

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

ACADEMIC SENATE

ACADEMIC PROGRAMS COMMITTEE

REPORT TO

THE ACADEMIC SENATE

AP-007-190

New Minor in Data Science

Academic Programs Committee

Date:

Executive Committee  
Received and Forwarded

Date: 04/22/2020

Academic Senate

Date: 05/06/2020  
First Reading

## BACKGROUND:

The proposed Minor in Data Science from the Department of Computer Science is open to all undergraduates in any major at California State Polytechnic University, Pomona. The program offers a core foundation in data science and trains students in competencies to work with big data using computational and statistical techniques and tools as well as applying models and algorithms. The program engages students in the professional practice of data science with job titles such as data scientist and data analytics. The program promotes interdisciplinary studies by applying data science concepts to a broad range of disciplines including but not limited to science, engineering, business and social sciences. The proposed new 29-unit minor contains 9 units of foundation courses in math, statistics, and programming, 9 units of core courses in data science, 9 units of elective courses from different disciplines (engineering, business, GIS, and computer science), and 2 units of senior project courses. Three new CS courses will be proposed to support this minor.

## RESOURCES CONSULTED:

Department Chairs

Associate Deans

Dr. Kamran Abedini, Chair of Industrial and Manufacturing Engineering Department

Dr. Daisy Tang, Chair of Computer Science Department

Dr. Berit Givens, Chair of Mathematics and Statistics Department

Dr. Dorothy Wills, Chair of Geography and Anthropology Department

Dr. Drew Hwang, Chair of Computer Information Systems Department

## DISCUSSION and RECOMMENDATION:

The Computer Science department proposed this new Data Science minor, which is based on a three-level modular design – level 1 courses are data science foundations on mathematics, statistics, and programming; level 2 courses are data science core classes on theory; and level 3 courses are inter-disciplinary elective courses in computer science, GIS, engineering, and business etc. The proposed minor may greatly enhance students' data related competencies and is well in line with the direction of future societal needs in such talents.

All department chairs and associate deans were consulted. Further, consultation requests were sent to chairs of Computer Science, Computer Information Systems, Geography and Anthropology, Mathematics and Statistics, and Industrial and Manufacturing Engineering departments, because these departments offer courses that would be included in the minor. The AP committee received two comments from Computer information Systems Department faculty – 1. The potential pre-requisite issue for the CIS electives used at level 3 inter-disciplinary electives; 2. The potential impact on CIS course offerings due to the rapidly increasing demand on CIS courses. After further consultation with both CS and CIS department chairs, the AP committee recommends keeping of the CIS electives in the newly proposed Data Science minor as it is expected that the new DS minor students who take CIS courses will be mainly from CIS department and the

prerequisites for the included CIS courses should have been met, hence the impact on CIS course demand should also be minimal. For other non-CIS students who are interested in this new Data Science minor, they will select other interdisciplinary electives depending on their backgrounds. No other comment was received.

The Academic Programs Committee recommends approval of the Minor in Data Science.