CALIFORNIA POLYTECHNIC STATE UNIVERSITY
San Luis Obispo, California

DATA 451 - Data Science Capstone I

Fall 2018

I. Catalog Description

DATA 451 Data Science Capstone I (4)

Working with clients to develop data-driven solutions for systems to be constructed in DATA 452. Specification and design requirements, elicitation techniques, research and data gathering methods; project planning, time and budget estimating; project team organization. Ethics and professionalism. 2 laboratories. Prerequisite: DATA 401.

II. Required Background and/or Experience

Prerequisite: DATA 401.
Basic knowledge of statistics and the use of computers.

III. Expected Outcomes

The student should:

A. Articulate design specifications and criteria by which they are to be measured
B. Solve a real world problem involving collection, management and analysis of data
C. Develop and implement an appropriate data acquisition and management strategy for a real world problem considering ethics, security, and privacy
D. Effectively contribute one's own disciplinary knowledge on a team, as well as locate and evaluate new information
E. Effectively communicate with others in a team, fulfilling one's individual role in the project and in interfacing with customers

IV. Text and References

Recommened Texts: Varies by instructor

V. Minimum Student Materials

USB flash drive.

VI. Minimum University Facilities

Availability of computing facilities.

VII. Expanded Description of Content and Method

	Content	Number of lectures
A.	**Introduction**	**4**
1.	Capstone project	
B.	**Requirements Elicitation**	**4**
C.	**Data and Model Elicitation**	**4**
D.	**Data Acquisition and Management Strategy**	**4**
E.	**Use Case Determination**	**4**
F.	**Selection of Problem Solving Approach**	**8**
G.	**System Architecture Design**	**4**
H.	**User Experience and Information Visualization**	**4**
I.	**Presentation of Information to Customer**	**4**
	Total	**40**

Method

Largely lecture with computer demonstrations of methods and problems, class discussion, supervised computer lab work and in-class exercises. Material from references and additional problems supplement the text.

VIII. Method of Evaluating Outcome

Problem and programming homework assignments, examinations, and projects.