroom training to "real world" problems. Qualified students with the goal of learning statistics to use in a specialized area of application are especially encouraged to take advantage of these cooperative arrangements.

Program faculty have active statistics research efforts in areas such as bioinformatics, statistical genetics, Bayesian models, survival data analysis, discriminant analysis, bootstrap methods, machine learning, predictive modeling, networks, categorical data analysis, measurement error models, and experimental design. Students seeking the traditional graduate degree in statistics (along with course work in mathematics and computer science, if desired) have excellent opportunities to participate in the faculty's research.

### SPECIFIC REQUIREMENTS

#### Requirements for Admission to Graduate Studies for the Degree of Master of Science for Accelerated Students

Students should discuss the possibility of an Accelerated Master's Entry Pathway in statistics with the respective program director as soon as they think they may be interested in this program. Students must declare their wish to enter the Accelerated Master's Entry Pathway in writing to the statistics program director (it is recommended that this happen before the end of their Junior year). They would apply to the Graduate College for admission, noting their interest in the Accelerated Master's Entry Pathway. They can receive concurrent undergraduate and graduate credit for 1 or 2 graduate level courses, once admitted. No graduate credit can be counted for statistics courses earned prior to admission to the graduate program. If declared for graduate credit, a third graduate level course can transfer to graduate degree requirements provided those credits are not used to satisfy undergraduate degree requirements.

#### Minimum Degree Requirements for the Degree of Master of Science

Requirement Description		Credits
OPTION A (THESIS)		
A 30 credit program requiring 24 credits of statistics course work. The program must include:		
STAT 5230	Appld Multivariate Analysis	3
STAT 5310	Experimental Design	3
STAT 5510	Probability Theory	3
15 additional course credits are required. Other graduate level statistics courses or (if approved) other courses in mathematics, quantitative methods, or specialized fields of application can be selected.		15
6 credits of thesis research is required:		
STAT 6391	Master's Thesis Research	6

Requirement Description		Credits
OPTION B (NON-THESIS)		
A 30 credit program requiring 27 credits of course work. The program must include:		
STAT 5230	Appld Multivariate Analysis	3
STAT 5310	Experimental Design	3
STAT 5510	Probability Theory	3
18 additional course credits are required. Other graduate-level statistics courses or (if approved) other courses in mathematics, quantitative methods, or specialized fields of application can be selected.		18
The research project requirement is met by taking three semester hours of:		
STAT 6810	Statistical Research	3
or STAT 6850	Consulting Practicum	

Requirement Description		Credits
BOTH OPTIONS		
Under both options, the student is expected to participate in the colloquium series of the program and in the Statistics Student Association Journal Club. The student must pass the comprehensive examination.		

#### Comprehensive Examination

The comprehensive exam is a 3-hour exam that includes a mixture of questions spanning theoretical and applied statistics, probability, study design, and interpretation of analytical results. The questions are formatted as either numerical computation, derivation, or essay. The student can take the exam a maximum of 2 times. The exam is based on the courses STAT 5210, STAT 5230, STAT 5310, and

STAT 5510. The exam is given at the end of August and should be taken at the end of the first year.

**Requirements for Advancement to Candidacy for the Degree of Master of Science**

Successful completion of any prerequisite courses, and at least 15 graded graduate credits earned in compilation of the graduate GPA, including all core courses. A GPA of 3.00 or greater is also required.