HEALTH DATA SCIENCE (CERTIFICATE)

Visit program website. (https://epibiostat.ucsf.edu/certificate-health-data-science/)

Degree Offered: Certificate
Program Leadership:
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Program Description

The Certificate in Health Data Science (CiHDaS) is one-year program, ideal for those already working in the biomedical or pharmaceutical industries, focused on applying data science, biostatistics, machine learning, and epidemiological thinking in clinical research settings.

The CiHDaS program is intended for:

- Quantitative science learners interested in studying data science with a focus on biomedical applications.
- Numerically able biomedical scientists interested in applying data science methods in clinical, epidemiological and biological sciences.

Data science and biostatistical tools are increasingly necessary to accommodate the growing emphasis on precision and evidence based-medicine, the widespread analyses of electronic health records, and the improved capabilities to collect and store massive datasets.

We also offer a Master's of Science in Health Data Science (MiHDaS) (https://epibiostat.ucsf.edu/masters-degree-health-data-science/) as a two-year program that includes a capstone research project, teaching and industry experience.

Admission Requirements

- Bachelor's degree (BA/BS) or the equivalent from an accredited institution in a quantitative or biomedical science, or related field, with a minimum grade point average of 3.0.
- In addition to meeting the same admission requirements domestic students must meet, international applicants must also demonstrate proficiency in English. There are two ways to meet this English language proficiency requirement, which are outlined on the Division of Graduate Education and Postdoctoral Affairs's International Admission Requirements (https://graduate.ucsf.edu/admission/intl-admission-requirements/) webpage. Please note that the Health Data Science program minimum internet based TOEFT iBT score is **100**.
- Transcripts
- Three letters of recommendation
- Resume or curriculum vitae
- Statement of Purpose
- Personal History Statement

Learning Outcomes

To complete the program, scholars must satisfy program objectives, which are to:

- Learn a broad set of data science research methods and the techniques needed for the application of data science across biomedicine applications and research.
- Gain understanding of key issues that are particularly pertinent to the health sciences and evidence-based medicine, such as bias, confounding, interpretability, and causality.
- Plan and implement one or more health-related data science analysis projects.
- Analyze, interpret, and present data science research results.

Degree Requirements

- All core courses and required activities taken and passed with a grade C or higher.
- Maintain a cumulative GPA of 3.0 or higher (equivalent to a B average).

Core Courses

Course	Title	Units
Summer		
DATASCI 202	Opportunities and challenges of complex biomedical data (Opportunities and challenges of complex biomedical data)	3
DATASCI 213	Programming for Health Data Science in R (Programming for Health Data Science in R)	2
	Units	**5**
Fall		
BIOSTAT 200	Biostatistical Methods in Clinical Research I	3
DATASCI 214	Programming for Health Data Science in R II (Programming for Health Data Science in R II)	3
DATASCI 217	Introduction to Python and Data Science Tools (CiHDaS students only required to take 1 unit version)	1
DATASCI 220	Data Science Program Seminar I	1
EPIDEMIOL 203	Epidemiologic Methods	3
	Units	**11**
Winter		
BIOSTAT 208	Biostatistical Methods II	3
DATASCI 216	Machine Learning in R for the Biomedical Sciences (Machine Learning in R for the Biomedical Sciences)	3
DATASCI 220	Data Science Program Seminar I	1
	Units	**7**
Spring		
BIOSTAT 209	Biostatistical Methods III	3
DATASCI 220	Data Science Program Seminar I	1
EPIDEMIOL 201	Responsible Conduct of Research	0.5
	Units	**4.5**
	Total Units	**27.5**