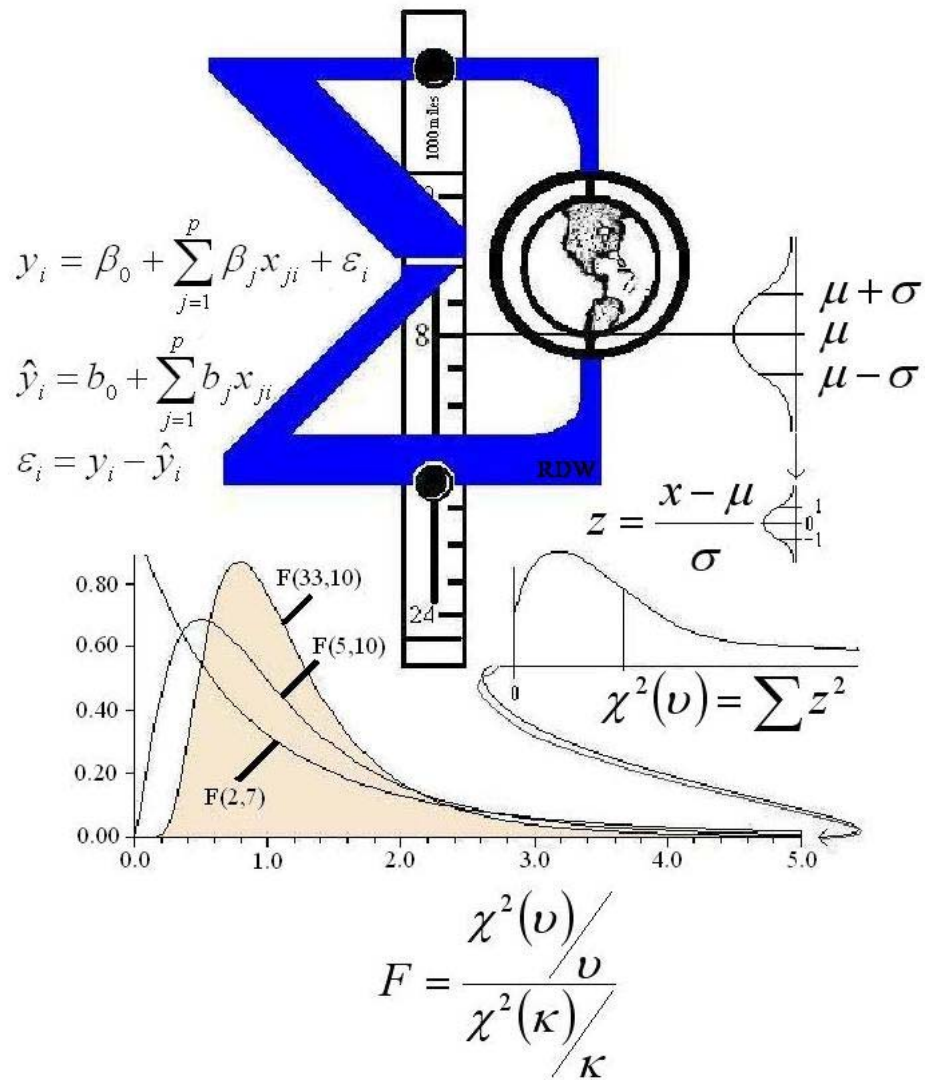


HANDBOOK FOR M. A. GRADUATE STUDENTS
 IN STATISTICS/PROBABILITY PROGRAM
 UNIVERSITY OF SOUTH FLORIDA
 TAMPA, FLORIDA, USA
 OCTOBER 2007



ORGANIZATIONAL CHART OF THE
STATISTICS/PROBABILITY MS/MA PROGRAM

PROGRAM DIRECTOR OF STATISTICS
Professor Chris P. Tsokos

GRADUATE PROGRAM ADVISORY COMMITTEE
Three Senior Faculty Members
Professors: Chris P. Tsokos, K. Ramachandran and G. S. Ladde

Academic Program Specialist
Ms. Sarina Maldonado

OCTOBER 2007

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1. INTRODUCTION

The purpose of this Handbook is to supplement the Graduate Catalog of the University of South Florida, Tampa, by instructing the Statistics/Probability MA graduate students of those policies, procedures and guidelines that are not found in the Graduate Catalog. It is expected that the student should be familiar with both the Graduate Catalog and the Handbook.

