

Departmental BPC Plan
Department of Electrical and Computer Engineering (ECE)
Texas A&M University (TAMU)

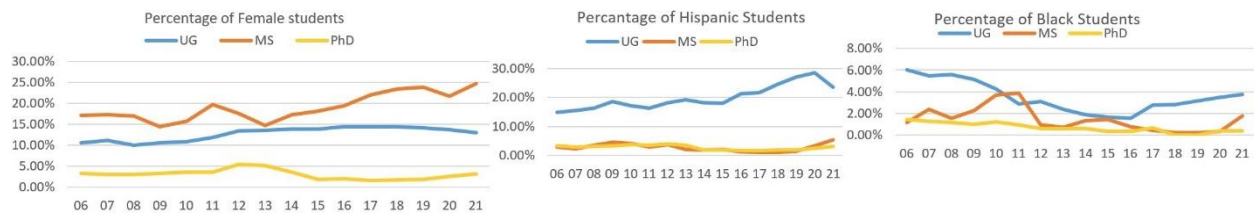


Effective dates of Plan: 04/04/2022- 04/04/2024

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1. Context & Data

TAMU (with enrollment of 73,284 in Fall 2021) is one of the largest universities in the US. The College of Engineering (CoE) is the largest college on TAMU’s College Station campus and the ECE Dept (with 2,060 students) is the 2nd largest in the CoE. ECE offers two undergraduate degrees: one in Electrical Engineering (EE) and another in Computer Engineering (CE). Texas’ graduating high school class of 2018 is roughly half male and half female, 48.8% Hispanic, 30% white and 12.5% Black. As of Fall 2020, TAMU is 47.1% female, 22.5% Hispanic, 54.5% white and 3.3% Black. ECE undergraduates are 13.1% female, 23.6% Hispanic, 3.7% Black, and less than 1% American Indian, Alaska Native, Native Hawaiian, and/or Other Pacific Islander in Fall 2021. According to TAMU Disability Services, ECE currently has 91 students with disabilities. ECE’s undergraduate Black enrollment has been going up in the past five years after a steady decline from 2006 to 2016. ECE’s undergraduate Hispanic population went down from 2020 to 2021. In Nov. 2020, CSE and ECE students formed the Aggie Hispanics in Computing (AHIC) student affinity group (see <https://www.ahic-tamu.org>).



	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
UG Black	6.02%	5.49%	5.56%	5.14%	4.56%	3.16%	3.38%	2.63%	2.15%	1.87%	1.46%	2.75%	2.79%	3.12%	3.45%	3.74%
MS Black	1.15%	2.37%	1.54%	2.26%	3.70%	3.85%	0.94%	0.68%	1.29%	1.41%	0.74%	0.44%	0.22%	0.20%	0.33%	1.77%
PhD Black	1.40%	1.28%	1.15%	0.97%	1.21%	0.90%	0.57%	0.60%	0.59%	0.32%	0.33	0.66%	0.00%	0.00%	0.37%	0.35%
UG Hispanic	14.82%	15.54%	16.29%	18.51%	17.09%	16.33%	18.10%	19.30%	18.27%	18.05%	21.36%	23.74%	24.57%	26.95%	28.50%	23.60%
MS Hispanic	2.87%	2.37%	3.47%	4.52%	4.17%	2.88%	3.77%	2.05%	1.81%	2.12%	1.23%	1.10%	1.08%	1.49%	3.26%	5.30%
PhD Hispanic	3.26%	2.99%	3.05%	3.24%	3.64%	3.60%	4.02%	3.61%	1.78%	1.92%	1.65%	1.65%	1.79%	1.85%	2.57%	3.19%
UG Female	10.46%	11.21%	10.08%	10.55%	10.90%	11.87%	13.53%	13.65%	13.84%	13.88%	14.35%	14.31%	14.40%	14.10%	13.78%	13.11%
MS Female	17.24%	17.39%	16.99%	14.48%	15.74%	19.71%	17.59%	14.73%	14.73%	18.12%	19.46%	21.98%	23.44%	23.87%	21.82%	24.83%
PhD Female	12.09%	14.96%	14.89%	12.94%	13.94%	11.41%	11.78%	12.99%	12.95%	15.65%	16.29%	16.50%	17.86%	18.52%	18.75%	17.73%

2. Goals

- G1:** Increase ECE’s enrollment of both undergraduate and graduate students from underrepresented minority (URM) groups (i.e., students who are women, Black, Hispanic, and/or disabled) by 1% per year.
- G2:** Track retention and measure climate among URM groups, especially Black students in ECE, by 2024.
- G3:** Provide culturally supportive advising for students from URM groups by 2024.
- G4:** Have a majority of faculty meaningfully engage in BPC activities by 2025.

