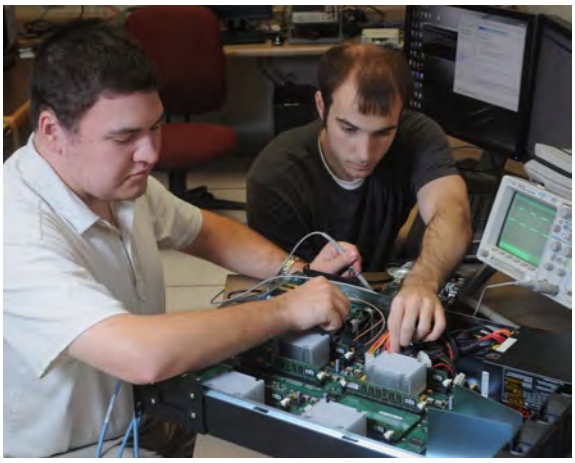
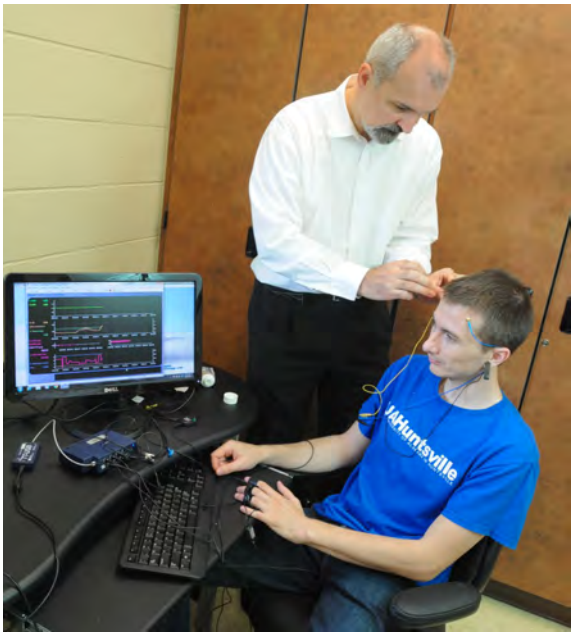
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE





Computer Engineering

Computer Engineers design systems which have both hardware and software components. Computer hardware engineers research, design, develop, test, and oversee the manufacture and installation of computer hardware including computer chips, circuit boards, keyboards, router, and printers. They also develop circuit boards for use in commercial, military, and space applications. Computer software engineers develop graphical user interfaces, write simulation software, develop parallel processing algorithms, design new data-compression devices, and work in multimedia to name some examples.

Highlights

- Huntsville, Alabama has the #5 concentration of Computer Engineering jobs in the United States.
- Program feature both hardware and software design.
- Students co-op with ADTRAN, Lockheed Martin, Missile Defense Agency, and many more.
- Average median salary in 2012: $100,920.

"Because I work part-time while taking classes at UAH, I have literally been able to learn something new at school and then apply it the next day at work. Similarly, my work experience has not only given me a stronger appreciation for my coursework, but also has allowed me to develop engineering skills that I will continue to use for the rest of my life."

Caleb Stewart // Madison, Alabama
Senior, Computer ENGINEERING

GO.

LEARN.

BE.

Academic Checksheet

COLLEGE OF ENGINEERING
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Computer Engineering
2015/2016 (129 Hours)

