Undergraduate Program Report to Advisory Board Winter 2018

Mel Gomez

- Graduation, Enrollment and Retention Updates
- BS ES&IoT @ Shady Grove
- BE EE @ Southern Maryland
- Program Updates

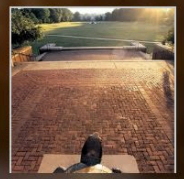
https://www.youtube.com/watch?v=XXLeHtqh5jw

University of Maryland--College Park

College Park, MD 20742 | (301) 405-1000

#63 (tie) **in** National Universities | **Overall Score 59/100.0**



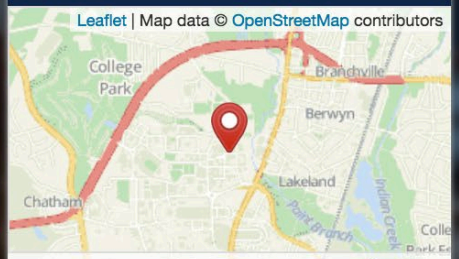



View All
22 Photos »

University of Maryland--College Park Rankings

- **#63** (tie) in National Universities
- **#27** (tie) in Civil
  At schools whose highest degree is a doctorate
- **#23** (tie) in Computer
  At schools whose highest degree is a doctorate
- **#23** (tie) in Electrical / Electronic / Communications
  At schools whose highest degree is a doctorate
- **#25** (tie) in Mechanical
  At schools whose highest degree is a doctorate

School Details



College Park, MD Map

Save to My Schools

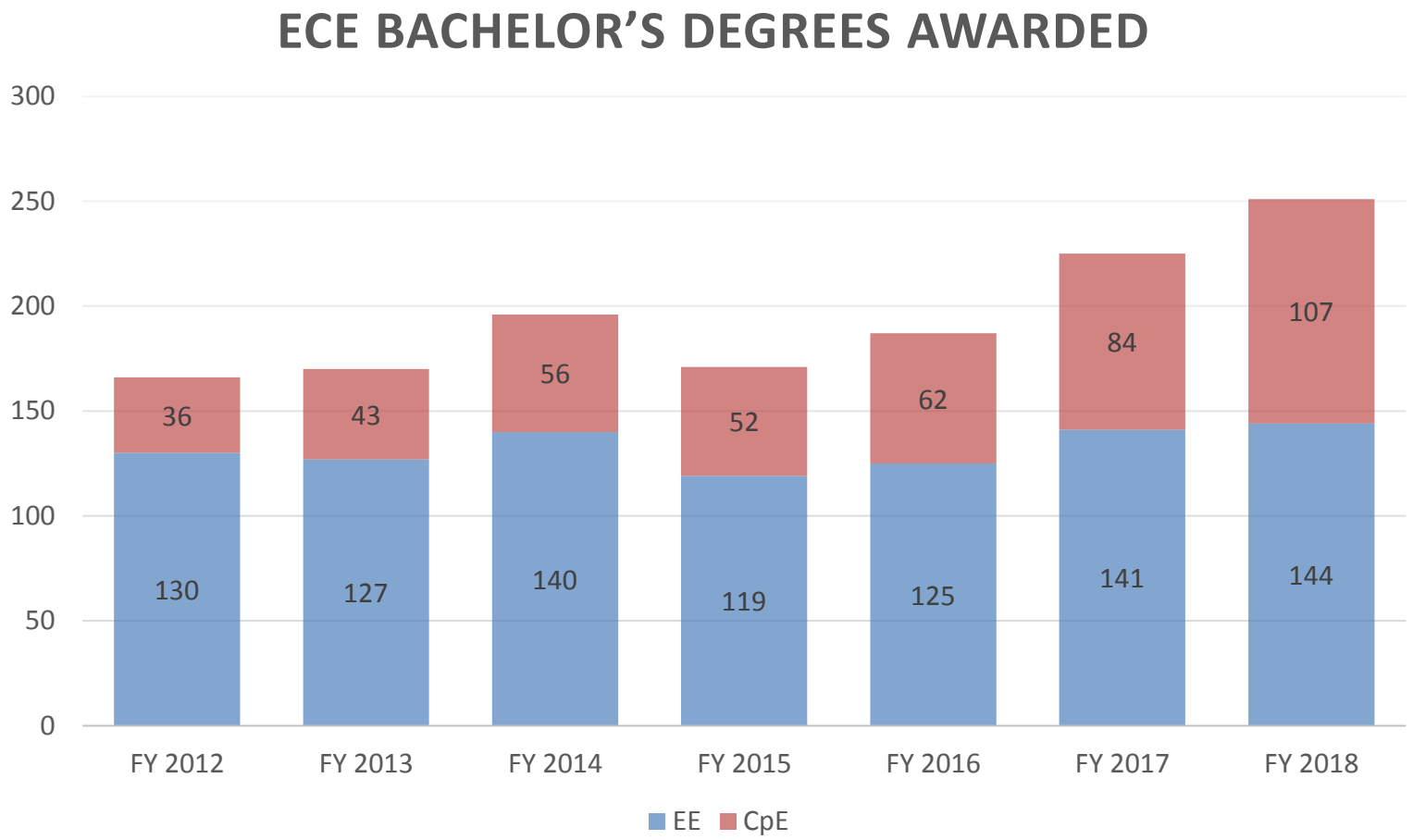
See My Schools »

2019 Quick Stats

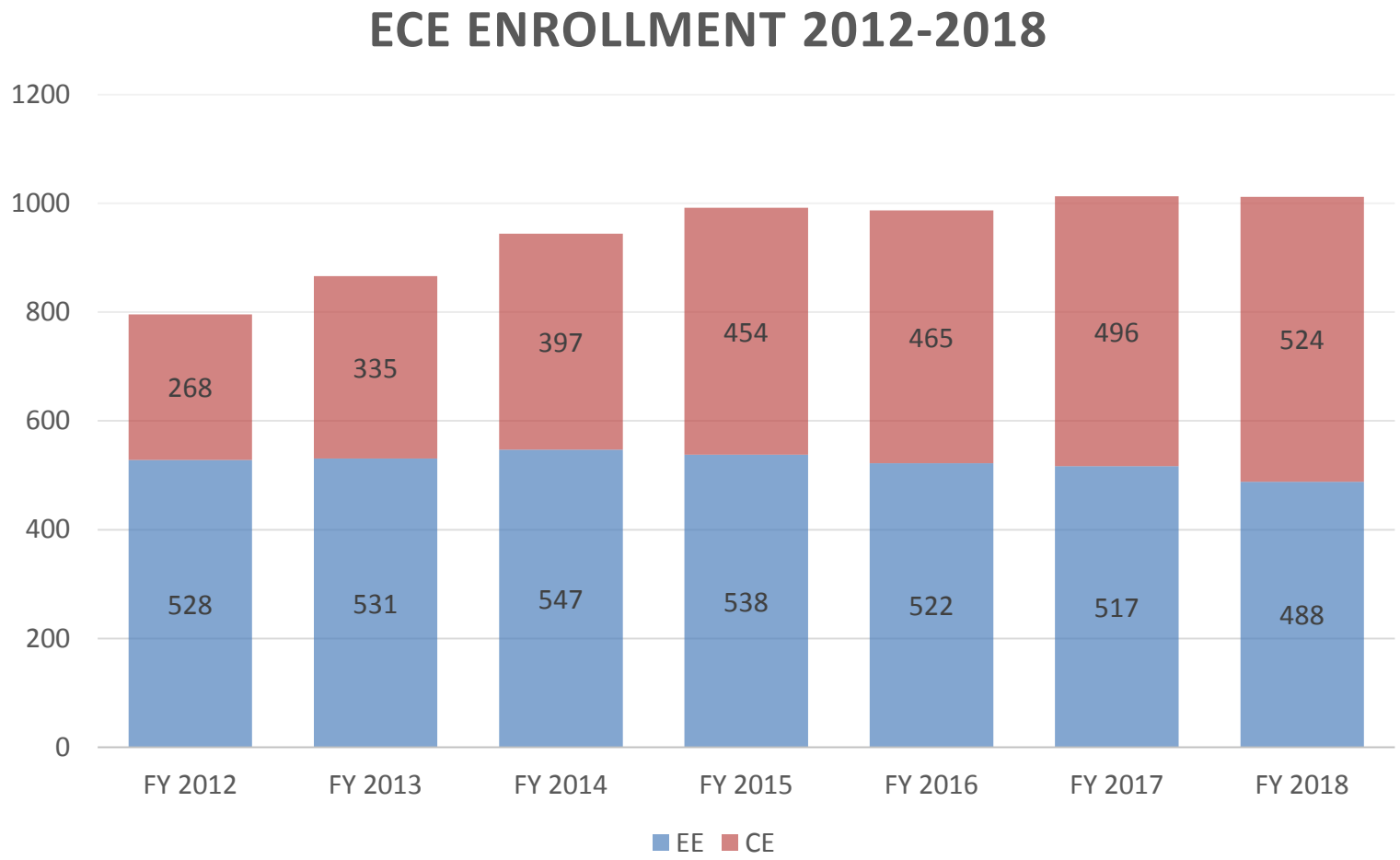
IN-STATE TUITION & FEES	$10,595 (2018-19)
OUT-OF-STATE TUITION & FEES	$35,216 (2018-19)
ROOM AND BOARD	$12,429 (2018-19)
TOTAL ENROLLMENT	40,521
APPLICATION DEADLINE	Jan. 20

