California State University, Long Beach
Master of Science in Applied Statistics

Program Summary

UNDERGRADUATE STATISTICS COURSES

- Lower Division
  - STAT 108 Statistics for Everyday Life

- Upper Division
  - MATH/STAT 380 Probability and Statistics
  - STAT 381 Mathematical Statistics
  - STAT 410 Regression Analysis
  - STAT 450 Multivariate Data Analysis
  - STAT 475 Data Analysis with SAS
  - STAT 482 Random Processes
  - STAT 484 Actuarial Science: Models
  - STAT 485 Actuarial Science: Financial Math

GRADUATE STATISTICS COURSES

- STAT 510 Regression Analysis
- STAT 520 Statistical Inference
- STAT 530 Experimental Design and Analysis
- STAT 532 Statistical Quality Control
- STAT 540 Survey Sampling
- STAT 544 Statistical Consulting
- STAT 550 Multivariate Statistical Analysis
- STAT 560 Nonparametric Statistics
- STAT 570 Statistical Simulation
- STAT 572 Computational Statistics
- STAT 574 Data Mining
- STAT 576 Data Informatics
- STAT 580 Time Series
- STAT 590 Statistical Analysis of Medical Data
- STAT 695 Seminar in Applied Statistics
- STAT 697 Directed Studies
- STAT 698 Thesis or Project

DEGREE REQUIREMENTS FOR COURSE WORK

- You must take a minimum of 30 credits including:
  - **STAT REQUIRED** Courses (3 courses, i.e. 9 credits)
    - STAT 510 Regression Analysis
    - STAT 520 Statistical Inference
• STAT 530 *Experimental Design and Analysis*

✓ **STAT ELECTIVE** courses selected from (take at least 4 courses, i.e. at least 12 credits)

  - STAT 475 *Data Analysis with SAS*
  - STAT 482 *Random Processes*
  - STAT 484 *Actuarial Science: Models*
  - STAT 485 *Actuarial Science: Financial Math*
  - STAT 532 *Statistical Quality*
  - STAT 540 *Survey Sampling*
  - STAT 544 *Statistical Consulting Data*
  - STAT 550 *Multivariate Statistical Analysis*
  - STAT 560 *Nonparametric Statistics*
  - STAT 570 *Statistical Simulation*
  - STAT 572 *Computational Statistics*
  - STAT 574 *Data Mining*
  - STAT 576 *Data Informatics*
  - STAT 578 *Time Series*
  - STAT 579 *Statistical Analysis of Medical Data*

You must take a minimum of 21 residential units at the 500/600 level, including at least 15 units of graduate courses in STAT

➢ The 600 level courses can be taken under the following rules:

  - STAT 695 *Seminar in Applied Statistics* (can be counted for up to 6 units towards 30 credits for different topics classes)
  - STAT 698 *Thesis or Project* (can take up to 6 total units for a thesis and 3 total units for a project)
  - STAT 697 *Directed Studies* (from 1 to 3 units) (cannot be counted towards 30 credits for the degree)

➢ You can take 1 elective graduate course from other department with an approval of the advisor (need to talk to the statistics graduate advisor for the course approval)

**PROGRAM PLANS**

A. **Comprehensive Exams Option:**

1) Take 3 required courses: STAT 510, 520, 530.
2) Take 7 elective STAT courses based on degree requirement for course work.
3) Pass comprehensive written examinations in two areas, Statistical Inference and Experimental design. Both examinations must be taken in the same semester at your first trial. (You are given two chances to pass both examinations)

• Student is allowed to use any calculator on the exams. Also, a sheet with designated formulas is provided.
• Previous exams are posted on [http://www.csulb.edu/~wmurray/comps/comps.html](http://www.csulb.edu/~wmurray/comps/comps.html).
• Student has two attempts given for each exam. Student has to take both exams on his/her first attempt. If he/she fails (receives a grade of below C) one or both exams on the first attempt, he/she has one more attempt to pass the failed exam(s).

B. Thesis Option:

1) Take 3 required courses: STAT 510, 520, 530.
2) Take elective STAT courses based on degree requirement for course work. (You can take STAT 698 Thesis up to 6 units total and will be counted toward 30 units)
   • Thesis form is available at http://www.csulb.edu/depts/stat/thesis_project.pdf
   • Student who wants to choose thesis option must have a grade of B or higher in all 3 required courses and an abstract must be approved by Statistics Committee.

C. Project Option:

This option is only for full time industrial employees and the project topic and data must come from the work. Student must show that the project would be beneficial to the company he/she is working. Student must get an approval from the graduate advisor.

1) Take 3 required courses: STAT 510, 520, 530.
2) Take elective STAT courses based on degree requirement for course work. (You can take STAT 698 project up to 3 units total and will be counted toward 30 units)
   • Project form is available at http://www.csulb.edu/depts/stat/thesis_project.pdf
   • Student who wants to choose project option must have a grade of B or higher in all 3 required courses and an overall GPA (major courses only) of at least 3.5. Abstract must be submitted and approved by Statistics Committee.

ADVANCEMENT TO CANDIDACY

➢ Advancement to candidacy is a step every graduate student at CSULB must take on the way to a Master’s degree. It signifies the approval by the Department and the College of a plan of study. It should be filed upon completion of at least 6 units of the program.

➢ To advance to candidacy, you must satisfy the following requirements:

   • Complete satisfactorily the Writing Proficiency Examination (WPE).

   • Be enrolled in a regular (fall or spring) session.

   • Maintain a GPA of at least 3.0. Graduate students whose GPA is below 3.0 for more than one semester will be automatically dropped from the program.

➢ When filing for advancement to candidacy, you, in consultation with the Graduate Advisor, must prepare an Approved Program of Study consisting of a minimum of 30 units of courses which satisfy
the degree requirements. You must satisfactorily complete these courses as part of the degree requirements.

- If you need to take different courses rather than the courses listed on the proved program, then you can file a Change of Approved Program Form with the Graduate Advisor.

APPLYING FOR TEACHING OR GRADUATE ASSISTANTSHIPS

- The Department of Mathematics and Statistics offers Teaching Assistantship and Graduate Assistantship (TA and GA) positions.
- Application form is available at http://www.csulb.edu/depts/math/pdfs/TAGAAplicantInformationForm.pdf
- To apply, you must have a minimum 3.0 GPA and 3 letters of reference and mail them to Department Chair.

STATISTICS FACULTY

1. **Dr. Morteza Ebneshahrashoob**, Professor
   - Areas of interest: Nonparametric Statistics, Sampling, Quality Control

2. **Dr. Yong Hee Kim-Park**, Professor
   - Areas of interest: Statistical Inference, Estimation, Sampling, Actuarial Statistics

3. **Dr. Sung Kim**, Professor
   - Areas of interest: Time Series, Computational Statistics, Exp. Design

4. **Dr. Olga Korosteleva**, Associate Professor
   - Areas of interest: Clinical Trials, Stochastic Processes, Actuarial Statistics

5. **Dr. Hojin Moon**, Professor
   - Areas of interest: Biomedical Statistics, Decision-making Algorithms, Risk Analysis

6. **Dr. Alan Safer**, Professor
   - Areas of interest: Data Mining, Multivariate Statistics, Time Series

7. **Dr. Kagba Suaray**, Associate Professor
   - Areas of interest: Survival Analysis, Density Estimation, Sampling

8. **Dr. Tianni Zhou**, Assistant Professor
   - Areas of interest: Clinical Trials, Survival Analysis