

Cal State East Bay Program Curriculum Map Template: BS in Data Science

Approved by EEC October, 2018

Assessed ILOs							
PLOs	R/E	PLO 1 Acquire, organize, clean and manage data from multiple sources, including massive data sets, open source and free data sources.	PLO 2 Apply appropriate statistical models, data mining tools, and machine learning algorithms to gather insights from data and make decisions.	PLO 3 Communicate to stakeholders, the results and implications from data analyses using effective tools such as descriptive statistics, data visualizations and dashboards.	PLO 4 Understand data issues such as privacy, ethical significance and policy considerations.	PLO 5 Recognize modern applications of data sets, their limitations and learn best practices for reproducible research.	PLO 6 Distinguish applications of DS in various fields.
Course number and title							
DATA 130: Data Science Profession	R			I	I	I	I
STAT 215: Intro to Data Science	R	I	I	D		I	
DATA 205: Math for Data Science II	R			D	D	D	
STAT 312: Data Analysis with Python	R	D	I				D
STAT 330: Statistical Methods	R		D	D		D	
STAT 340: Data Science Ethics	R				D	M	D
CS 200 or C300: Database structures for Everyone	R	D				D	

STAT 432: Linear and Logistic Regression	R	M (A)	M (A)				
STAT 451: Data Visualization	R	D		M			
STAT 452: Statistical Learning	R	D			M	M(A)	
STAT 492: Capstone Project	R	M	M	M (A)	M(A)		M (A)

Guidelines for Completing Program Curriculum Map

Curriculum map: A curriculum map is graphic illustration (typically a table or matrix) that shows where learning outcomes are fostered in a program. It is developed by program faculty to chart the relationship between the program outcomes (PLOs) and what is taught in the core required courses. It focuses attention on how what is being taught relates to stated outcomes and helps faculty create a program assessment plan that provides information of the attainment of learning outcomes at both the program and course level.

The curriculum mapping process helps determine any gaps or unintended repetitions by charting what is planned and what is actually occurring in individual courses and across the program as well as determine whether the program is addressing all learning outcomes in a balanced way, or whether there are gaps or an overemphasis on any particular learning outcome. The curriculum map also makes it easier for faculty to check the sequencing of courses throughout the program to assure students the opportunity to achieve mastery of the program's PLOs.

PLOs: Write out (or summarize) each program learning outcome.

Assessed ILOs: Identify the ILO to be assessed and the measurement rubric for each PLO that is aligned to an ILO. [Senate policy](#) calls for each program to align its PLOs to a minimum of two ILOs in individual courses and provide student work from a class assignment for secondary assessment of the aligned courses according to the ILO Long Term Assessment plan. ILOs should be on the same map as the PLOs and courses.

ILO	Measurement Rubrics
1.Communication	Written Communication, Oral Communication, Information Literacy
2. Thinking	Critical Thinking, Quantitative Reasoning
3. Diversity	Diversity, Social Justice
4. Sustainability	Sustainability, Social Responsibility

5. Collaboration	Collaboration and Teamwork, Leadership
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Course number and title: Provide a course number and title for all required and elective courses.

R/E: Indicate if required (R) or elective (E) course

I/D/M: Indicate in which course(s) each PLO is **I** introduced, **D** developed, or **M** mastered in all required courses. In addition, indicate where each PLO will be **(A)** Assessed for mastery. All required courses must align with at least one PLO, and all PLOs must align with at least one required course. While assessment of course-level student learning occurs in all courses, for the purpose of providing students with feedback and evaluation, in courses where the PLO is mastered, the Committee on Academic Planning and Review (CAPR) requires that there will be assessment of that mastery for the purpose of program assessment. Mastery in a PLO may be assessed in one or in several courses.

I = Introduced

D = Developed and practiced with feedback

M = Demonstrated at the mastery level appropriate for graduation

(A) = Assessment of mastery (this will be included in your five-year assessment plan)

Reviewing a Curriculum Map

Complete

- ☐ Are all required courses in a program included in the curriculum map?
- ☐ Does every required course indicate the level of development (I, D, M)?
- ☐ Are there any gaps- important outcomes addressed by too few course?

Aligned

- ☐ Do course student learning outcomes align with the program outcomes they are linked to?
- ☐ Does each program align to at least two ILOs? (May align to more)

Distributed

- ☐ Are any single courses trying to address too many of the program learning outcomes?
- ☐ Are the outcomes addressed (I,D,M) in a balanced way that makes sense for that program?
- ☐ Are any single courses addressing an outcome on too many levels?

Assessable

- ☐ Are the courses where mastery is assessed have an associated assessment measure that will allow programs to know if students have achieved that proficiency?