See all My Notes »

Graduation Numbers



ECE Enrollments

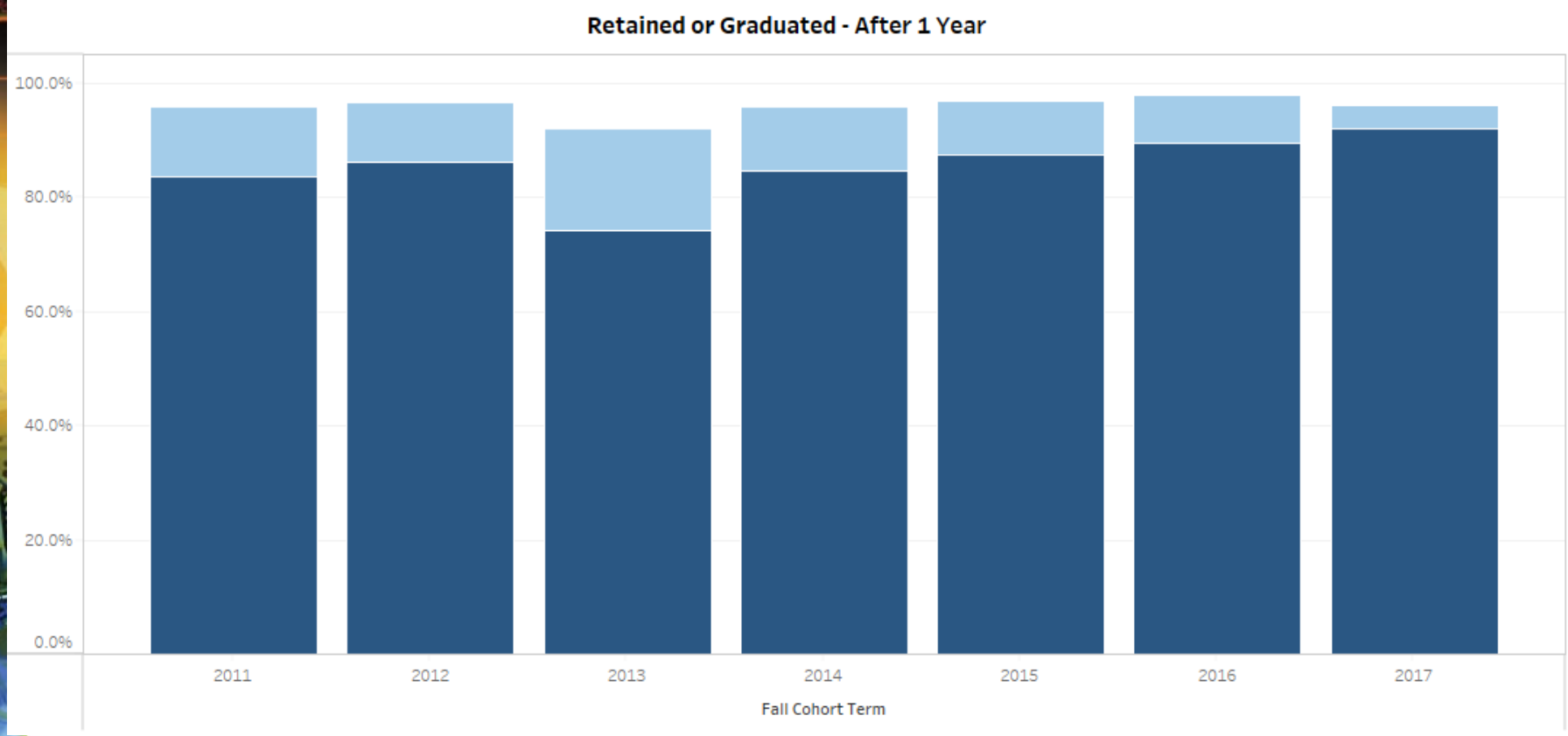


EE Retention – 1 yr

New First-Time Student Cohort: Retained or Graduated

College: A. James Clark School of Engineering
Department: ENGR-Electrical & Computer Engineering
Major: 09090 - Engineering: Electrical

Race/Ethnicity: All
Gender: All
Continuity: same Department



CpE Retention – 1 yr

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Department: ENGR-Electrical & Computer Engineering
Major: 09991 - Engineering: Computer

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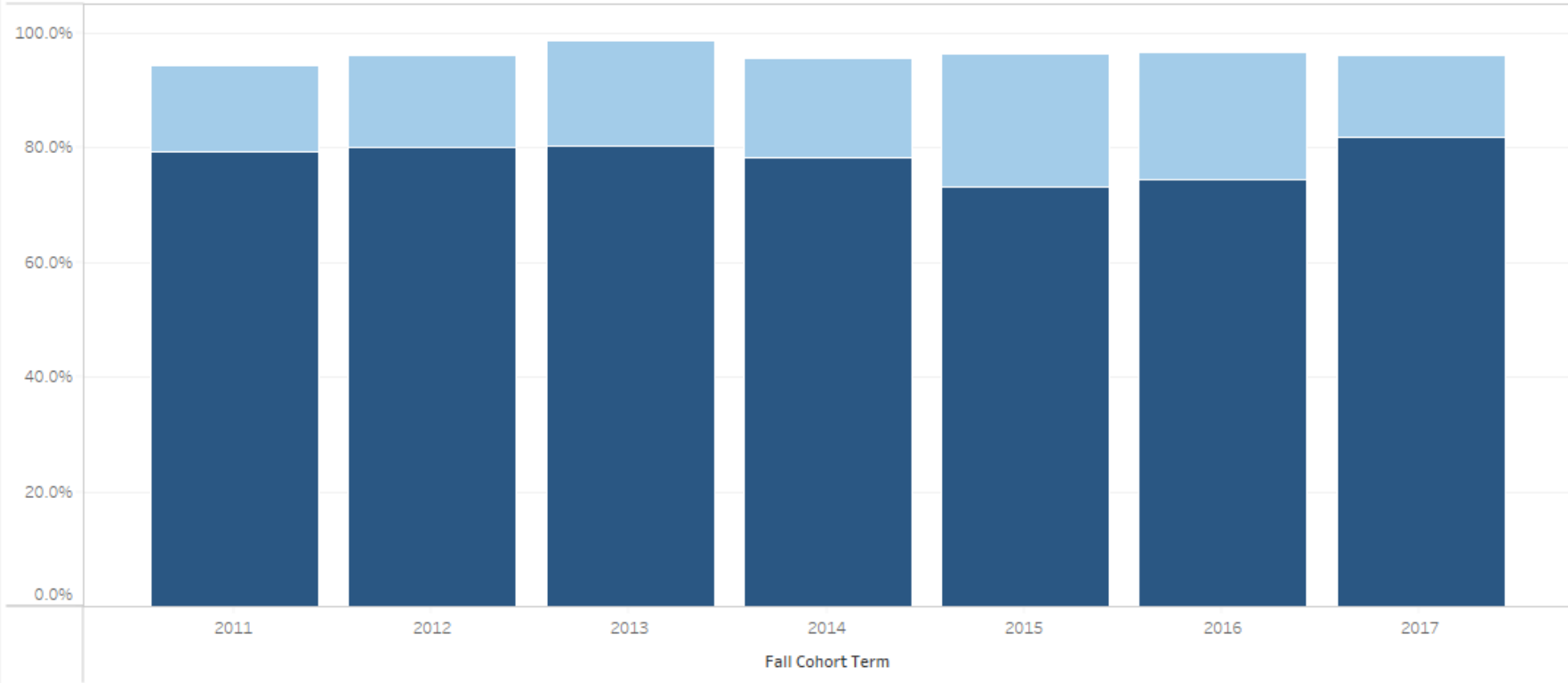
Gender: All
Continuity: same Department

