

**Departmental BPC Plan  
Computer Science and Engineering Department  
University of California Merced**



**Effective dates of Plan:** 10/23/2024 - 10/23/2026

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**1. Context**

University of California Merced (UCM) is the first public American student-centered research university built in the 21<sup>st</sup> century, currently classified as “R2: Doctoral Universities – High research activity.” UCM has been designated as a Hispanic-serving institution (HSI) by the US Department of Education since 2010. As of Fall 2023, the student population in the Department of Computer Science and Engineering (CSE), which is hosted in the School of Engineering (SOE), is shown to the right. In this document, URG refers to people who identify as African American, Black, Hispanic, Latinx, Native American/Alaskan/Hawaiian, Pacific Islander, and/or Indigenous.

Level	Undergrad students			Grad students			
	Total	URG	Women	Total	URG	Women	Domestic
<u>UCM</u>	8,373	59%	47%	775	21%	42%	60%
<u>SOE</u>	2,692	50%	19%	283	14%	31%	42%
<u>CSE</u>	<b>1,383</b>	<b>41%</b>	<b>18%</b>	<b>93</b>	<b>&lt;5%</b>	<b>20%</b>	<b>19%</b>

CSE has a lower percentage of students from URG, Women, and Domestic compared to both SOE and UCM overall. The gap increases quite significantly for graduate Women and students from URGs. Moreover, only 19% of the CSE graduate students are Domestic, compared to 42% and 60% in SOE and UCM, respectively. In terms of the 4-year graduation rate, CSE undergraduate students in the Fall 2019 cohort performed similarly to those in SOE, but significantly worse than UCM overall, across all the populations. The attrition rate for CSE undergraduate students is at least 9% higher than in SOE and as much as 31% higher than UCM for Women. In fact, we observe that CSE students, especially Women, either graduate in 4 years or drop out of the program altogether.

Undergrad students	4-year graduation rate			Attrition rate		
	<u>UCM</u>	<u>SOE</u>	<u>CSE</u>	<u>UCM</u>	<u>SOE</u>	<u>CSE</u>
All	51%	30%	<b>32%</b>	39%	54%	<b>62%</b>
<u>URG</u>	49%	26%	<b>26%</b>	39%	56%	<b>66%</b>
Women	56%	25%	<b>30%</b>	38%	57%	<b>69%</b>

**2. Goals, Activities, and Measurement**

**G1 Data Collection:** Annually, collect and report the enrollment, retention, graduation rates, and the survey results of the CSE undergraduate students to understand the effect of various interventions and activities.

- A1a [**CSE Dept. chair**]: Faculty can work with the student affairs staff and data analysts to gather data every semester on student enrollment, retention, and graduation by race and gender, including: (1) enrollment in pipeline courses; (2) DWF rates and grade data from early courses; (3) students who have officially entered or left the CSE major.

- A1b [**Rusu**]: Participate in data collection efforts including CRA's Data Buddies and NCWIT Data Report to better understand CSE trends over time.
- A1c [**Rusu, Jeon, Gonzalez**]: Analyze collected data to identify and understand demographic differences in admission, persistence, and outcomes.
- A1d [**CSE Dept. chair**]: Devote one faculty meeting every year to discussing results and plan for addressing any concerns. The faculty coordinator will give a presentation that summarizes the collected data and provides actionable items.
- M1: Data collected and visualizations produced.

**G2 Recruitment of Undergraduates:** Increase the percentage of Women and students from URGs enrolled in CSE to match or exceed the percentage in SOE by 2027.

- A2a [**Kyrilov**]: Faculty engage in outreach to local high schools and community colleges by organizing workshops, participating in judging, etc.
- A2b [**Gonzalez**]: Develop and teach an annual 1-week CS4ALL Summer Code Camp that emphasizes careers in computing and preparation for college in order to recruit local high school students (emphasis on recruiting Women and students from URGs).
- A2c [**Chandrasekhar**]: Support transfer students (which include a high percentage of students from URGs) by teaching a yearly Bridge course targeted at UCM transition.
- M2: Number of faculty/students who participate, schools targeted/students come from, number of students who apply to the CSE program.

**G3 Retention of Undergraduates:** Decrease the overall attrition of CSE students to similar or better levels than SOE. In particular, decrease the attrition rate for CSE Women and students from URGs to 60% by 2027.

- A3a [**Huang, Su, Tang**]: Adopt inclusive student-centered learning practices to improve student outcomes by scheduling faculty consultations and classroom visits by CETL and SATAL staff to help with course design, delivery, and assessment.
- A3b [**CSE Dept. chair, Pan, Gonzalez**]: Enhance the advising and communication between the CSE faculty and the various UCM student clubs, including ACM, NSBE, SWE, SHPE, etc., by having faculty attend at least one club event every semester.
- A3c [**Jeon, Pan**]: Foster the creation and mentoring of an ACM-W chapter at UCM.
- A3d [**CSE Undergraduate Committee**]: Create a CS B.A. degree from the existing CSE B.S. degree by decreasing the engineering component in order to keep struggling students in the program. The transition between the two degrees will be streamlined.
- M3: DWF, retention rates, transitions between degrees, and time to graduation.

**G4 Graduate Recruitment:** Increase the enrollment of Domestic graduate students overall, and Women and students from URGs in particular, until they match or exceed the SOE percentage.

- A4a [**Arif**]: Faculty can participate in the UC-HBCU program which connects UCM faculty to students at HBCUs via research opportunities.
- A4b [**Chandrasekhar, Newsam**]: Design a 4+1 M.S. degree in CSE with the goal of attracting Domestic undergraduate students from URGs to graduate education.
- M4: Number of applications, enrollment numbers for the 4+1 M.S. degree.