

## PROGRAMS OFFERED

M.S. degree in Statistics is offered in two different areas (options) with and without thesis. These are *Statistics with thesis* and *Statistics without thesis*, and *Interdisciplinary Statistics with thesis* and *Interdisciplinary Statistics without thesis* programs. At the Doctorate level, there is only one program, Ph.D. in Statistics, applied in two tracks: *admission by M.S. degree* and *admission by B.S. degree*.

### M.S. PROGRAM IN STATISTICS WITH THESIS

#### Option I. Statistics with Thesis

##### Required Courses

STAT 500 M.S. Thesis	NC	STAT 542 Seminar I	(0-2) NC
STAT 501 Statistical Theory I	(3-0) 3	STAT 543 Seminar II	(0-2) NC
STAT 502 Statistical Theory II	(3-0) 3		
STAT 8XX Special Studies	(4-2) NC		

##### Elective Courses

Students are required to take five elective courses from the list of graduate (M.S. or Ph.D.) elective courses offered or approved by the Department. The list may be subject to the modification by the Department.

Total minimum credit: 21

Minimum number of courses with credit: 7

#### Option II. Interdisciplinary Statistics with Thesis

##### Required Courses

STAT 500 M.S. Thesis	NC	STAT 542 Seminar I	(0-2) NC
STAT 551 Probability and Statistics I	(3-0) 3	STAT 543 Seminar II	(0-2) NC
STAT 552 Probability and Statistics II	(3-0) 3		
STAT 8XX Special Studies	(4-2) NC		

##### Elective Courses

Students are required to take five elective courses subject to the restriction that one is *Computing Elective Course*, one is *Modeling Elective Course*, and one is *Other Elective Course* offered or approved by the Department. The list may be subject to the modification by the Department.

Total minimum credit: 21

Minimum number of courses with credit: 7

## M.S. PROGRAM IN STATISTICS WITHOUT THESIS

### Option I. Statistics without Thesis

#### **Required Courses**

STAT 501 Statistical Theory I	(3-0) 3	STAT 542 Seminar I	(0-2) NC
STAT 502 Statistical Theory II	(3-0) 3	STAT 543 Seminar II	(0-2) NC
STAT 598 Term Project in Statistics	(0-2) NC		

#### **Elective Courses**

Students are required to take eight elective courses from the list of graduate (M.S. or Ph.D.) elective courses offered or approved by the Department. The list may be subject to the modification by the Department.

Total minimum credit: 30

Minimum number of courses with credit: 10

### Option II. Interdisciplinary Statistics without Thesis

#### **Required Courses**

STAT 551 Probability and Statistics I	(3-0) 3	STAT 542 Seminar I	(0-2) NC
STAT 552 Probability and Statistics II	(3-0) 3	STAT 543 Seminar II	(0-2) NC
STAT 599 Term Project in Interdisciplinary Statistics	(0-2) NC		

#### **Elective Courses**

Students are required to take eight elective courses subject to the restriction that one is *Computing Elective Course*, one is *Modeling Elective Course*, and one is *Other Elective Course* offered or approved by the Department. The list may be subject to the modification by the Department.

Total minimum credit: 30

Minimum number of courses with credit: 10

## Ph. D. PROGRAM IN STATISTICS

Ph. D. in Statistics are applied in two tracks: *admission by M.S. degree* and *admission by B.S. degree*.

### Track 1. If admitted by M.S. degree

#### **Required Courses**

STAT 600 Ph. D. Thesis	NC
STAT 601 Advanced Probability Theory I	(3-0) 3
STAT 602 Advanced Probability Theory II	(3-0) 3
STAT 603 Advanced Theory of Statistics I	(3-0) 3
STAT 604 Advanced Theory of Statistics II	(3-0) 3
STAT 642 Seminar in Statistics I	(0-2) NC
STAT 643 Seminar in Statistics II	(0-2) NC
STAT 9XX Special Topics	(4-0) NC

#### **Elective Courses**

Students are required to take four elective courses from the list of graduate (M.S. or Ph.D.) courses offered or approved by the Department. The list may be subject to the modification by the Department.

Total minimum credit: 24

Minimum number of courses with credit: 8

### Track2. If admitted by B.S. degree

#### **Required Courses**

STAT 501 Statistical Theory I	(3-0) 3
STAT 502 Statistical Theory II	(3-0) 3
STAT 542 Seminar I	(0-2) NC
STAT 542 Seminar II	(0-2) NC
STAT 600 Ph. D. Thesis	NC
STAT 601 Advanced Probability Theory I	(3-0) 3
STAT 602 Advanced Probability Theory II	(3-0) 3
STAT 603 Advanced Theory of Statistics I	(3-0) 3
STAT 604 Advanced Theory of Statistics II	(3-0) 3
STAT 642 Seminar in Statistics I	(0-2) NC
STAT 643 Seminar in Statistics II	(0-2) NC
STAT 9XX Special Topics	(4-0) NC

#### **Elective Courses**

Students are required to take nine elective courses from the list of graduate (M.S. or Ph.D.) courses offered or approved by the Department. The list may be subject to the modification by the Department.