Retained or Graduated - After 1 Year



EE Graduation – 4 yr

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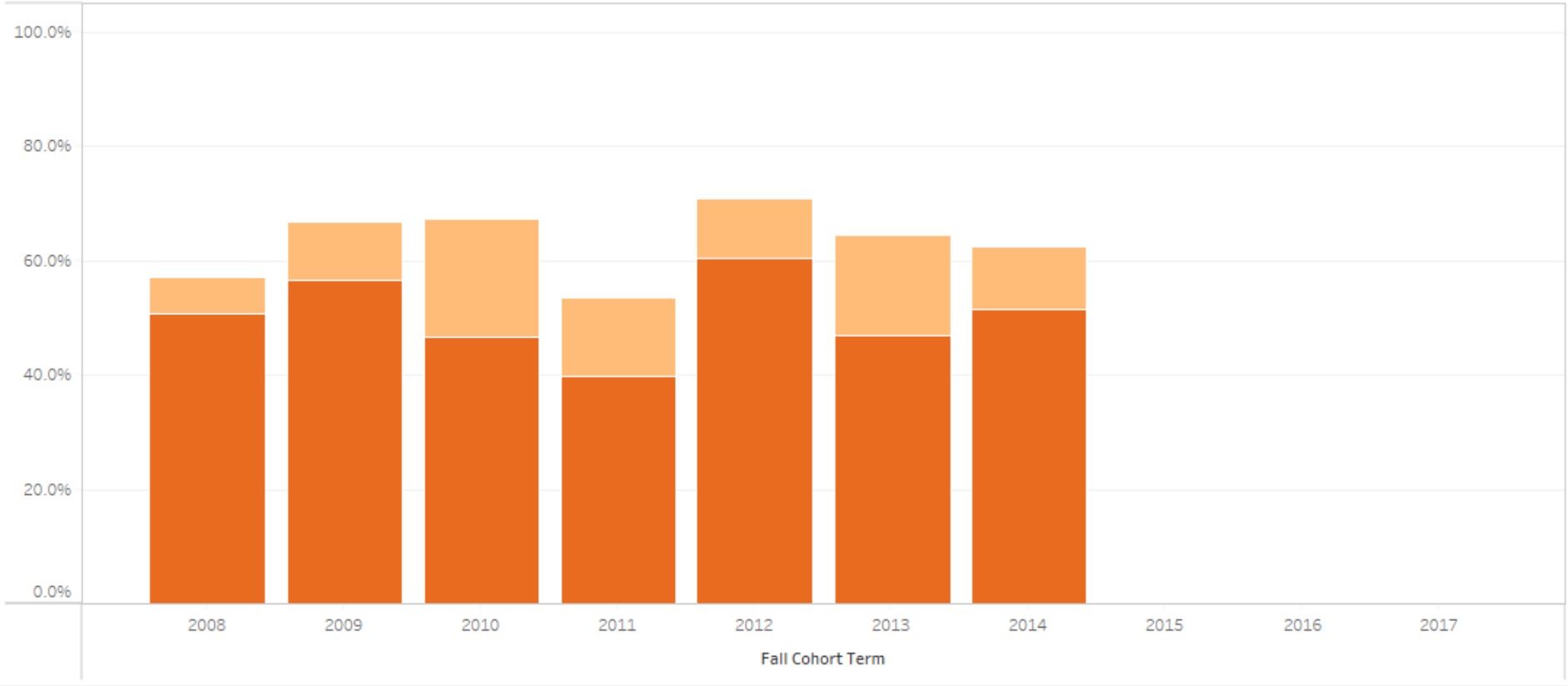
Graduated - After 4 Years



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Race/Ethnicity: All
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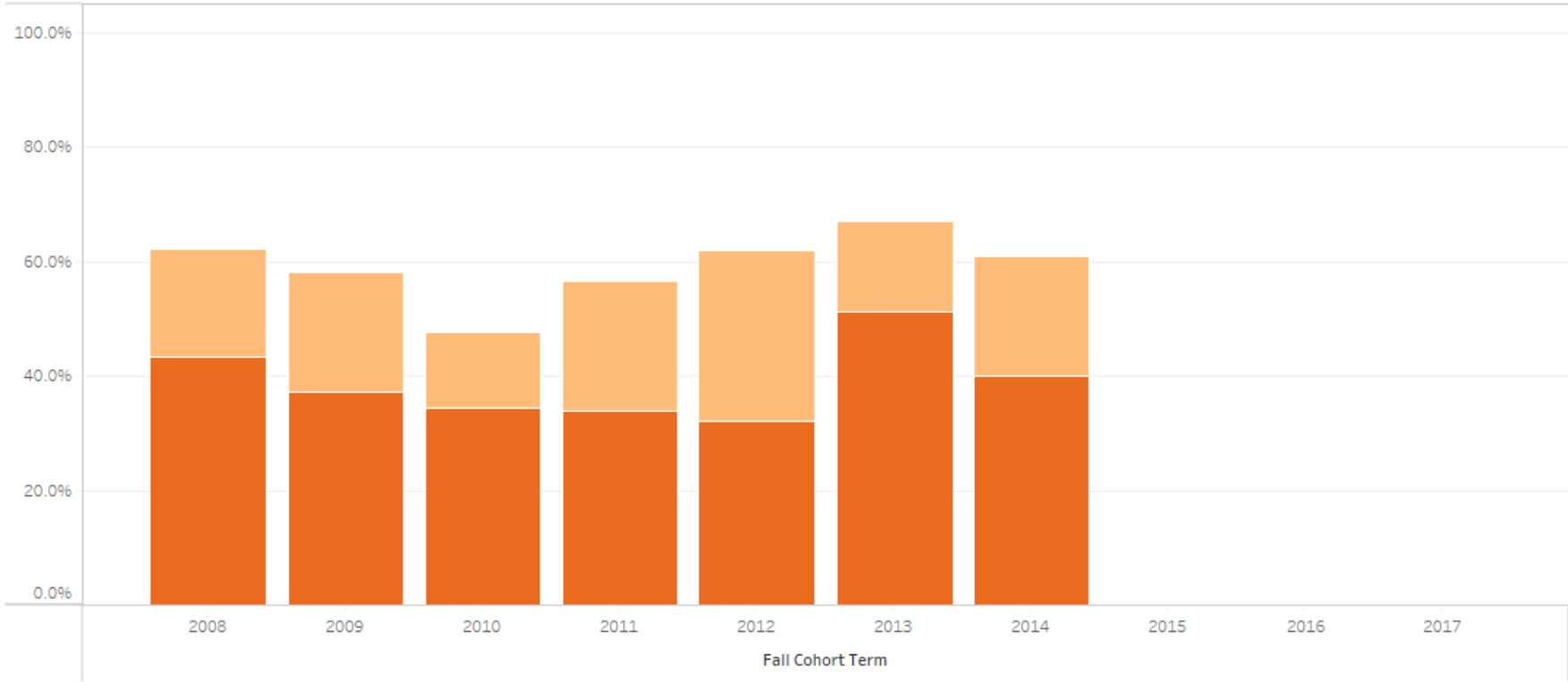
Continuity: same Department

