

COMPUTER ENGINEERING (CEEN) - AREA ELECTIVES

Requirements:

- Minimum 4 courses totaling 12 credits; each course must be at least three credits.
- Main area must have at least 2 courses.
- An additional area must be covered.

COMMUNICATIONS AND NETWORKS

CSCE 463 Computer Networks	CSCE 315	3	3-0	ECEN 434 Optimization for ECEN	MATH 251; 311	3	3-0
CSCE 464 Wireless and Mobile Systems	CSCE 313	3	3-0	ECEN 455 Digital Communications	ECEN 314; ECEN 303 or STAT 211	4	3-3
CSCE 465 Computer and Network Security	CSCE 313; 315	3	3-0	MATH 470 Comm & Cryptography	MATH 311; CSCE 121	3	3-0
ECEN 423 Computer and Wireless Networks	MATH 311	3	3-0				
ECEN 424 Fundamentals of Networking	ECEN 303 or STAT 211	3	3-1				

INFORMATION

CSCE 310 Database Systems	CSCE 221	3	3-0	CSCE 444 Structures of Interactive Info	CSCE 315	3	3-0
CSCE 436 Computer Human Interaction	CSCE 315	3	3-0	CSCE 470 Information Storage & Retrieval	CSCE 315	3	3-0
CSCE 438 Distributed Objects	CSCE 315	3	3-0	ECEN 455 Digital Communications	ECEN 314; ECEN 303 or STAT 211	4	3-3

ROBOTICS / EMBEDDED SYSTEMS

CSCE 420 Artificial Intelligence	CSCE 315	3	3-0	ECEN 420 Linear Control Systems	ECEN 314; MATH 308	3	3-0
CSCE 452 Robotics	CSCE 315	3	3-0	ECEN 422 Control Engineering & Design	ECEN 420	3	2-3
CSCE 456 Real-Time Computing	CSCE 313; MATH 152	4	3-3				

SIGNAL / IMAGE PROCESSING AND GRAPHICS

CSCE 441 Computer Graphics	CSCE 315	3	3-0	ECEN 447 Digital Image Processing	ECEN 314	4	3-3
CSCE 443 Game Development	CSCE 441 or VIST 486	3	2-2	ECEN 448 Real Time Digital Signal Processing	ECEN 444	3	2-3
ECEN 444 Digital Signal Processing	ECEN 314	4	3-3				

SOFTWARE SYSTEMS AND ALGORITHMS

CSCE 314 Programming Languages	CSCE 221	3	3-0	CSCE 435 Parallel Computing	CSCE 315	3	3-0
CSCE 410 Operating Systems	CSCE 313; 315	3	3-0	CSCE 442 Scientific Programming	CSCE 221; MATH 308c	3	3-0
CSCE 411 Design and Analysis of Algorithms	CSCE 221; 222	3	3-0	CSCE 465 Computer & Network Security	CSCE 313; 315	3	3-0
CSCE 431 Software Engineering	CSCE 315	3	2-2	ECEN 434 Optimization for ECEN	MATH 251; 311	3	3-0
CSCE 434 Compiler Design	CSCE 315	3	3-0	ECEN 469 Advanced Computer Architecture	ECEN 350	3	3-0

VERY LARGE SCALE INTEGRATION (VLSI)

ECEN 326 Electronic Circuits	ECEN 314; 325	4	3-3	ECEN 474 VLSI Circuit Design	ECEN 326	4	3-3
ECEN 468 Advanced Digital System Design	ECEN 248	4	3-3	ECEN 475 Intro to VLSI Systems Design	ECEN 248; 325	4	3-3
ECEN 469 Advanced Computer Architecture	ECEN 350	3	3-0				

Additional Notes:

- A varying number of ECEN 489 (Special Topics) may be offered. Each course with a minimum of three credits may apply to one or more of the specialty areas, usually classified according to the professor's research area.
- One course can be fulfilled with a minimum of 1 and a maximum of 3 credits from any combination of ECEN 484, 485, 491, ENGR 385, 484, or engineering research if related to the major.
- Highlighted courses are offered in multiple research areas but may only be applied to one area for credit.