Total minimum credit: 45

Minimum number of courses with credit: 15

## LIST OF GRADUATE COURSES

### LIST OF M.S. COURSES

#### **Required Courses**

STAT 500 M.S. Thesis	NC
STAT 501 Statistical Theory I	(3-0) 3
STAT 502 Statistical Theory II	(3-0) 3
STAT 551 Probability and Statistics I	(3-0) 3
STAT 552 Probability and Statistics II	(3-0) 3
STAT 542 Seminar I	(0-2) NC
STAT 543 Seminar II	(0-2) NC
STAT 8XX Special Studies	(4-2) NC

#### **Computing Elective Courses**

STAT 554 Computational Statistics	(3-0) 3
STAT 555 Advanced Computational Statistics	(3-0) 3
STAT 556 Advanced Computing Methods in Statistics	(3-0) 3

#### **Modeling Elective Courses**

STAT 503 Linear Statistical Models	(3-0) 3
STAT 525 Regression Theory and Methods	(3-0) 3
STAT 557 Statistical Modeling I	(3-0) 3
STAT 558 Statistical Modeling II	(3-0) 3
STAT 559 Applied Multivariate Analysis	(3-0) 3
STAT 560 Logistic Regression Analysis	(3-0) 3
STAT 561 Panel Data Analysis	(3-0) 3
STAT 562 Univariate Time Series Analysis	(3-0) 3
STAT 563 Multivariate Time Series Analysis	(3-0) 3

#### **Other Elective Courses**

STAT 504 Non-Parametric Statistical Inference and Methods	(3-0) 3
STAT 505 Sampling Theory and Methods	(3-0) 3
STAT 509 Applied Stochastic Processes	(3-0) 3
STAT 518 Statistical Analysis of Design Experiments	(3-0) 3
STAT 553 Actuarial Analysis and Risk Theory	(3-0) 3
STAT 564 Advanced Statistical Data Analysis	(3-0) 3
STAT 565 Decision Theory and Bayesian Analysis	(3-0) 3
STAT 566 Reliability Theory and Methods	(3-0) 3
STAT 567 Biostatistics and Statistical Genetics	(3-0) 3
STAT 568 Statistical Consulting	(3-0) 3

## LIST OF Ph. D. COURSES

### **Required Courses**

STAT 600 Ph. D. Thesis	NC
STAT 601 Advanced Probability Theory I	(3-0) 3
STAT 602 Advanced Probability Theory II	(3-0) 3
STAT 603 Advanced Theory of Statistics I	(3-0) 3
STAT 604 Advanced Theory of Statistics II	(3-0) 3
STAT 642 Seminar in Statistics I	(0-2) NC
STAT 643 Seminar in Statistics II	(0-2) NC
STAT 9XX Special Topics	(4-0) NC

### **Modeling Elective Courses**

STAT 605 Theory of Linear and Nonlinear Statistical Models	(3-0) 3
STAT 608 Probability Models and Stochastic Processes	(3-0) 3
STAT 611 Multivariate Analysis	(3-0) 3
STAT 612 Advanced Topics in Time Series Analysis	(3-0) 3
STAT 618 Mathematical Models and Response Surface Methodology	(3-0) 3
STAT 619 Advanced Topics in Regression and Analysis of Variance	(3-0) 3
STAT 622 Discrete Multivariate Analysis	(3-0) 3
STAT 623 Spatial Statistics	(3-0) 3

### **Other Elective Courses**

STAT 606 Theory of Experimental Designs	(3-0) 3
STAT 607 Nonparametric Theory of Statistics	(3-0) 3
STAT 609 Statistical Decision Theory	(3-0) 3
STAT 610 Sequential Analysis	(3-0) 3
STAT 613 Advanced Topics in Life Testing and Reliability	(3-0) 3
STAT 614 Interpretation of Data I	(3-0) 3
STAT 615 Interpretation of Data II	(3-0) 3
STAT 616 Applications of Statistics in Industry	(3-0) 3
STAT 617 Large Sample Theory of Statistics	(3-0) 3
STAT 620 Bayesian Inference	(3-0) 3
STAT 621 Robust Statistics	(3-0) 3
STAT 630 Advanced Topics in Statistical Inference	(3-0) 3
STAT 632 Inference for Stochastic Processes	(3-0) 3
STAT 634 Theory of Stationary Random Functions	(3-0) 3