Graduated - After 4 Years



EE Graduation – 5 yr

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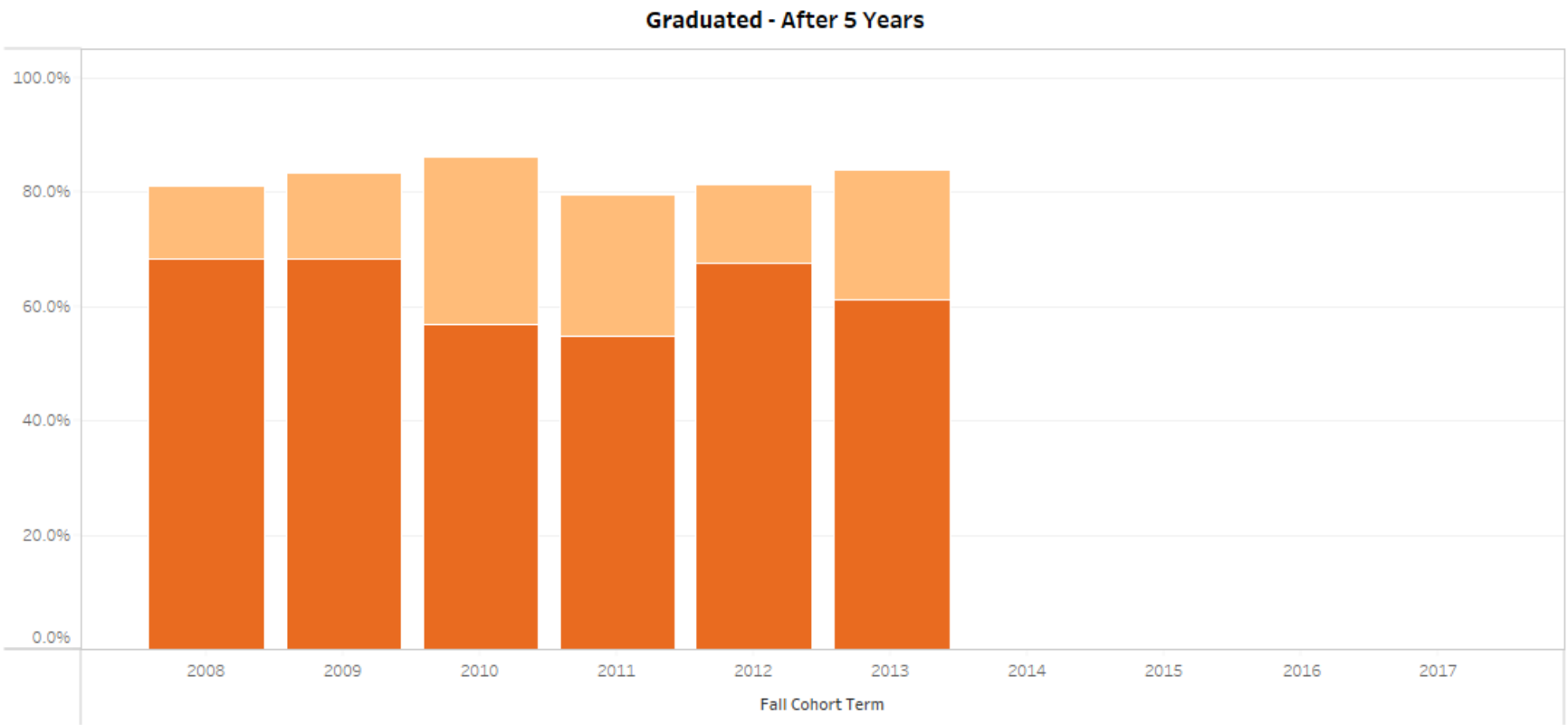
Race/Ethnicity: All
Gender: All
Continuity: same Department



CpE Graduation – 5 yr

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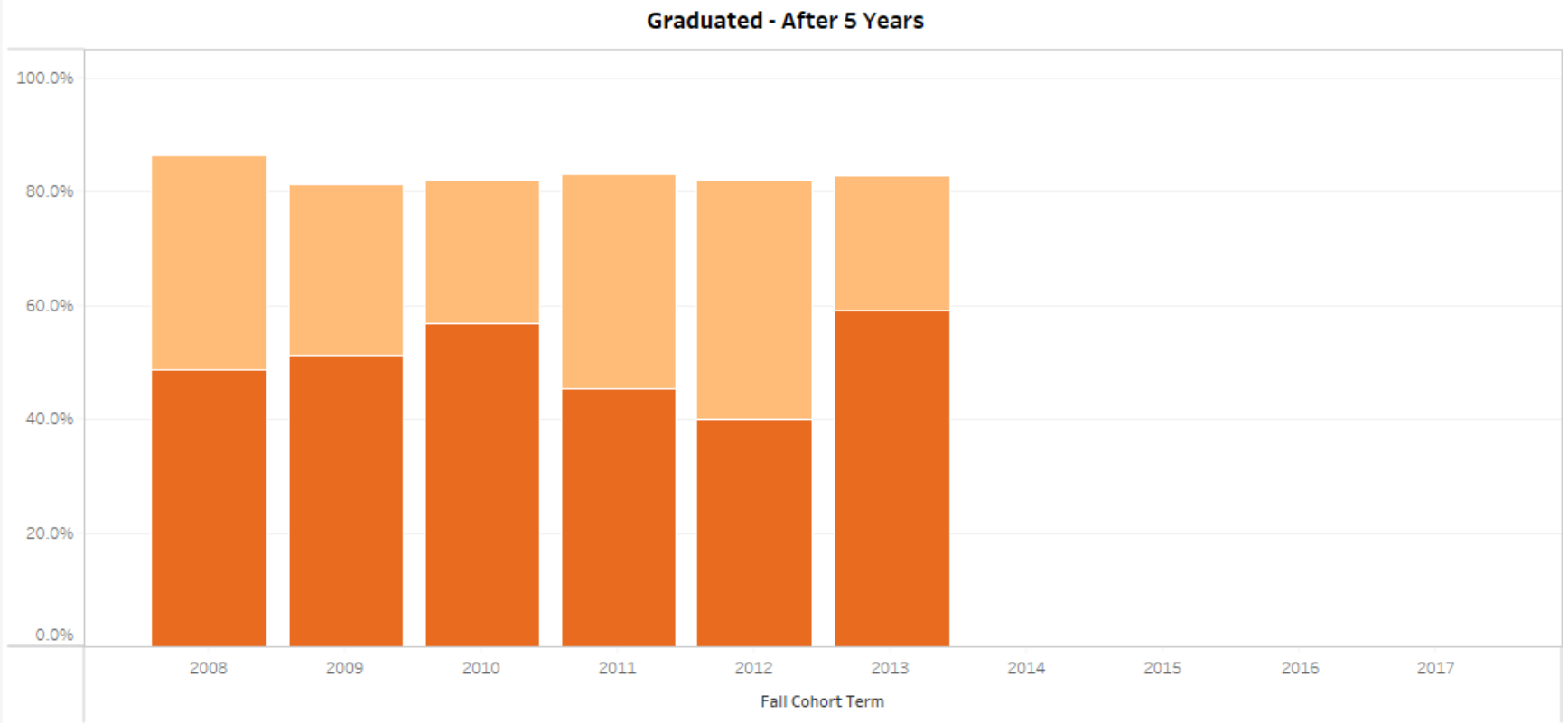