2. ADMISSION TO THE PROGRAM

Students interested in this program should apply for admission contacting the Mathematics and Statistics Academic Program Specialist, Ms. Sarina Maldonado for Statistics/Probability. As per the rules of the University of South Florida, students accepted to the Master of Arts (M.A.) program must have:

- (i) A BA or BS degree in one of the following areas, namely, Statistics, Mathematics, Biological Sciences, Business, Engineering or Physical Sciences with at least three semesters of calculus or its equivalent series,
- (ii) A GRE score of at least 1000 (verbal and quantitative) and at least 650 quantitative score,
- (iii) TOEFL score of at least 550 if Paper Based, at least 213 if Computer Based and at least 79 if Internet Based for a foreign student whose native language is not English, and
- (iv) Students whose native language is not English should obtain a score of at least 55 in the TSE (Test of Spoken English) to be eligible for Teaching Assistantship.

Admission to the Graduate Program is administered by a Two Member Subcommittee of the Graduate Faculty of Statistics Program. The Senior Member of the Faculty is the Chairperson of this Subcommittee. Currently, the Admission Subcommittee is composed of Dr. K. Ramachandran- Chairperson and Dr. W. Kim-Member.

The role and scope of this Subcommittee is to undertake the task of all issues/concerns regarding the Admission Process to the Statistics Graduate Program. In summary, the Subcommittee is responsible for:

- a. Developing and maintaining the Statistics Graduate Program's admission policies, procedures, guidelines, and requirements that are compatible with the College of Arts & Sciences and with USF Graduate School at Tampa, for prospective graduate students,
- b. Developing and maintaining the policies, procedures, guidelines, and requirements, for the award of Teaching Assistantships that are compatible with the College of Arts & Sciences and with USF Graduate School at Tampa for prospective Graduate Teaching Assistants,
- c. Evaluating the Conditional or Provisional Admission Status of the student,
- d. Acceptance of the student's transfer of Graduate course work.

3. GENERAL ACADEMIC ADVISEMENT

After the admission to the Graduate School, the Statistics/Probability student will consult with the Program Director/Advisor. During the advisement process, the Program Director/Advisor will advise the incoming graduate student to follow the academic guidance/instructions as per the description in this Handbook in the word and deed. In short, the graduate student:

1. Is responsible for reading, familiarizing and understanding all policies, procedures regulations/guidelines and requirements of University of South Florida Graduate School and the College of Arts & Sciences as per Graduate Catalog and College Level Documents,
2. Needs to progress in her/his academic degree plan as per timely manner and is expected to maintain a grade point average (GPA) of “3.0” or better,
3. Expected to complete at least 30 hours course work.
4. Graduate students who are international students and /or Graduate Teaching Assistants (GTA) must be progressing in a satisfactory manner towards their degree plan with minimum number of credit hours per semester,
5. Expected to be responsible for taking any assistance by contacting the Program Director/Advisor with regard to any particular situation that may arise during the course of graduate study at USF,
6. Expected to participate in the academic activities that are beneficial to their academic contacts, career, development and intellectual growth,
7. Expected to mark and to meet the important dates (registration, exams (qualifying and comprehensive), thesis defense, graduation, and etc.) on her/his Calendar, and
8. In addition, domestic students who are TA’s are responsible for fulfilling requirements for the Florida Residency classification. International students who are TA’s are excluded from this requirement.

