

Biostatistics

Specialized Certificate

The Field of Biostatistics

Biostatistics is the application of statistical and mathematical methods of data analysis to biology. It is an indispensable tool for improving our understanding of biological processes and has a direct impact in ensuring the safety and efficacy of pharmacological and biotechnological products. It encompasses experiment design; collecting, summarizing, and analyzing data; and interpreting results.

The Job of a Biostatistician

Many biostatisticians work analyzing data for clinical trials. In addition to clinical trials, biostatistics jobs frequently cross into data analysis and quality control assurance. Biostatisticians often work closely with other professionals such as economists, insurance analysts and marketing specialists to develop policies, conduct market research, implement cost controls, and develop of new computer programs.

Program Overview

This specialized certificate emphasizes the application of statistical techniques to the analysis of clinical data. The course sequence begins with basic statistical concepts in biostatistics and then moves to more advanced topics, including the use of SAS, the dominant software for statistical analysis in the field. Upon completion of this program, graduates will have gained a thorough understanding of the various aspects of biostatistics and how it can be applied to a variety of industries and professions. Graduates will have the skills necessary to apply for positions as junior biostatisticians.

Program Benefits

- Practical, comprehensive hands-on training
- Developed and taught by seasoned biostatisticians and industry professionals
- Program can be completed in less than a year
- Immediately applicable skills
- All required courses are taught online for flexibility and ease of access
- Industry-neutral curriculum allows you to apply knowledge to your field of interest

Key Program Topics

Along with SAS programming, students will learn commonly used statistical methods, such as:

- Simple and multiple linear regression
- Simple and multiple logistic regression
- Survival analysis
- Analysis of variance (ANOVA)
- Analysis of covariance (ANCOVA)
- Proportional & nonproportional hazards models
- Power and sample size analyses

Program Details

Prerequisites

There are no prerequisites required to enroll in the certificate program, however we do highly recommend you have a strong mathematical foundation prior to taking any of the required courses. A life science or medical health background is also recommended, but not required.

Length

Most students complete the program in one year by taking one course per quarter for four consecutive quarters. You have up to five years to complete all requirements for the certificate.

Cost

The program costs approximately \$3,335 including the certificate fee, course fees and required textbooks. This is an *estimate* of the full cost of the program. This estimate may vary based on a variety of factors. The cost of attendance does not include parking, transportation, or personal expenses. *All estimated costs are subject to change*; current fees and textbooks are listed [on our website](#). Program fees are paid on a per-course basis, when you enroll in a course.

Requirements

There are four required courses in the [Biostatistics program](#). You should take the program courses in the order listed in the chart below, which shows when and in what format courses are offered. We recommend beginning in Fall or Spring if you plan to take one course per quarter.

- You may take [Biostatistics](#) and [SAS Programming I](#) concurrently. If you choose to do this, we recommend beginning in Winter or Summer.
- You must complete both [Biostatistics](#) and [SAS Programming I](#) prior to enrolling in [Biostatistical Methods I](#).
- [Biostatistical Methods I](#) must be completed prior to enrolling in [Biostatistical Methods II](#).

Course Title	Course No.	Units	Course Offered			
			Fall	Winter	Spring	Summer
Required Courses (All four courses required and should be taken in the order listed below.)						
Biostatistics	BIOL-40049	3	Online	Online	Online	Online
SAS Programming I: DATA Step and PROC Fundamentals	BIOL-40190	3	Online	Online	Online	Online
Biostatistical Methods I: Linear Regression and ANOVA	BIOL-40315	3	Online		Online	
Biostatistical Methods II: Logistic Regression and Survival Analysis	BIOL- 40316	3		Online		Online

Electives

There are no elective courses in this program.

Additional Learning

If you would like to further your learning, after completing the program, we recommend you take the [CDISC Standards for Clinical Data](#) course or the [SAS Programming certificate program](#).

Frequently Asked Questions

About the Certificate

How do I apply to the certificate Program?

STEP 1: If you have a My Extension account, skip to Step 2. If you do not have a My Extension account, go to myextension.ucsd.edu, click "Create an account" on the right side of the page, and follow the instructions to create an account. Once you have a My Extension account, continue to Step 2.

STEP 2: Click on the "Apply Now" button on the [certificate page](#). Complete the required fields on the application. Then click Save Your Work button. Once you have saved the application, the "Submit" button will appear. Click the "Submit" button to submit your application for review and consideration. Once submitted, your application cannot be changed. You can track the progress of your application at [My Extension](#).

Is there an application fee for the certificate program?

Current application or certificate fees, if any, are listed under the "Apply Now" button on the [certificate page](#) on our website.

Can I register for the certificate program at any time?

