PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE

USC SCHOOL	Viterbi School of Engineering
ACADEMIC DEPARTMENT	Computer Science
GRADUATE PROGRAM	M.S. Healthcare Data Science
POST CODE	1731
TERM EFFECTIVE DATE	Spring 2025

PROGRAM DESCRIPTION
A brief description of the graduate program.

Students complete a set of core courses to provide a foundation in data science and health, and choose electives to optimize their preparation for their preferred career path and unique professional opportunities. Students will learn a range of data science skills such as developing scalable data systems, using state-of-the-art software and infrastructure for data science, designing data analyses with statistical methods, applying machine learning and data mining techniques, designing effective visualizations, and working in multi-disciplinary data science teams. On the health side, students will be integrated into teams working with medical students in healthcare settings as well as courses on clinical workflow and medical technology systems such as image acquisition systems and other healthcare informatics systems.

COMMON BACHELOR DEGREE PROGRAM PATHWAYS
A list of common bachelor's degrees that undergraduate students pursue in advance of pursuing a progressive degree option with this graduate program. Some programs are restricted to certain majors while others are open to all students.

Computer Science and other Engineering Majors, especially BME.	Students in these majors are directly eligible to apply for the HCDS PDP.
Math, Science, Computational, and Biological/Health Science majors from Dornsife	Most students in these majors are directly eligible to apply for the HCDS PDP.

PREPARATORY UNDERGRADUATE COURSES
A list of courses at the undergraduate level that prepare students for the graduate program. Required coursework is listed first, followed by recommended courses. If not applicable, this section will be blank.

Dept. Prefix - Course #	**Course Title**	**Required or Recommended**	**Units**
MATH 125	Calculus 1	required	4
	Choose ONE of the Statistics courses below	One of these courses is Required.	
BUAD 310	Applied Business Statistics		4
BUAD 312	Statistics and Data Science for Business		4
MATH 407	Probability Theory		4
EE 364	Intro to Probability and Stats for Electrical Engineering + CS		4

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UNDERGRADUATE COURSES USED TO REDUCE GRADUATE LEVEL UNITS

A list of undergraduate level courses that may be used to reduce the number of graduate level units required for the graduate program. If there are none, that is specified instead.

Dept. Prefix - Course #	Course Title	Units
	Computer Science majors or other undergraduates with a strong programming background may have DSCI 510 waived.	
ITP 115	Programming in Python	2
ITP 116	Python for Programmers	2

CORE GRADUATE PROGRAM REQUIREMENTS (# units required)

A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.

If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk (*) and the exception is explained in the "Department Notes" section at the end of this course plan template.

Dept. Prefix - Course #	Course Title	Units
DSCI 510*	**Principles of Programming for Data Science**	**4**
DSCI 549*	**Introduction to Computational Thinking and Data Science**	**4**
DSCI 550*	**Data Science at Scale**	**4**
BME 527	**Integration of Medical Imaging Systems**	**4**
BME 528	**Medical Diagnostics, Therapeutics and Informatics Applications**	**4**
	CS majors and those with programming exp. can waive DSCI 510	
	CS majors should replace DSCI 549 with DSCI 551	
	CS majors should replace DSCI 550 with DSCI 552	

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PRE-APPROVED ELECTIVE COURSEWORK

Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required of elective coursework.

12	**TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE**
12	**TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE**

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

32	**TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE**
4	**TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)**
28	**MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE**

NOTES FROM THE DEPARTMENT

This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

Students pursuing an undergrad degree in either Computer Science or Data Science may replace DSCI 549, 510, and 550 with DSCI 551, 552, and DSCI elective. They only need a total of 3 DSCI courses and 28 units to complete the degree.

Students outside the CSCI or DSCI program will complete 28-32 units. Students may waive DSCI 510 if they have taken ITP 115 or ITP 116. In which case, they will take DSCI 549, DSCI 550, and one elective.

Effective Fall 2021, BME 527 and BME 528 replaces BME 501 and BME 566ab respectively in the core requirements

Please note that, once your course plan has been approved, signed and submitted, no changes to the PDP graduate course start term may be made for students applying to Computer and Data Science programs.

Kelly Goulis	4/18/2025 | 10:28:43 PM PDT
Authorizing Dean's Name	**Date Approved**

Senior Associate Dean, Viterbi School of Engineering

Authorizing Dean's Title