4. TEMPORARY ADVISOR/SUPERVISOR

During the first semester, the Program Director/Advisor may designate the student’s Temporary Advisor/Supervisor. This Advisor/Supervisor may be changed at any time, if it is in the student’s academic interest and benefit. The student must consult with the Temporary Advisor/Supervisor before each registration or when adding or dropping a course. This Advisor/Supervisor may assist for registering the courses. Moreover, he/she will provide academic guidance to the student, and answers to academic questions with regard to academic matters. It is recommended that the student with “3.0” GPA or better continues to be in touch with the Temporary Advisor/Supervisor with regard to the registration and other academic matters until her/his completion of MA Comprehensive Examination. In summary, the objective of the Advisor/Supervisor is to provide the high quality academic advice and environment to meet, to promote the academic needs and goals, and to fulfill the graduation requirements in an enjoyable, timely and successful manner under the guidance of the graduate faculty.

5. ACADEMIC PROBATION AND DISMISSAL

Graduate students are required to maintain a GPA of “3.0” or better. The student with either less than a “3.0” average or at most two C’s will be placed on academic probation. A student who has a substandard average (GPA below 3.0) for two successive semesters may be dismissed by the Dean of the Graduate School. As the byproduct of this, the student who has financial support will be losing the support. In summary, the student needs to have “GOOD STANDING” in her/his graduate program, and completes the degree requirements in a satisfactory manner.

6. GRADUATE PROGRAM ADVISORY COMMITTEE

The Graduate Program Advisory Committee (GPAC) in statistics is composed of three senior faculties. Professors: C. Tsokos, K. Ramachandran and G. Ladde are the members of this committee. Professor Tsokos is Chairman of this committee.

The function of this committee is:

- a. To develop and to maintain general program guidelines, policies, procedures and regulations affecting the Graduate Program in Statistics,
- b. To develop plans to strengthen the Graduate Program to meet the needs and demands in the 21st Century,
- c. To make efforts to attract highly qualified graduate students into the program by creating learning environment in the Statistics Programs,
- d. To seek financial support to our graduate students from both public and private sources, namely, from industries, business and government (both State and Federal Level),
- e. To find the ways in which to expose our faculty and graduate students to the prospective financial sources,
- f. To establish connections with prospective sources of employment opportunities for our graduate students,
- g. To generate an environment to have frequent interactions between the statistics faculty, graduate and undergraduate students,
- h. To increase and to involve both graduate and undergraduate students’ participation in organizing academic activities,
- i. To provide information about the role, scope and opportunities of statistics in the 21st Century

In summary, one of the major tasks of this committee is not only to provide future directions and vision to our graduate and undergraduate students but also to involve and to expose them in the 21st Century problem solving processes as early as possible. This would lead to the better opportunities to our graduates.

7. M.A. COMPREHENSIVE EXAMINATION I

The purpose of the MA Comprehensive Examination I is to evaluate not only the applications of breadth and depth of understanding of algorithms (theorems), concepts and techniques, but also the ability of the integration of the knowledge in a systematic and coherent way. In short, the ability and creativity of problem solving process are adjudicated. After completion of certain basic MA core course work, the student will be encouraged by the Temporary Advisor or at least one of the Graduate Faculty, with the consent of the Program Director/Advisor, to take the MA Comprehensive Examination. The students should have completed the core sequences Statistical Methods I and II and Mathematical Statistics I and II satisfactorily as well as prepared themselves for the Core Qualifying Examination, in one of the two core sequences as follows:

- Core Sequence I - Statistical Methods
- Core Sequence II- Mathematical Statistics.

These examinations are offered three times per Calendar year in September, January and May. Each examination is administered by two graduate faculty members in the Statistics program. Students are expected to pass one of the two Core Qualifying Examinations in no more than two attempts.

MA Core Qualifying Examination I: The MA Core Qualifying Examination I covers the material concerning the following courses:

- STA-5166 -Statistical Methods I,
- STA-6167-Statistical Methods II
- STA-6208-Linear Statistical Models.

MA Core Qualifying Examination II: The MA Core Qualifying Examination II examination covers the material concerning the following courses:

- STA-5326 –Mathematical Statistics I,
- STA-6326 - Mathematical Statistics II.

After completion of the above core course requirements and upon the recommendation of the Temporary Advisor/Graduate Faculty, the student is eligible to take the Core Qualifying Examination towards the MA under the consultation with the Program Director. Each of the Qualifying Examinations is administered by a Subcommittee composed of at least two graduate faculty members in the program. The Examination Subcommittee is approved by the Statistics Program Director.