Yes, you may enroll in the program at any time. However, it is recommended that you enroll as soon as possible. The program curriculum may be updated at any time; if certificate requirements change, you must adhere to the curriculum *at the time of your enrollment into the certificate*. Enrolling in the certificate also gives you access to quarterly, personalized enrollment reminders from the program manager.

Can this certificate program be completed entirely online?

Yes! This program is designed for you to take it online in the convenience of your own home or office. Some courses may also have in-class options, but you can complete all program requirements online. For online courses, all assignments, tests, and quizzes can be completed online and submitted through [Canvas](#), our online learning platform.

How long do I have to complete the certificate?

You officially have five years from when you begin taking courses in the program to complete all requirements for the certificate.

If I already have the skills taught in one of the courses, can I skip that course?

If you have taken a course from an accredited university covering the learning objectives of a program course, you may be able to transfer your previous coursework to Division of Extended Studies. If you have not taken a course elsewhere, but already have the skills covered in a course, you may be able to substitute an alternate Division of Extended Studies course in its place. Please contact the program representative at appliedscience@ucsd.edu for more information.

Is this certificate program open to non-California residents?

Yes, the program is open to non-California residents, including non-US residents. The tuition is the same for all students. If you have questions about how enrolling in courses may or may not affect your visa status, please contact our International Department at ipinfo@ucsd.edu or (858) 534-6784.

If I work full-time, will I still be able to complete this program?

Yes. Our programs are designed to be working-student friendly and most of our students are working professionals. The courses vary between two and three units, which amount to approximately 18-20 hours of class time for a two unit course and 27-30 hours of class time for a three unit course.

Is the program accredited?

UC San Diego is accredited by the Western Association of Schools and Colleges (WASC). UC San Diego Division of Extended Studies – like all other UC San Diego schools, colleges, and departments – is accredited by WASC through the University. All courses and certificate programs offered by UC San Diego Division of Extended Studies have been developed and are administered in accordance with Division of Extended Studies policy and the regulations of the Academic Senate of the University of California.

Will this program prepare me for a certification exam?

This program is not aligned with any one certification exam. The program is designed to provide students with knowledge that will make them valuable in the workforce.

How do I get my certificate once I have completed the requirements?

When you have paid your certificate fee and successfully completed all program requirements, you will need to request an audit by Student Services. To request an audit:

- In your [My Extension](#) account, click on "My Courses."
- On the right side of the page under "My Certificates," click on the name of the certificate.
- On the right side of the page under "Tools," click on "Request Certificate Audit."
- Complete and submit the form that appears.

Once you have formally submitted your audit request, your certificate will be mailed to the address we have on file for you within ten business days.

Do you provide job or internship placement?

No, we do not currently offer job placement assistance, internships, or career services assistance

Is financial aid available?

Yes, there are various financial aid options available to students. Please contact our Student Services Department at unex-reg@ucsd.edu or (858) 534-3400 for more information

- UC San Diego Division of Extended Studies offers continuing education loans through UC Approved Lenders. Each institution offers low competitive interest rates and flexible payment options. You are also encouraged to contact your personal financial institution about possible lending solutions. Direct links to UC Approved Lenders can be found on our website's [Financial Resources](#) page.
- The Employment Development Department (EDD) provides a comprehensive range of employment and training services in partnership with state and local agencies/organizations. More information is available on their website at edd.ca.gov.
- Career Centers Located throughout San Diego County offer their communities comprehensive employment and training services benefiting both business and job seekers. More information is available on their website at workforce.org.
- Please click [here](#) for information about Veteran's Benefits.
- Free Application for Federal Student Aid (FAFSA) funds are limited to degree programs only, and cannot be used for courses or certificate fees at UC San Diego Division of Extended Studies.

About the Courses

When does course enrollment open for each quarter?

Our classes post to our website and become open for enrollment approximately two months prior to the new quarter starting. If you'd like to get an email reminder you can sign up for our newsletter(s) in [My Extension](#), under the "Preferences" tab.

When should I enroll in a course?

We recommend enrolling as soon as possible, as occasionally classes will reach capacity.

Once I have enrolled in a course, when will I get online access to it?

If you have enrolled at least three days before the course begins, you will have access starting on the first day of class. You should receive an email from Student Services with instructions for how to login to the course. If you have enrolled on or after the start date of the course, you will have access to the course within one business day.

When does enrollment for a course close?

Enrollment in a course may be closed for one or more of the following reasons:

- The course is at capacity. If the course is at capacity you will only be able to join the waitlist. If space becomes available in the course, students on the waitlist are contacted in the order they joined the waitlist.
- The course has progressed to a point where students will no longer be able to make-up missed work and be successful in the course.
- The course is cancelled due to low enrollments.

For all three of these reasons we recommend students enroll early in the courses they are interested in.