Retention and Graduation

New First-Time Student Cohort: Retained or Graduated

College: A. James Clark School of Engineering
Department: ENGR-Electrical & Computer Engineering
Major: 09090 - Engineering: Electrical

Race/Ethnicity: All
Gender: All
Continuity: same Department

Cohort Term	Cohort Size	Retained/Graduated After 1 Year	Retained/Graduated After 2 Years	Retained/Graduated After 3 Years	Graduated After 4 Years	Graduated After 5 Years
Fall 2010	58	77.6%	62.1%	60.3%	46.6%	56.9%
Fall 2011	73	83.6%	67.1%	60.3%	39.7%	54.8%
Fall 2012	86	86.0%	75.6%	72.1%	60.5%	67.4%
Fall 2013	62	74.2%	71.0%	64.5%	46.8%	61.3%
Fall 2014	72	84.7%	76.4%	75.0%	51.4%	
Fall 2015	64	87.5%	78.1%	76.6%		
Fall 2016	47	89.4%	78.7%			
Fall 2017	50	92.0%				

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Continuity: same Department

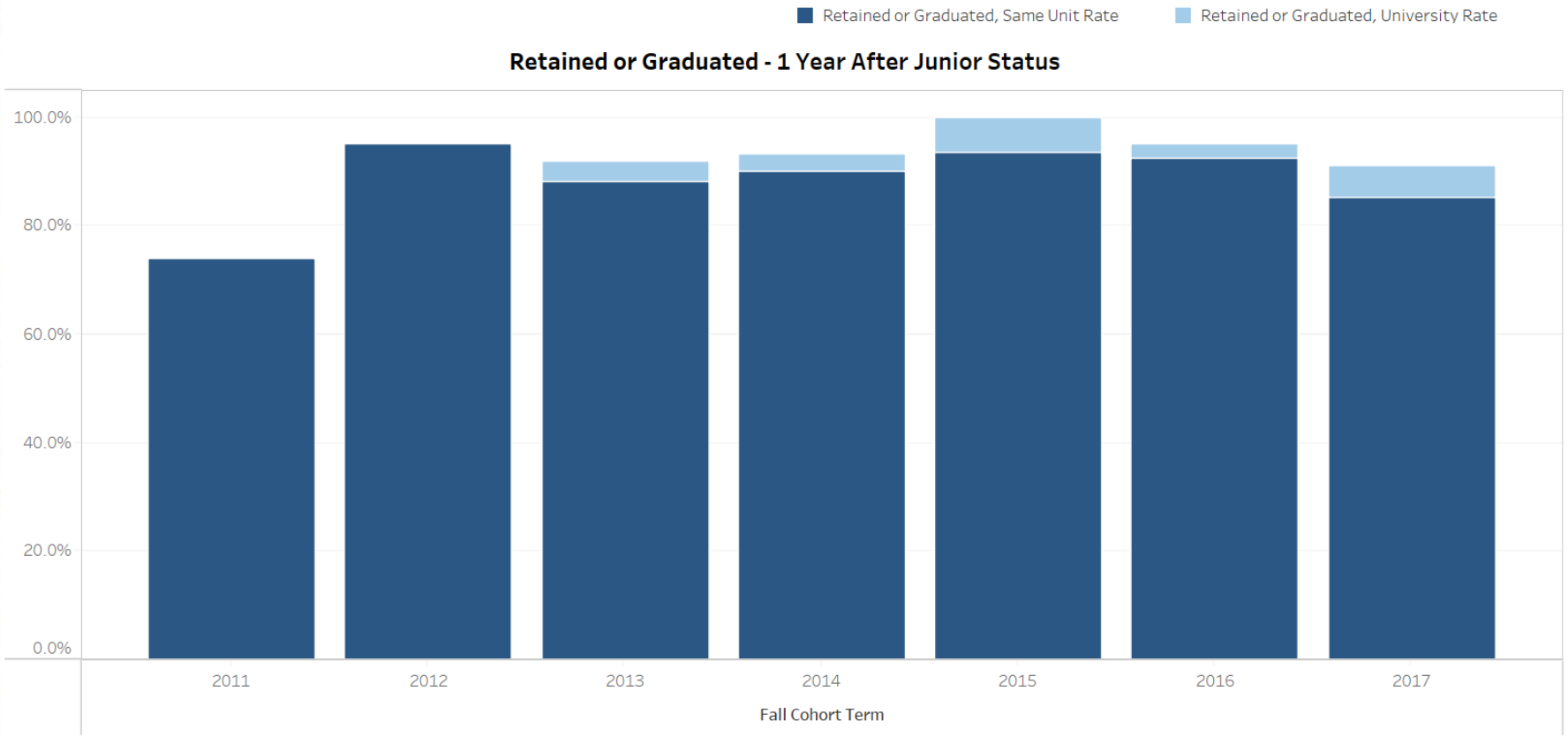
Cohort Term	Cohort Size	Retained/Graduated After 1 Year	Retained/Graduated After 2 Years	Retained/Graduated After 3 Years	Graduated After 4 Years	Graduated After 5 Years
Fall 2010	67	82.1%	71.6%	65.7%	34.3%	56.7%
Fall 2011	53	79.2%	66.0%	52.8%	34.0%	45.3%
Fall 2012	50	80.0%	52.0%	44.0%	32.0%	40.0%
Fall 2013	76	80.3%	69.7%	63.2%	51.3%	59.2%
Fall 2014	115	78.3%	62.6%	54.8%	40.0%	
Fall 2015	82	73.2%	64.6%	53.7%		
Fall 2016	86	74.4%	58.1%			
Fall 2017	105	81.9%				

ECE Transfer – 1 yr retention

Transfer Students Retained or Graduated at the same College

College: A. James Clark School of Engineering
Department: ENGR-Electrical & Computer Engineering
Major: All