8. PERMANENT ADVISOR AND GRADUATE STUDENT SUPERVISORY COMMITTEE

After a successful completion of the one of the two Core Qualifying Examinations towards the MA, the student should find a faculty member who will agree to serve as her/his Permanent Advisor (Major Professor). This advisor must be approved by the Graduate Program Advisory Committee (GPAC) in Statistics. At this time, the Permanent Advisor coupled with Graduate Program Advisory Committee will constitute the Graduate Student's Supervisory Committee (GSSC). This Committee requires approval by the Program Director and the College Dean. This committee will take over all duties of the student's Temporary Advisor.

9. FINAL PROGRAM OF WORK

Moreover, the Final Program of Work listing all courses, which will be counted towards the degree including those not yet attempted, is formulated by the GSSC. This document, when approved, assures the student that upon completion of the prescribed degree program and upon acceptance of the Research Report/Master's Thesis depending whether the student selected the Thesis or the Non-thesis Degree Option, the degree will be awarded. Changes in the agreed upon program of study are permitted if it is formally submitted. But the changes may result in additional requirements being placed upon the student.

10. MA COMPREHENSIVE EXAMINATION II

After successfully passing the Comprehensive Examination-I, completing the minimum course requirements approved by the Graduate Student Supervisory Committee (GSSC), and in consultation with his/her Permanent Advisor (Major Professor), and depending on the choice of the MA. Degree Plan, the student is advised to take the Comprehensive Examination II.

(a) Non-thesis Option: The student under the Non-thesis Degree Option will prepare an in depth study in the area of interest of the student under the supervision of her/his Major Professor. After the completion of the study, the student presents the Research Report to the GSSC. The GSSC serves as the MA Comprehensive Examination-II committee. Upon the successful presentation of the Research Report and completion of course requirements, MA Degree is awarded to the student.

(b) Thesis Option: After the approval of the Final Program of Work, the student may officially begin Master's Thesis research by enrolling in MTA-6971-Master's Thesis. The thesis represents the culmination of the student's academic efforts, and hence is expected to demonstrate either in depth independent study or the original research activity. Final copies of master's thesis must be prepared according to Graduate School regulations found in the Graduate Catalog. These regulations are strictly adhered to, so it is wise for the student to work closely with the Graduate Office

during the final semester to see that all forms and rules are properly executed. The final thesis should be professionally prepared, including typing, figures, artwork, etc. After the completion of the thesis research work, the candidate must present an oral defense of the thesis. This oral examination will be open to all members of the University Community, with questioning directed by the student's Supervisory Committee. A request for the thesis defense must be submitted no later than five weeks before the date listed by the Graduate Catalog for submission of the final approval dissertation. The thesis defense report must be filed with three unbound copies of the final approved dissertation no later than three weeks before the date of conferral of the degree. At least five members of the faculty, including all members of the Supervisory Committee, must be present during this defense. In summary, all the policies and procedures for the thesis defense are as per the Graduate Catalog guidelines.

11. LAST SEMESTER STUDENT'S DUTY

During the last semester of the graduate study, it is the duty of the student to be aware of deadlines listed by the Graduate School. These deadlines listed in the current Graduate Catalog, and may change yearly. The important deadlines are:

1. Deadline for Graduation: The final dates for MA candidates to file: (i) Application for Graduation, (ii) Pay Graduation Fee, (iii) Final Degree Plan.
2. Final Date for Requesting Thesis Defense (if applicable, at least 3 weeks before defense)
3. Final Date for Submitting Completed Copy of Thesis (if applicable) to Examining Committee at least two weeks prior to defense
4. Final Date to hold Thesis Defense (if applicable, at least four weeks before the commencement)
5. Final Date for Submitting Copy of Thesis (if applicable) to the Graduate School for the Preliminary Check on Mechanical Format
6. Final Date for Submitting Approved Thesis, Thesis Defense Report, Paying Binding Fee and Thesis Microfilming Fees (if applicable, approximately one month before the end of a regular semester)

The dates listed above are final dates, and it is advisable to do these well in advance, since complications usually arise. The student must be registered in the semester in which the degree is awarded. Students are strongly advised to be familiar with the deadlines as well as above requirements.