Student A# | **Student Name (Last, First MI)**

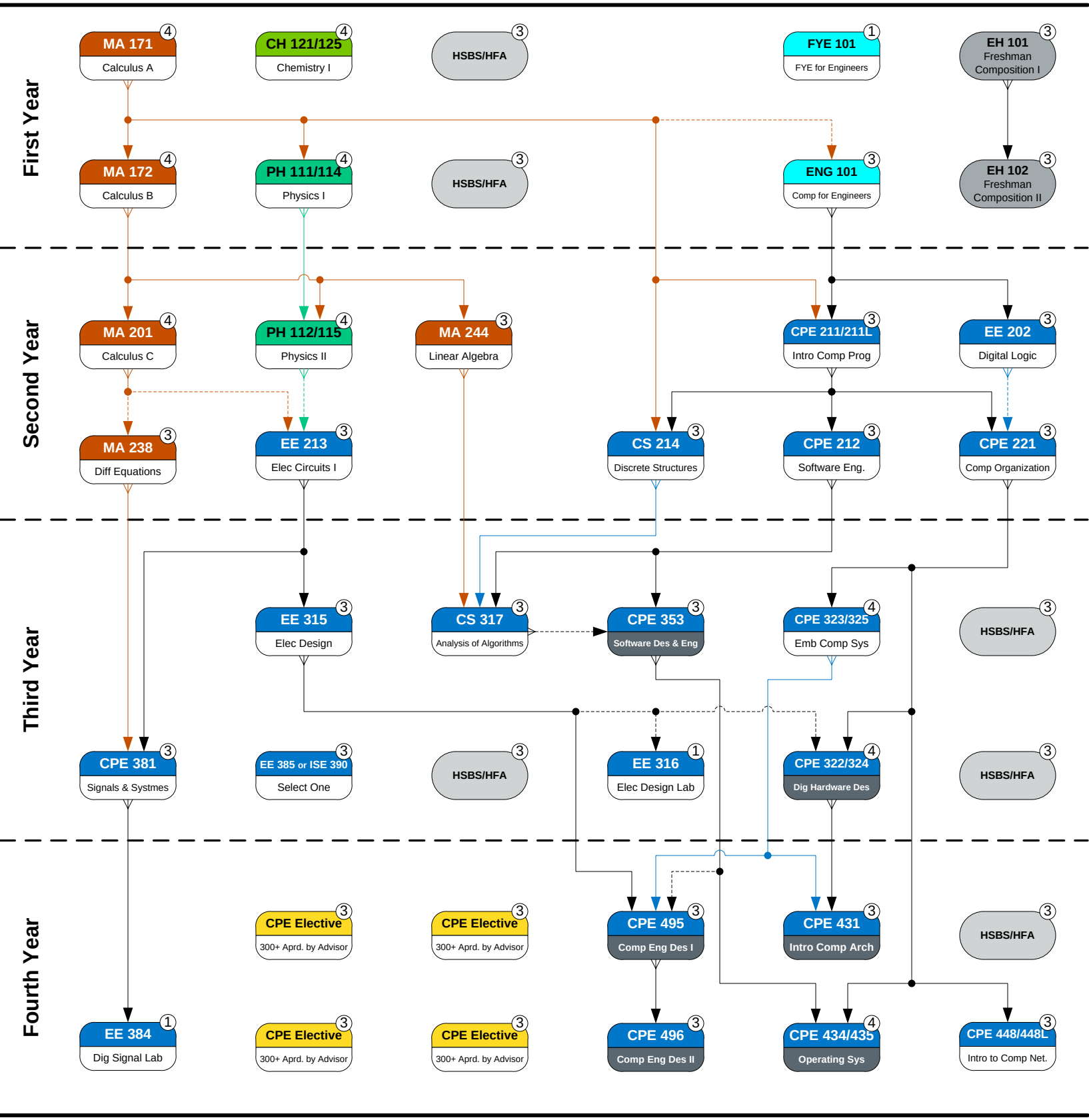
	Semester, Transfer or AP	Grade	Course Number	Cr Hrs	Course Title	Prerequisites, Corequisites and/or Prerequisites with Concurrency	Offered: F=Fall S=Spr M=Sum
					English - 6 hours		
			EH 101	3	Freshman Composition I	Placement	FSM
			EH 102	3	Freshman Composition II	EH 101	FSM
					Mathematics - 18 hours		
			MA 171	4	Calculus A	MA 113 or MA 115 or Level III Placement	FSM
			MA 172	4	Calculus B	MA 171	FSM
			MA 201	4	Calculus C	MA 172	FSM
			MA 238	3	Applied Differential Equations	Prereq w/Con: MA 201	FSM
			MA 244	3	Introduction to Linear Algebra	MA 172	FSM
					Chemistry - 4 hours		
			CH 121	3	General Chemistry I	Plcmt or CH 101, MA 113 or 115, Prereq w/Con: MA 171, Coreq: CH 125	FSM
			CH 125	1	General Chemistry Lab I	Coreq: CH 121	FSM
					Physics - 8 hours		
			PH 111	3	General Physics w/Calculus I	MA 171, Coreq: 114	FSM
			PH 114	1	General Physics Lab I	Coreq: PH 111	FSM
			PH 112	3	General Physics w/Calculus II	MA 172, PH 111, Coreq: 115	FSM
			PH 115	1	General Physics Lab II	Coreq: PH 112	FSM
					History, Social & Behavioral Sciences, Humaities & Fine Arts - 18 hours		
				3	History	HY 103, HY 104, HY 221, or HY 222	FSM
				3	Literature	EH 207 or EH 208	FSM
				3	Fine Art	ARH 100, ARH 101, ARH 103, CM 122, MU 100, or ARS 160	FSM
				3	Social & Behavioral Science	For more information on HSBS/HFA Requirements: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/HSBS_HFA_Requirements_05202014.pdf	FSM
				3	Sequence Course (HY or EH)		FSM
				3	HSBS/HFA		FSM
					Computer Science - 6 hours		
			CS 214	3	Intro to Discrete Structures	MA 171, CPE 211	FSM
			CS 317	3	Design & Analysis of Algorithms	CS 214, CPE 212, MA 244	FSM
					First-Year Engineering - 4 hours		
			FYE 101	1	First-Year Experience for Engineers	None	FS
			ENG 101	3	Computing for Engineers	Prereq w/Con: MA 171	SM