Race/Ethnicity: All
Gender: All
Transfer Inst: All

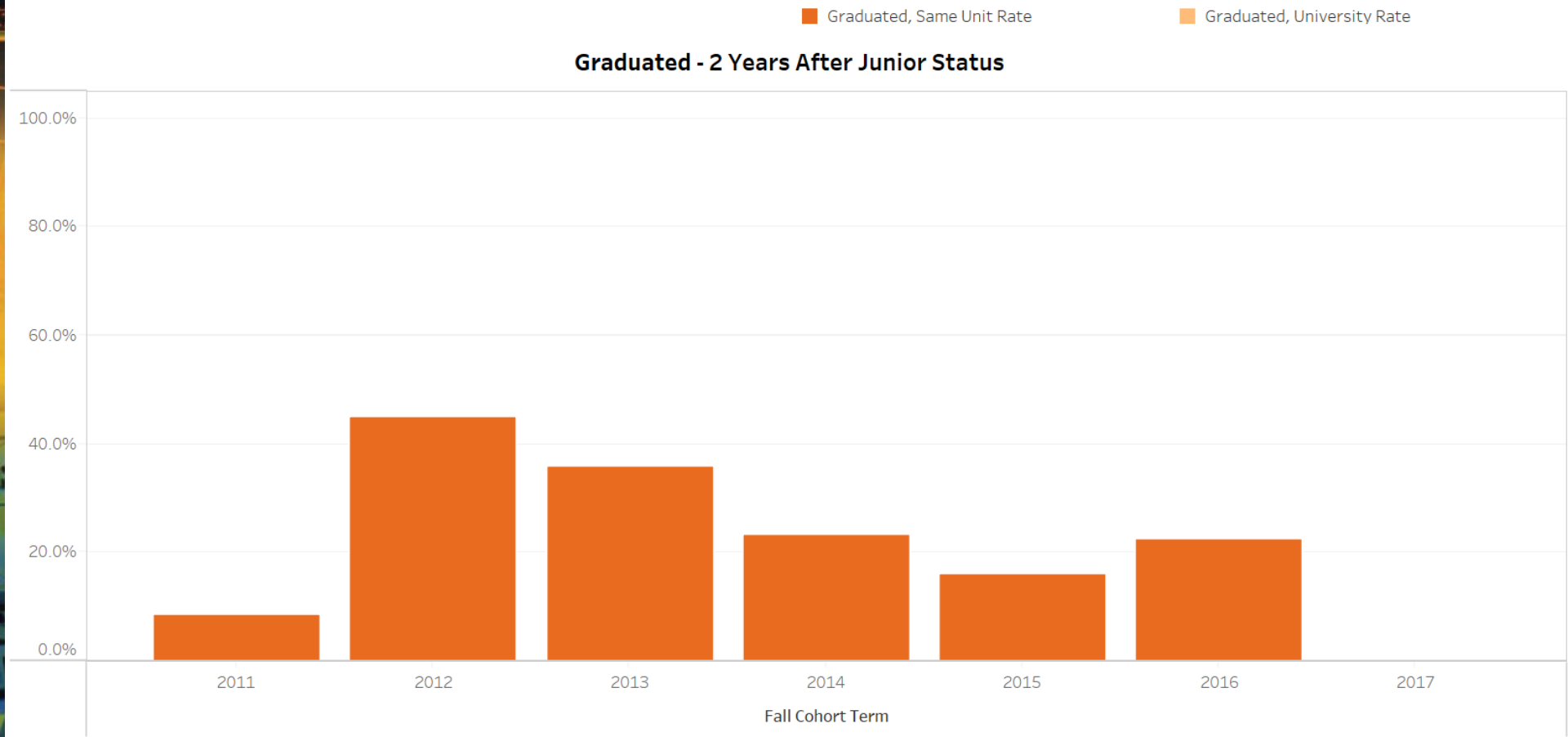


ECE Transfer – 2yr graduation

Transfer Students Retained or Graduated at the same College

College: A. James Clark School of Engineering
Department: ENGR-Electrical & Computer Engineering
Major: All

Race/Ethnicity: All
Gender: All
Transfer Inst: All



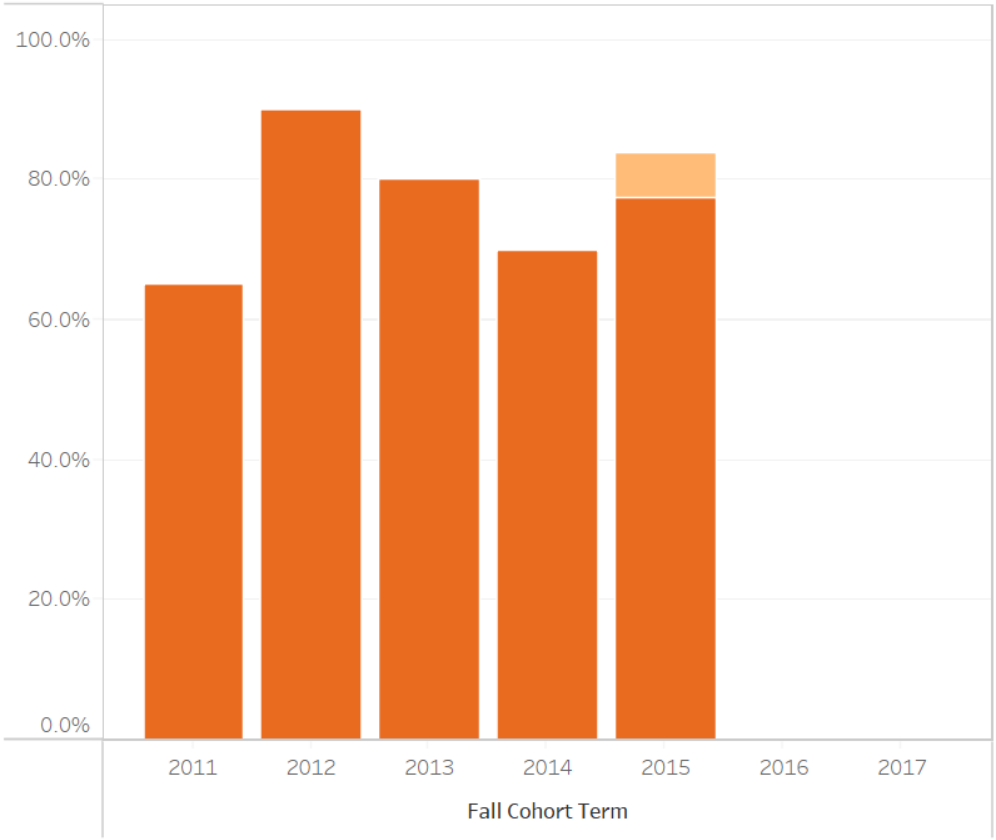
ECE Transfer – 3 yr graduation

Transfer Students Retained or Graduated at the same College

College: A. James Clark School of Engineering
Department: ENGR-Electrical & Computer Engineering
Major: All
Race/Ethnicity: All
Gender: All
Transfer Inst: All