12. COURSE REQUIREMENT FOR M.A. PROGRAM IN STATISTICS/PROBABILITY

A student with a bachelor's degree (BA/BS) entering the MA Program in Statistics/Probability should satisfy the following requirements:

- I. At least thirty credit hours of graduate course work is required.
- II. No more than six credit hours of 4000 level or higher courses taken from our department or other departments at USF, may be counted towards the thirty credit hours requirement with the approval of the Program Director, provided they were not counted towards her/his BA/BS Degree Program.
- III. Each student must satisfactorily demonstrate competence in the following CORE courses. Substitution may allowed on approval by both the Program Director and Graduate Program Committee in Statistics/Probability.
 1. STA-5166-Statistical Methods I
 2. STA-6167-Statistical Methods II
 3. STA-5326-Mathematical Statistics I
 4. STA-6326-Mathematical Statistics II
 5. STA-6208-Linear Statistical Models
- IV. Each student is recommended to select a few elective courses from the following list of ELECTIVE/SELECTIVE courses to demonstrate the depth and the breadth of her/his 21st Graduate Program with the approval by both the Program Director and GSSC in Statistics/Probability.
 1. STA-5446-Probability Theory I
 2. STA-6447-Probability Theory II
 3. STA-5526-Nonparametric Statistics
 1. STA-6746-Multivariate Analysis
 2. STA-6876-Time Series Analysis
 3. STA-6932-Survival Analysis
 4. STA-6206-Stochastic Processes
 5. STA-6392-Stochastic Dynamic Modeling
 6. STA-6877-Time Series Analysis II
 7. STA-6879-Nonlinear Time Series Analysis
 8. STA-6881-Multivariate Iterative Processes with Applications
 9. STA- Special Topics Courses
- V. Each student with:
 - (a) Non-thesis Option Degree Plan requires the student to complete at least three hours of Research Project work which is counted towards the 30 credit hours requirement
 - (b) Thesis Option Degree Plan requires the student to complete at least 6 credit hours of Thesis Research work, which is counted towards the 30 credit hours requirement.

13. A SEQUENTIAL COURSE WORK COMPLETION PLAN

We highly expect that the graduate student in the Probability/Statistics MA Program is fulfilling her/his Degree Program in timely and satisfactory manner. In order to achieve this goal, after completing the basic prerequisite course work requirement(s) (if any), we strongly recommend the graduate student to follow the core course, required course and selective/elective course requirement in the following sequential order.

1. FALL:

- STA-5166-Statistical Methods I
- STA-5326-Mathematical Statistics I
- STA-5446-Probability Theory I

2. SPRING:

- STA-6167-Statistical Methods II
- STA-6326-Mathematical Statistics II
- STA-5526-Nonparametric Statistics

3. FALL:

- STA-6208-Linear Statistical Models
- STA-6746-Multivariate Analysis
- STA-6932-Survival Analysis

4. SPRING:

- MAT-6971-Master's Thesis (Thesis Option)
- STA-6932-Research Project (Non-Thesis Option)

14. STATISTICS FACULTY

Statistics/Probability Programs are in the Department of Mathematics and Statistics. There are 5 full time tenured/tenure-track and 2 adjunct faculties in the Statistics Group. This group is very active and is internationally well-known and well-established. They are as follows.