**	Class has required lab section				**Computer Engineering Option - 53 hours**		
			EE 202	3	Intro to Digital Logic Design	ENG 101	FSM
**			CPE 211	3	Intro to Computer Programming in Engineering	ENG 101, MA 171	FSM
			CPE 212	3	Fundamentals of Software Engineering	CPE 211	FS
			EE 213	3	Electrical Circuit Analysis I	Prereq w/Con: PH 112, MA 201	FSM
			CPE 221	3	Computer Organization	CPE 211, Prereq w/Con: EE 202	FSM
			EE 315	3	Introduction to Electronic Analysis and Design	EE 213	FSM
			EE 316	1	Electronic Measurements & Devices Design Lab	Prereq w/Con: EE 315	FS
			CPE 322	3	Digital Hardware Design Fundamentals	CPE 221, Prereq w/Con: EE 315, Coreq: CPE 324	S
			CPE 324	1	Digital Hardware Design Lab	Coreq: CPE 322	S
			CPE 323	3	Intro to Embedded Computer Systems	CPE 221, Coreq: CPE 325	FS
			CPE 325	1	Lab Component of Intro of CE 323	Coreq: CPE 323	FS
			CPE 353	3	Software Design & Engineering	CPE 212, Prereq w/Con: CS 317	F
			CPE 381	3	Fundamentals of Signals & Sys for Comp Engrs	EE 213, MA 238	FS
			EE 384	1	Digital Signal Processing Laboratory	CPE 381 or Prereq w/Con:EE 383	FS
Select One			EE 385	3	Random Signals and Noise	CPE 381 or EE 382	FSM
			ISE 390	3	Probability & Engineering Statistics I	Prereq w/Con: MA 201	FSM
			CPE 431	3	Intro to Computer Architecture	CPE 322, CPE 323	F
			CPE 434	3	Operating Systems	CPE 221, CPE 353, Coreq: CPE 435	S
			CPE 435	1	Operating Systems Lab	Coreq: CPE 434	S
**			CPE 448	3	Introduction to Computer Networks	CPE 221, Coreq: CPE 448L	FS
			CPE 495	3	Computer Engineering Design I	EE 315, CPE 323, Prereq w/Con: CPE 353	F
			CPE 496	3	Computer Engineering Design II	CPE 495	S
					Computer Engineering Electives - 12 hours		
				3		300+ Level course approved by advisor List of Approved CPE Electives: http://www.uah.edu/images/colleges/engineering/CUE2%20Files/Forms/CPE-Electives_20150415.pdf	
				3			
				3			
				3			

