



MASTER OF SCIENCE IN STATISTICS

The Master of Science in Statistics program prepares students for research and for advanced level work by providing them the necessary foundation for doctoral studies. It aims to develop future statisticians for the academe, government service, and industry.

PROGRAM REQUIREMENTS

Core Courses	12 units
Major Courses / Practicum	12 units
Special Topics	6 units
Graduate Seminar	1 unit
Thesis	6 units
Written Comprehensive Examination (WCE)	0 units
Bridging Courses	(12 units)
Total	37 + (12) units

COURSE TRACKING

Year	Term 1	Term 2	Term 3
1	<i>Bridging Program:</i> <ul style="list-style-type: none"> Introduction to Statistical Theory 1 (MSS501M) Introduction to Statistical Theory 2 (MSS503M) Statistical Methods (MSS505M) 	<ul style="list-style-type: none"> Introduction to Probability Theory (MSS511M) Introduction to the Theory of Linear Models (MSS515M) Statistical Consulting 1 * (MSS911M) 	<ul style="list-style-type: none"> Introduction to the Theory of Statistical Inference (MSS513M) Time Series Analysis (MSS605M) Statistical Consulting 2 * (MSS913M)
2	<ul style="list-style-type: none"> Survey Sampling Theory and Methods (MSS517M) Multivariate Analysis (MSS603M) Special Topics 1 * (MSS701M) Statistical Consulting 3 * (MSS915M) 	<ul style="list-style-type: none"> Introduction to the Theory of Stochastic Processes * (MSS601M) Special Topics 2 * (MSS703M) Graduate Seminar * (MSS901M) WCE 	<ul style="list-style-type: none"> Thesis (MSS880M)
	<ul style="list-style-type: none"> Thesis – MSS888M) 		

* These courses are not included in the WCE and may be taken after the WCE.

BRIDGING COURSES

Introduction to Statistical Theory 1 (MSS501M)

(3 units)

This is a modular course on the theory of probability.

Introduction to Statistical Theory 2 (MSS503M)

(3 units)

This is a modular course on the theory of inference.



Statistical Methods (MSS505M)

(6 units)

This is a course on regression, time series analysis, design of experiments, and introductory multivariate statistical methods.

CORE COURSES

Introduction to Probability Theory (MSS511M)

3 units

This is a course on the fundamentals of probability space, random variables, expectation, independence, characteristic functions, convergence concepts, conditioning and law of large numbers.

(Requires knowledge of differential and integral calculus.)

Introduction to the Theory of Statistical Inference (MSS513M)

3 units

This is a course on the theory of estimation and hypothesis testing.

Prerequisite: Introduction to Probability Theory

Introduction to the Theory of Linear Models (MSS515M)

3 units

This is a course on linear models, estimation and test of hypothesis in both the full and less than full rank models.

(Requires knowledge of linear algebra.)

Survey Sampling Theory and Methods (MSS517M)

3 units

This is a course on simple random sampling, stratified random sampling, systematic random sampling, systematic and cluster sampling, ratio estimates and cost minimization.

Prerequisite: Theory of Statistical Inference

MAJOR COURSES

Introduction to the Theory of Stochastic Processes (MSS601M)

3 units

This is a course on Poisson process, Markov chains, continuous time Markov chains, renewal theory, and martingales.

Prerequisite: Introduction to Probability Theory

Multivariate Analysis (MSS603M)

3 units

This course aims to present an overview of the theory and application of multivariate methods. Specifically, this course deals with principal component analysis, factor analysis, cluster analysis, multi-dimensional scaling, multivariate analysis of variance, discriminant analysis, canonical correlation analysis, and other multivariate techniques.

Prerequisites: Theory of Statistical Inference Introduction to the Theory of Linear Models

Time Series Analysis (MSS605M)

3 units

This is a course on linear extrapolation, exponential smoothing, ARMA and ARIMA processes, unit root testing, transfer functions and applications, and GARCH models.

Prerequisite: Introduction to the Theory of Linear Models



Statistical Consulting 1 (MSS911M)

Statistical Consulting 2 (MSS913M)

Statistical Consulting 3 (MSS915M)

1 unit x 3 = 3 units

This is a practicum course for MS Statistics students. This course is spread over three terms. **Statistical Consulting 1** taken first will discuss basic principles of statistical consulting and discuss case studies faced in actual consulting work. The second series, **Statistical Consulting 2** will be supervised consulting for 14 hours in the term and **Statistical Consulting 3** will be 14 hours of independent consulting.

Prerequisite for Statistical Consulting 2: Statistical Consulting 1

Prerequisite for Statistical Consulting 3: Statistical Consulting 2

SPECIAL TOPICS

Special Topics 1 (MSS701M)

Special Topics 2 (MSS703M)

3 units x 2 = 6 units

This is a course on selected topics on recent developments in statistical theory and methods.

Prerequisite: Consent of Instructor

WRITTEN COMPREHENSIVE EXAMINATION (WCE)

Statistical Theory 1 (MSS511W)

Statistical Methods (MSS512W)

Statistical Theory 2 (MSS513W)

GRADUATE SEMINAR AND MASTERAL THESIS

Graduate Seminar in Statistics (MSS901M)

1 unit

This is a course on the fundamentals of research, preparation of a thesis proposal, thesis writing procedure, statistics topics for research, and a selection of topics on statistical theory and methods.

Prerequisite: Must have taken and passed all the core and major courses

Masteral Thesis (MSS880M – MSS888M)

6 units

Conduct of an independent research under the supervision of a thesis mentor. Students are expected to contribute to improve statistical methodology and/or theory. Furthermore, as a requirement of the University, the quality of the thesis should allow the student to publish at least one article in a refereed journal.

Prerequisite: Must have taken and passed the WCE

ADMISSION REQUIREMENTS

Minimum academic preparation would be differential and integral calculus, and linear algebra. Students who lack courses on statistical theory and methods at the undergraduate level will be required to attend and complete a bridging program.