PROFESSORS:

1. Chris P. Tsokos, Ph. D. from University of Connecticut, 1968
Distinguished University Professor and Founder and Executive of USOP
2. Kandethody M. Ramachandran, Ph. D. from Brown University, 1987

3. Gangaram S. Ladde, Ph. D. from University of Rhode Island, 1971
Founder and Editor-In-Chief, Journal of Stochastic Analysis and Applications

ASSISTANT PROFESSORS:

1. George Yanev, Ph.D.'s from University of Sofia, Bulgaria 1992 and University of South Florida, 2001
2. Wonkuk Kim, Ph. D. from State University of New York at Stony Brook, 2007

ADJUNCT PROFESSORS:

1. Rebecca D. Wooten, Ph. D. from University of South Florida, 2006
2. Alfred K. Mbah, Ph. D. from University of South Florida, 2007

RESEARCH INTERESTS:

- Dr. Chris P. Tsokos: Statistical Analysis and Modeling; Operations Research; Time Series Analysis and Forecasting Systems; Probabilistic Modeling; Ecology- Biostatistics/ Biomathematics; Quality Control Analysis; Reliability Analysis-Ordinary and Bayesian
- Dr. K. Ramachandran: Queuing Processes and Communications Networks; Delay Systems; Deterministic and Stochastic Control Problems Statistical Learning Theory; Deregulated Electricity Market Problems; Multi-agent Learning Strategies for Intelligent Process Control; Stochastic Differential Games; Game Theory Applications; Applications of Statistics; Homeland Problems; Software reliability; Micro-array Analysis; Mathematical Finance
- Dr. G. S. Ladde: Dynamic Reliability Analysis and Control; Stochastic Modeling of Dynamical Processes in Biological, Chemical, Engineering, Medical, Physical and Social Sciences; Time Series Analysis and Applications; Deterministic and Stochastic Qualitative and Quantitative Properties of Dynamic Systems; Stability Theory; Stochastic Estimation and Filtering; Deterministic and Stochastic Control and Differential Games; Multivariate/Large-Scale Systems Analysis; Hereditary Systems; Stochastic Modeling of Network Dynamics;

Multi-agent and Multi- Market/Finance; Stochastic Approximation and Statistical Analysis; Stochastic Hybrid Dynamical and Extreme Statistical Analysis

Dr. George Yanev: Branching Processes: Controlled Branching Processes, Varying Environment, and Extremes, Branching Trees; Statistics of Branching Processes, Statistical Modeling in Biology and Ecology

Dr. Wonkuk Kim: Mixture Models; Statistical Genetics; Survival Analysis; Data Mining

Dr. Rebecca D. Wooten: Statistical Analysis (Parametric and Non-parametric – Univariate, Bivariate and Multivariate); Statistical Modeling (Linear and Non-linear); Time Series Analysis (Stationary and Non-stationary); Computerized Algorithms for statistical analysis, and Research emphasizing environmental health, life science, geophysics and education, studying such topics as Hurricanes, Lightning, Rainfall, Floods, red Tide, and Volcanoes

Dr. Alfred K. Mbah: Records; Statistical Modeling; Extreme Value Theory; Missing Data Analysis

For more details about the Statistics Faculty, please see their University of South Florida web-site.

15. THE EDITORIAL HEADQUARTER OF THE INTERNATIONAL JOURNAL OF STOCHASTIC ANALYSIS AND APPLICATIONS

The Department of Mathematics and Statistics, University of South Florida is the Editorial Headquarter of the more than the quarter century old International Journal of Stochastic Analysis and Applications (JSAA). It was established in 1982. It is abstracted/indexed in Applied Mathematics Reviews, Current Index to Statistics, Geographical Abstracts (GeoAbstract), ISI CompuMath Citation Index, Mathematical Reviews Database, MathSciNet, VNITI Referativnyi Zhurnal (Abstracts Journal), Zentralblatt MATH. It is a refereed journal and it maintains its high quality refereeing process. Currently, it is bimonthly publication, and is published by Taylor & Francis Group. The students and faculty of the University of South Florida have a natural connection for the publication of their research work in the journal. For further information, please contact Professor G. S. Ladde, Founder and Editor-In-Chief or Ms. Mary Ann Wengyn, Editorial Secretary of the JSAA.

16. APPENDIX: WHAT IS STATISTICS? AND WHAT DO STATISTICIANS DO?

A WORD document of the American Statistical Association (ASA) provides answers to these questions. This is extracted from the Information Directory of the ASA. For further information, please see the website of ASA: asainfo@anstat.org