All prerequisite classes must be completed with a "C-" or higher grade.
The Catalog is the final authority for all degree requirements.

Academic Flowchart

COLLEGE OF ENGINEERING
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Computer Engineering
2015/2016 (129 Hours)



Legend Updated: 5/6/15

- Mathematics
- Physics
- Chemistry / Biology
- First Year Engineering
- Computer Engineering Option
- Engineering Electives
- Freshman Comp
- History, Social & Behavioral Science
  Humanity & Fine Art
- Offered only in semester listed
- (3) Credit Hours
- → Prerequisite
- ⇢ Prereq w/concurrency

COLLEGE OF ENGINEERING
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Electrical and Computer Engineering Department: 4-Year Rolling Class Schedule, Fall 2015 - Spring 2019*

	Fall 2015	Anticipated Sections	Spring 2016	Anticipated Sections	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
CPE 112** Intro to Comp Prog in Eng	Y	1	Y	1	N	N	N	N	N	N
CPE 211** Intro to Comp Prog in Eng	N	0	N	0	Y	Y	Y	Y	Y	Y
CPE 212 Fund of Software Eng	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 221 Computer Organization	Y	1	Y	1	Y	Y	Y	Y	Y	Y
CPE 322 Digital Hardware Design	N	0	Y	1	N	Y	N	Y	N	Y
CPE 323 Intro Embedded Comp Sys	Y	1	E	1	Y	E	Y	E	Y	E
CPE 324 Digital Hardware Des Lab	N	0	Y	4	N	Y	N	Y	N	Y
CPE 325 Embedded Comp Sys Lab	Y	5	E	6	Y	E	Y	E	Y	E
CPE 353 Software Design/Eng	Y	2	N	0	Y	N	Y	N	Y	N
CPE 381 Fund of Signals/Systems	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 412 Intro to Parallel Prog	Y	1	N	0	Y	N	Y	N	Y	N

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CPE 423 Hardwr/Softwr Co-Design	Y	1	N	0	N	N	Y	N	N	N
CPE 426 Modeling/Synthesis	N	0	D	1	D	D	D	D	D	D
CPE 427** VLSI Design I	N	0	N	0	Y	N	N	N	Y	N
CPE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D
CPE 431 Intro to Comp Architecture	Y	2	N	0	Y	N	Y	N	Y	N
CPE 434 Operating Systems	Y	1	Y	0	N	Y	N	Y	N	Y
CPE 435 Operating Systems Lab	Y	2	Y	0	N	Y	N	Y	N	Y
CPE 436 Internals of Mod Oper Sys	N	0	N	0	N	Y	N	N	N	Y
CPE 438 Real Time/Embedded Sys	N	0	D	0	D	D	D	D	D	D
CPE 448 Intro to Comp Networks	Y	1	Y	1	E	Y	E	Y	E	Y
CPE 449** Intro to Info Assurance Eng	Y	1	N	0	Y	N	Y	N	Y	N
CPE 453 Senior Software Studio	N	0	Y	1	N	Y	N	Y	N	Y
CPE 495 Comp Eng Design I	Y	1	N	0	Y	N	Y	N	Y	N