3. Activities and Measurement (all activity contact should be directed to Z. Xiong)

- A1: Enhance high school outreach (G1-UG).** The department will: a) Work with partner high schools in our college’s Access and Inclusion program to boost ECE enrollment among students from URM groups. b) Host recruiting event at High School Conference hosted by the Society of Women Engineers chapter at TAMU. *Measurement: Participation counts; departmental demographics.*
- A2: Host summer bridge programs (G1).** The department will: a) Coordinate and work with the CoE to strengthen our freshmen’s math preparedness through two programs that have a high percentage of Hispanic students: The summer bridge program and our expanding Engineering Academies (Blinn College and community colleges across TX). b) Recruit MS and PhD students from URM groups and provide them with support by expanding our

graduate student orientation and schedule monthly meetings between our graduate students and graduate advisors. *Measurement: Participation counts; departmental demographics.*

- A3: Support students interested in ECE from URM groups in their freshmen year (G3).** Many of our freshmen from URM groups are first-generation college students and the department is interested in increasing support in helping them navigate the college environment. The department will: a) Work closely with TAMU's Academic Success Center (ASC) to identify and implement strategies for supporting first-generation college students. b) Provide workshops run by affinity groups such as AHIC to help our students succeed in college. c) Invite these freshmen to attend information sessions about ECE and future job perspectives. d) Invite faculty members with ample BPC experience to become student mentors. *Measurement: Participation counts in activities; departmental demographics.*
- A4: Enrich our student advising program to increase participation by students from URM groups (G3).** The department will hire a new full-time staff member to address the increasing need in student advising, with focus on students from URM groups. *Measurement: number of student advising meetings held each semester.*
- A5: Involve students from URM groups in research (G1, G3).** Faculty members will mentor senior students from URM groups in our well-recognized honors research program. *Measurement: participant counts from URM groups.*
- A6: Hire more graduate students from URM groups as TAs (G1, G3).** To make sure that our graduate students from URM groups are well represented in our TA population, the department will encourage students from URM groups to apply for TA positions. *Measurement: Demographics of the TA population.*
- A7: Promote diversity in faculty hiring (G1-Faculty, G4).** The department will continue encouraging faculty attendance in URM group focused conferences such as Grace Hopper Celebration to showcase ECE at TAMU and attract faculty candidates. The department head will also discuss with other ECE department heads at the ECEDHA annual conference about recruiting faculty members from URM groups. *Measurement: faculty participation and presentation count; demographics of faculty/PhD contacts, applications received, & hired.*
- A8: Periodically conduct climate surveys (G2).** The department will continue conducting climate surveys, using feedback from student organizations such as the IEEE and affinity groups such as the AHIC to design survey questions, and to hold faculty meetings and student town halls with respective groups to discuss survey results and address raised issues and concerns. *Measurement: survey and town hall participant counts.*
- A9: Revise our curriculum to include social implications (G4).** The ECE Undergraduate and Graduate Studies Committees will work with instructors to design activities that demonstrate the impact of ECE technology (such as the Internet, smart phones and AI) on society for all required ECE courses. *Measurement: number of activities implemented.*
- A10: Support faculty in inclusive teaching practices (G4).** The department will continue our engagement with the TAMU Institute for Engineering Education & Innovation (IEEI) and the TAMU Center for Teaching Excellence to support faculty in fostering more inclusive teaching environments. *Measurement: faculty participation count.*
- A11: Foster relationships with local HBCU (G4)** Faculty will participate in IEEI community events with Prairie View A&M (PVAMU), a local HBCU, and encourage TAMU & PVAMU faculty to serve on each other's graduate committees. *Measurement: faculty participation count.*
- A12: Track retention and attrition among ECE students and faculty (G2).** The department will collect data on student retention and graduation rates to track their trends on gender, race and other demographics to track progress on our BPC goals. Faculty retention and attrition will be measured and tracked similarly to guide future hiring. *Measurement: Demographic attrition and retention data.*
- A13: Acknowledge BPC activities in faculty annual review (G4).** The department will encourage faculty to list their BPC activities along with teaching, research, and service in their annual faculty progress reports (FPRs). The department head will acknowledge faculty BPC activity in annual faculty review memo letters to emphasize the importance of these activities and encourage faculty participation in them. *Measurement: number of faculty including BPC activities in their annual FPRs and number of department head's faculty annual review memo letters that acknowledge BPC activities.*