Graduated, Same Unit Rate

Graduated - 3 Years After Junior Status

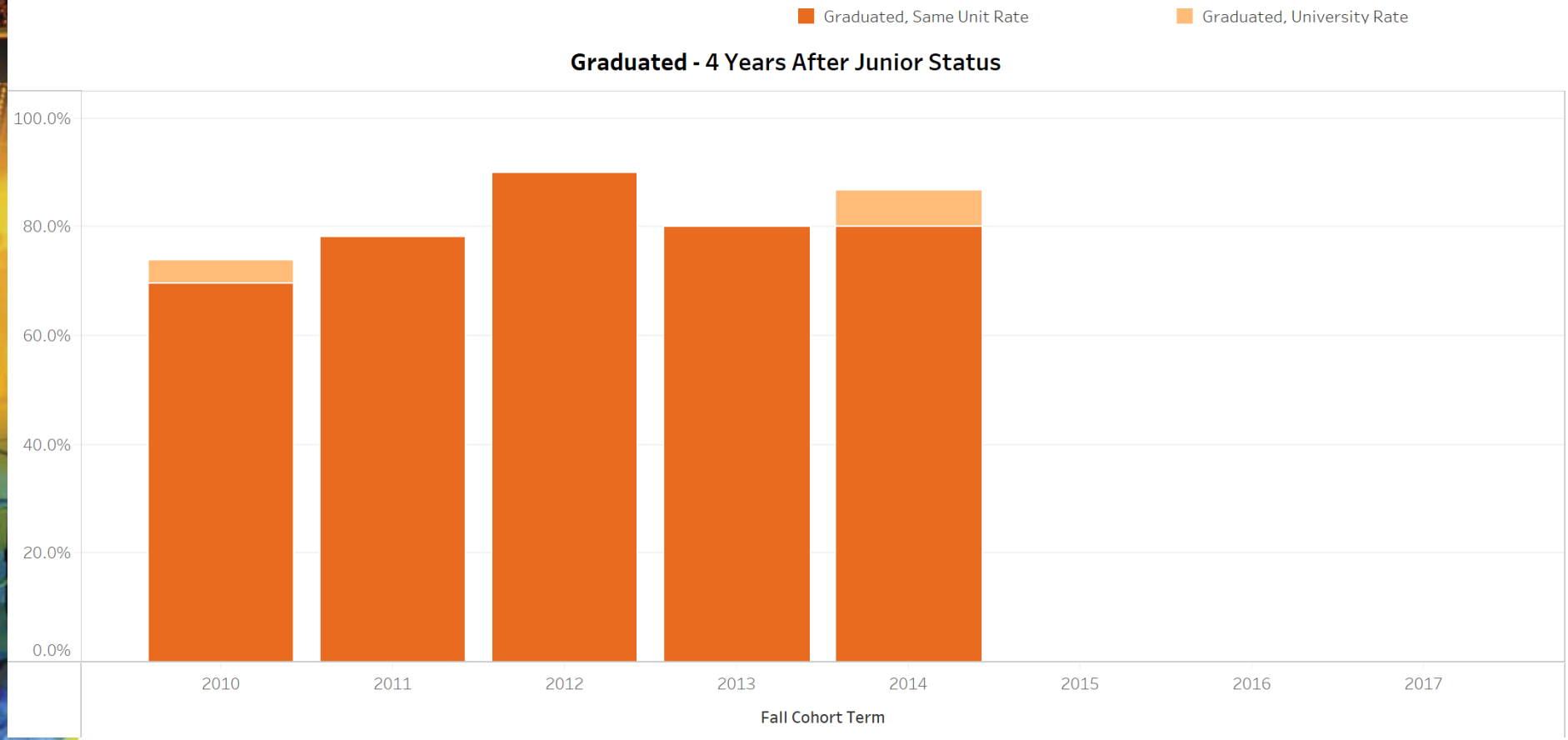


ECE Transfer – 4 yr graduation

Transfer Students Retained or Graduated at the same Department

College: A. James Clark School of Engineering
Department: ENGR-Electrical & Computer Engineering
Major: All

Race/Ethnicity: All
Gender: All
Transfer Inst: All



BS ES-IoT @ Shady Grove Update

- Program approved by University Senate and President Loh on 12/11/18
- Up next: approval from USM and MHEC 1/15/19

UNIVERSITY SENATE | **LEGISLATION APPROVAL | #18-19-19**

Approved by the Senate on December 4, 2018

PCC Proposal to Establish a Bachelor of Science in Embedded Systems and the Internet of Things (Senate Document #18-19-19)

TO Wallace D. Loh | President

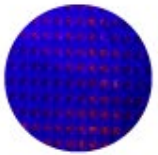
FROM Christopher Walsh | Chair, University Senate

I am pleased to forward the accompanying legislation for your consideration and approval. Janna Bianchini, Chair of the Programs, Curricula, & Courses (PCC) Committee, presented the PCC Proposal to Establish a Bachelor of Science in Embedded Systems and the Internet of Things (Senate Document #18-19-19), which the University Senate approved at its meeting on December 4, 2018. Please inform the Senate of your decision and any administrative action related to your conclusion.

Approved:  **Date:** 12-11-2018

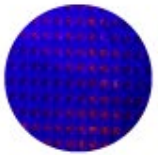
Wallace D. Loh
President

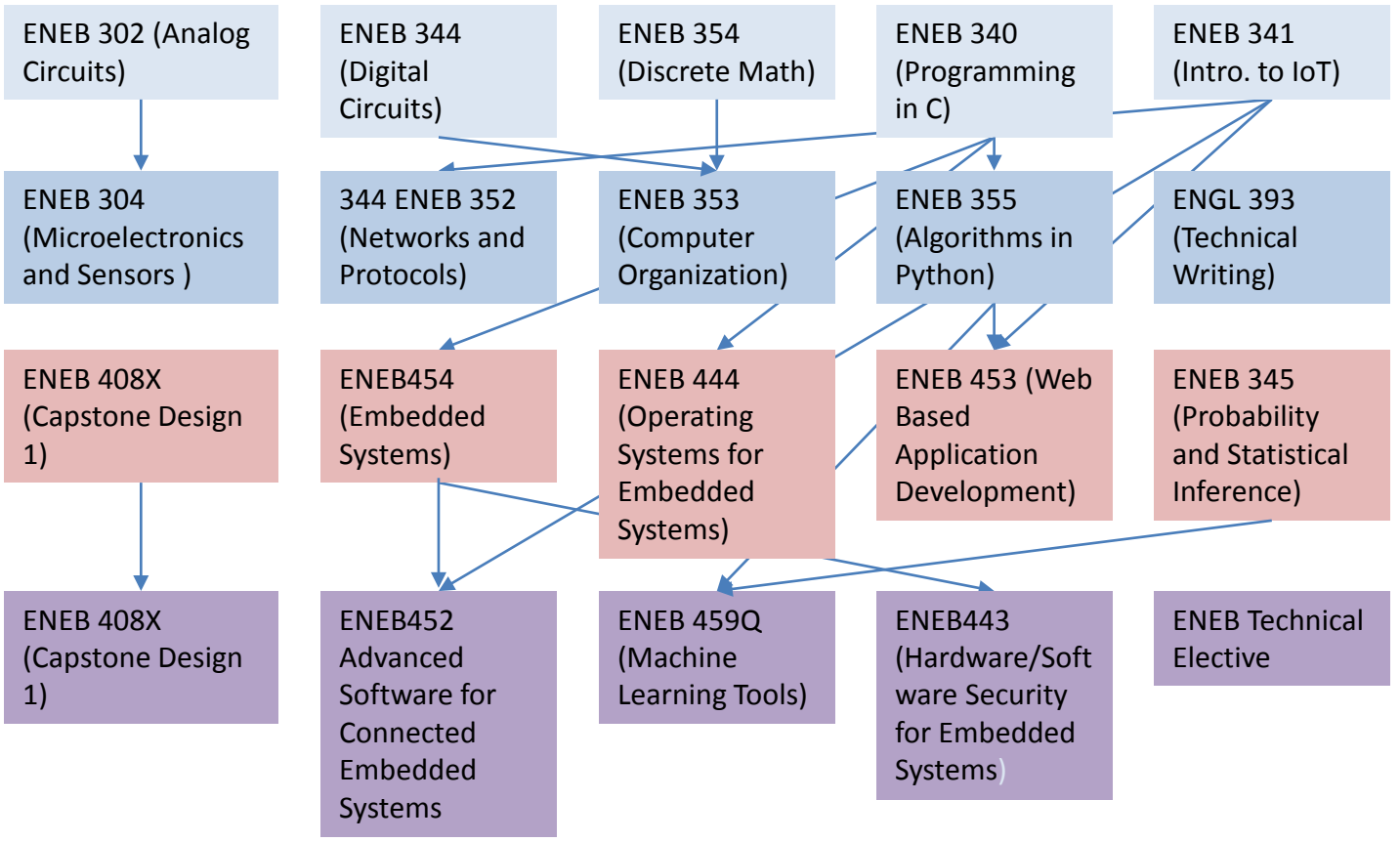
Hardware Track



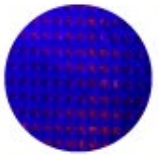
ENEB 302 (Analog Circuits)	ENEB 344 (Digital Circuits)	ENEB 354 (Discrete Math)	ENEB 340 (Programming in C)	ENEB 341 (Intro. to IoT)	**Junior Year, Fall**
ENEB 304 (Microelectronics and Sensors)	344 ENEB 352 (Networks and Protocols)	ENEB 353 (Computer Organization)	ENEB 355 (Algorithms in Python)	ENGL 393 (Technical Writing)	**Junior Year, Spring**
ENEB 408X (Capstone Design 1)	ENEB454 (Embedded Systems)	ENEB 444 (Operating Systems for Embedded Systems)	ENEB Technical Elective	ENEB Technical Elective	**Senior Year, Fall**
ENEB 408X (Capstone Design 1)	ENEB443 (Hardware/Software Security for Embedded Systems)	ENEB 455 (Advanced FPGA System Design Using Verilog)	ENEB Technical Elective	ENEB Technical Elective	**Senior Year, Spring**