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CPE 496 Comp Eng Design II	N	0	Y	2	N	Y	N	Y	N	Y
EE 100** Fund Elec/Comp/Opt Eng	Y	1	Y	1	N	N	N	N	N	N
EE 202 Intro to Digital Logic Des	Y	2	Y	2	Y	Y	Y	Y	Y	Y
EE 203 Digital Logic Design Lab	Y	3	Y	4	Y	Y	Y	Y	Y	Y
EE 213 Electrical Circuit Analysis I	Y	4	Y	4	Y	Y	Y	Y	Y	Y
EE 223 Design/Analysis using Comp	N	0	N	0	N	Y	Y	Y	Y	Y
EE 307 Electricity/Magnetism	Y	1	E	1	Y	E	Y	E	Y	E
EE 308 Electromagnetic Eng	Y	1	Y	1	E	Y	E	Y	E	Y
EE 310 Solid State Fundamentals	Y	1	E	1	Y	E	Y	E	Y	E
EE 313 Electrical Circuit Analysis II	Y	1	E	1	Y	E	D	D	D	D
EE 315 Intro Elec Analysis/Design	Y	1	E	1	Y	E	Y	E	Y	E
EE 316 Electronic Meas/Devices Design Lab	Y	5	Y	5	E	Y	E	Y	E	Y
EE 382 Analytical Meth Contin Time Sys	Y	1	E	1	Y	E	Y	E	Y	E

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EE 383 Analytical Meth Multi/Discr Time Sys	Y	1	Y	1	E	Y	E	Y	E	Y
EE 384 Digital Signal Processing Lab	Y	3	Y	2	E	Y	E	Y	E	Y
EE 385 Random Signals/Noise	Y	1	Y	1	E	Y	E	Y	E	Y
EE 386 Intro to Control/Robotic Systems	Y	1	Y	1	E	Y	E	Y	E	Y
EE 401 Digital Signal Proc Architectures	N	0	D	0	D	D	D	D	D	D
EE 411 Electric Power Systems	Y	1	Y	1	N	Y	N	Y	N	Y
EE 414 Analog and Digital Filter Design	N	0	Y	1	N	Y	N	Y	N	Y
EE 416 Electronics II	N	0	Y	1	N	Y	N	Y	N	Y
EE 423 Communication Sys/Simulation	Y	1	N	0	N	N	Y	N	N	N
EE 424 Intro to Data Comm Networks	Y	1	N	0	Y	N	Y	N	Y	N
EE 426 Communication Theory	N	0	Y	1	N	Y	N	Y	N	Y
EE 427** VLSI Design I	N	0	D	0	D	D	D	D	D	D
EE 428** VLSI Design II	N	0	D	0	D	D	D	D	D	D

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EE 436 Digital Electronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 437 Electr Manufaturing Processes	N	0	N	0	N	N	N	N	N	N
EE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
EE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
EE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
EE 486 Intro to Modern Control Systems	N	0	D	0	D	D	D	D	D	D
EE 494 EE Design Projects	Y	2	Y	2	E	Y	E	Y	E	Y
OPE 441 Optical Systems Design	N	0	D	0	D	D	D	D	D	D
OPE 442 Interference and Diffraction	N	0	D	0	D	D	D	D	D	D
OPE 451 Optoelectronics	Y	1	N	0	Y	N	Y	N	Y	N
OPE 453 Laser Systems	Y	1	N	0	Y	N	Y	N	Y	N
OPE 454 Optical Fiber Communications	N	0	Y	1	N	Y	N	Y	N	Y
OPE 456 Photonics Lab	N	0	Y	1	N	Y	N	Y	N	Y

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OPE 459 **Optical Engineering Design I**	Y	1	N	0	Y	N	Y	N	Y	N
OPE 460 **Optical Engineering Design II**	Y	1	Y	1	N	Y	N	Y	N	Y

Legend

Y	Course will be offered in designated term.
E	Course will likely be offered in designated term, but availability will be determined by faculty availability and budget.
N	Course will not be offered in designated term.
D	Course may be made available given appropriate demand or interest.

* UAH College of Engineering will make every effort to adhere to the class plan schedule, but it reserves the right to make necessary adjustments based on budget and faculty availability.