When is the refund deadline for courses?

The refund deadline for courses in this program is typically one week after the start of the course. This allows you to enroll in a course and participate in the course for approximately one week to determine if the course is a good fit. Then, if needed, either you may either transfer your enrollment to a different course or submit a drop request. The exact refund deadline for each section is listed in the section notes.

What are the grading options for courses?

You can take courses for one of three options: Letter Grade, Pass/No Pass, or Not for Credit. If you are taking a course towards a certificate you *must* complete your courses for credit (i.e. Pass/No Pass or Letter Grade) and receive a C-/Pass or higher grade. Grades below a C-, No Pass, and Not for Credit will *not* count towards certificate requirements.

What kind of credit do I earn?

The courses in this program are post-baccalaureate, professional-level, credit bearing courses. Credit earned in these courses may lead to the award of a formal certificate by UC San Diego Division of Extended Studies or may be applied toward an academic degree or professional credential, *subject to the approval of the receiving institution*.

If you wish to transfer credit, it is your responsibility to confer with the receiving institution before enrolling, as each individual academic institution decides whether or not to accept Division of Extended Studies' credits.

Are courses transferrable?

UC San Diego Division of Extended Studies is not a degree granting institution, however many UC San Diego Division of Extended Studies courses can be transferred to other colleges or universities. The transferability of credit is determined solely by the *receiving* institution. You should discuss how your individual courses will transfer with the Office of the Registrar at the receiving institution *prior to enrolling*.

Can I take a course without registering for the certificate?

Yes, you may take any course in this program without registering for the certificate, provided you have fulfilled any and all prerequisites for the course.

How long is each course?

Two unit courses run for approximately 6-7 weeks; three unit courses run for approximately 9-10 weeks. For exact course dates of upcoming sections, visit the webpage of the course you are interested in taking on [our website](#)

When is each course offered?

Please visit the course page on [our website](#) to see when courses are typically offered. You can also see a full program schedule by clicking on the "Print Program Schedule" button under the "Courses" section on [the certificate page](#) or on page 2 of this document.

How many hours can I expect to spend studying outside of class time?

Each student has their own learning style so this can vary greatly. As a rule of thumb, expect to spend an average of two hours studying for every hour you spend in-class. For online courses, students should plan to spend approximately 8-10 hours per week viewing lectures and completing coursework.

How are the online courses formatted?

The online courses are asynchronous: they have a start and end date but all the lessons are uploaded on [Canvas](#), our online learning management system, so you can learn at your own pace. However, please be aware that you may have weekly assignments, quizzes, or tests that are due on specific dates. Please [click here](#) to view a sample course tour to see if this format suits your learning style.

For online courses, will I ever need to attend in person?

The online courses in this program are offered entirely online. All course requirements, including lectures, tests, quizzes, and assignments will be completed online. You will not be required to attend in person.

What are the instructors' credentials?

The program courses are taught by seasoned professionals and overseen by an advisory board of leaders in the field. You can view the advisor list under the "Advisors" section on [the certificate page](#). You can find information about a course instructor, including a biography and credentials, on the course page.

How do I communicate with a course instructor if I have a question during the course?

Each instructor has his/her own preferred method of communication and response policy, which will be detailed on the course syllabus. However, most instructors utilize email or the discussion board and will respond within 24-48 hours.

Will I get any hands-on experience in the program?

Most courses combine theory with hands-on exercises. For more information about practical experience in any course, visit the course page on our website.

What are the required textbooks for a course?

Instructors will post the current text requirements and recommendations on the course page on our website. Please note the textbooks requirements are subject to change every quarter and different instructors may require different books, even if they are teaching the same course in the same quarter, so be sure to check the textbook requirements *for the section in which you are enrolling*.

Will I be able to order the required textbooks before the class begins?

Yes, you can order the book(s) any time after enrolling in the course. You may order books through the campus bookstore or online retailers, such as Amazon.com.

What software is used for courses and what are the system requirements?

Each course has different software requirements. Please see the course page on our website for details. If no software is listed, you will not be using any.

After I enroll in a course, how can I retrieve a receipt or enrollment verification for my records?

Login to your [My Extension](#) account and select "Documents" as the top of the page

How will I receive my final course grade?

Once the course is completed, the instructor has 10 business days to submit your grades. Once grades have been posted, you can view and print them from your [My Extension](#) account.

What if I am having trouble with Canvas or My Extension?

Please contact Student Services at unex-reg@ucsd.edu or (858) 534-3400 if you experience any issues logging in to any of our systems.

For More Information

For program specific questions, please visit [the certificate page](#) on our website or contact a program representative at appliedscience@ucsd.edu. For administrative questions, please contact our Student Services Department at unex-reg@ucsd.edu or (858) 534-3400