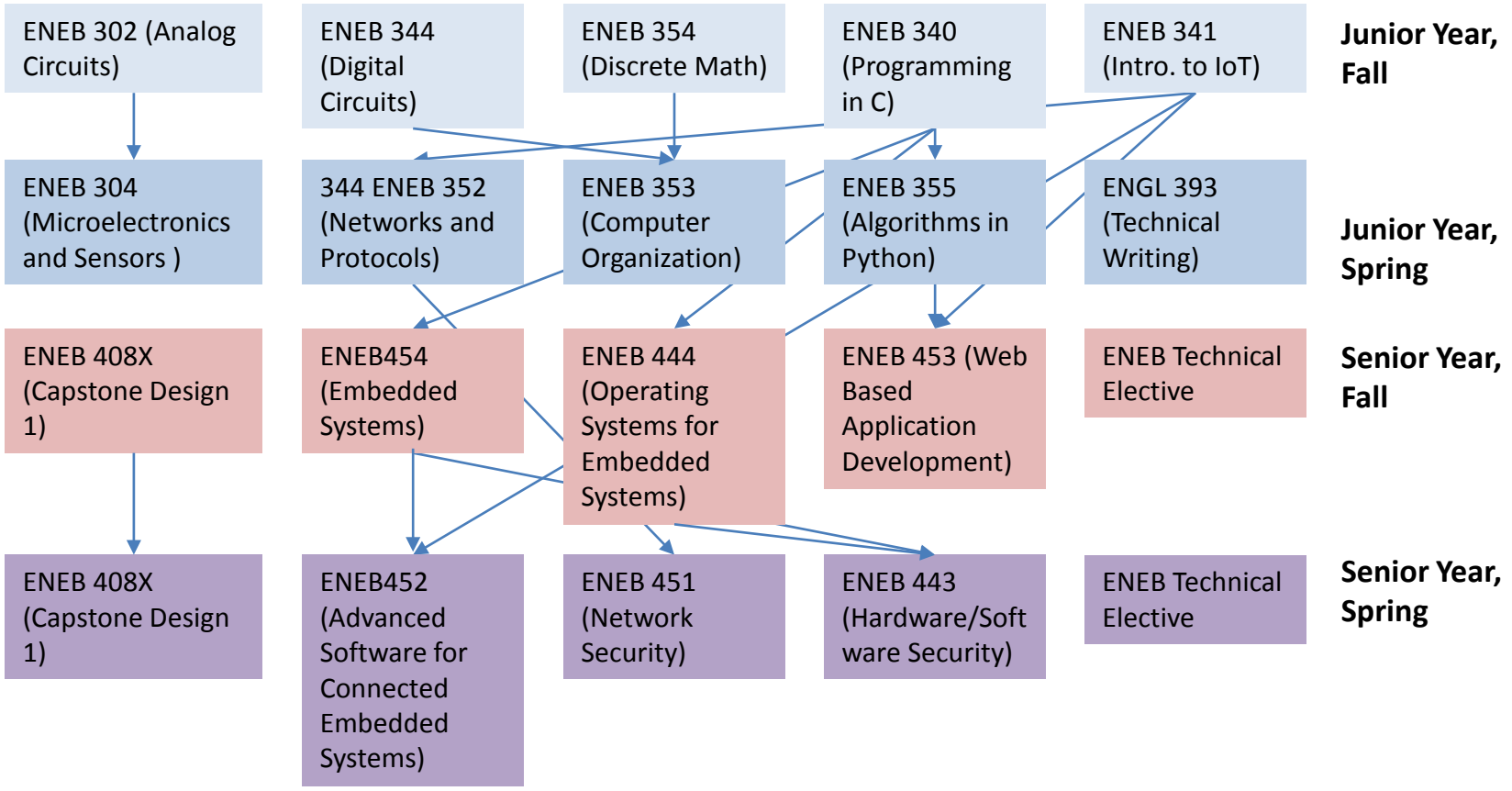
Computational Track





Network Security Track





BS EE at Southern MD Update

- 2017 Cohort: 8 on track for 2019 Graduation
- 2018 Cohort: 8
- Bridge funding for AY2019 secured
- Base-budget funding AY2020 requested by UMD for State Funding
- New course: ENEE 497 Foundational Engineering Math

Additional Program Updates

- Computer Engineering program changes:
  - Approved by ECE faculty
  - Proposal will go up for approval at the beginning of Spring 2019
  - Tentative implementation date: Fall 2019
- Machine Learning Minor
  - ECE/CS faculty currently finalizing coursework
  - Will submit minor proposal for approval in Spring 2019
  - Tentative starting date: Fall 2019
- Texas Instruments Peer Mentoring Program
  - Program is in its second year of existence
  - There are 20 student mentors and 20 first-year mentees
  - Looking to expand program to include transfer students

Currently Required CS Electives Math electives, Advanced labs, and Capstone omitted

Essential:

CMSC 131 – Java I
CMSC 132 – Java II
CMSC 216 – C

CMSC 250 – Discrete Math

CMSC 330 – Programming Languages
CMSC 351 – Algorithms

ENEE 205 – Circuits

ENEE 222 – Signals I

ENEE 244 – Digital Logic
ENEE 245 – Digital Lab

ENEE 350 – Computer Organization

Important, but Flexible:

ENEE 303 – Analog Circuits
ENEE 307 – Analog Lab

ENEE 322 – Signals II

ENEE 324 – Probability

Electives:

ENEE 411 – Adv Circuits
ENEE 413 – Devices
ENEE 475 – Power
ENEE 476 – Renewable

ENEE 425 – DSP
ENEE 460 – Controls
ENEE 463 – Digital Controls
ENEE 474 – Power Systems

ENEE 420 – Comm.
ENEE 426 – Comm. Net

ENEE 439M – ML
ENEE 469O – Opt.
Other ML Electives

ENEE 440 – Processors
ENEE 457 – Security
ENEE 459P – Parallel Algorithms
ENEE 459V – Embedded Systems
ENEE 459I - CPS

CMSC 423 – Bioinformatics
CMSC 421 – AI
CMSC 424 – Database
CMSC 426 – Image Processing
CMSC 427 – Graphics
CMSC 434 – HCI

CMSC 420 – Data Structures
CMSC 451 – Adv. Algorithms
CMSC 452 – Theory
CMSC 433 – Adv. PL

CMSC 474 – Game Theory
CMSC 475 – Graph Theory

CMSC 460 – Numeric Methods

ENEE 446 – Architecture
CMSC 412 – OS
CMSC 430 – Compilers
CMSC 417 – Networks

Computer Eng Major Changes

- Reduce the number of required courses and provide flexibility to choose courses earlier in the major
- Eliminate ENEE307 as a required course
- Allow students to choose ENEE303 or ENEE322; taking one but not both
- Allow students to choose ENEE324 or STAT400 (Applied Probability and Statistics)
- Increase number of 400-level courses
  - Increase required ENEE4xx (Cat. C) credits from 3 to 6
  - Allow students to choose additional 400-level course(s) from any category
- Remove ENEE322 as a prerequisite to ENEE324

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New Courses Updates

- ENEE 408 L – Electric Guitars
- ENEE 469O – Controls: Introduction to Optimization
- ENEE 489M – Active Microwave Devices
- ENEE 497 – Foundational Engineering Mathematics
- ENEE 299 – Research for Undergraduates

Thanks to Dimple Amin

New Freshman Orientation: Saturday, August 25 starting at 9:30 AM in A. James Clark Hall

Acknowledgements

- Materials prepared with help from
  - Mr. Neruh Ramirez, Director, UGO
  - Dr. Don Yeung, Director, CpE Program
  - Dr. Danilo Romero, Director, EE at SMD