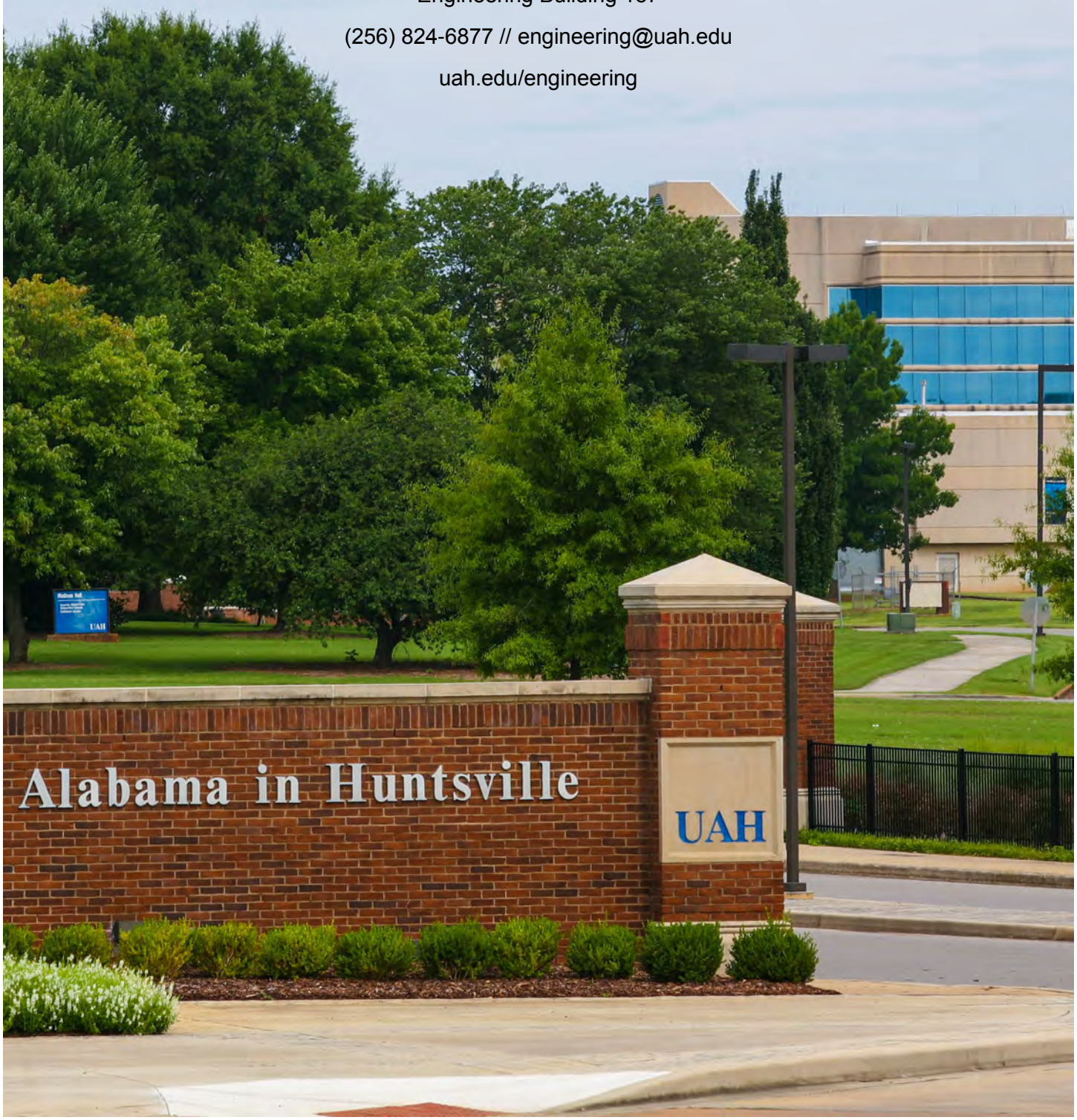
** Course has a required lab section.

COLLEGE OF ENGINEERING

THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Center for Undergraduate Engineering Education

Engineering Building 157

(256) 824-6877 // engineering@uah.edu

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