

3-Year ECE Course Rollout for 2016-2019 (updated September 2016)

All parts of the rollout are subject to updates.

For course descriptions, please refer to <http://www.ece.cmu.edu/courses/course-homepages.html>

Legend:

X = offered

White = Pittsburgh

Blue/T sections = Technology enhanced

Green/SV sections = Silicon Valley

Yellow/P or PP sections = Portugal

Pink/R sections = Rwanda

Orange/GZ sections = Guangzhou, China

Course Name	Course	F16	S17	F17	S18	F18	S19
Introduction to Electrical and Computer Engineering	18100	X	X	X	X	X	X
ECE Sophomore Seminar	18200	X		X		X	
Mathematical Foundations of Electrical Engineering	18202	X	X	X	X	X	X
Introduction to Computer Systems	18213	X	X	X	X	X	X
Electronic Devices and Analog Circuits	18220	X	X	X	X	X	X
Structure and Design of Digital Systems	18240	X	X	X	X	X	X
Signals and Systems	18290	X	X	X	X	X	X
Fundamentals of Electromagnetics	18300	X		X		X	
Fundamentals of Semiconductor Devices	18310		X		X		X
Microelectronic Circuits	18320		X		X		X
Digital Computation	18340		X		X		X
Logic Design Using Simulation, Synthesis, and Verification Techniques	18341	X		X		X	
Introduction to Telecommunications Networks	18345		X		X		X
Embedded Real-Time Systems	18349	X	X	X	X	X	X
Dynamic Systems and Control	18370	X		X		X	
Fundamentals of Electric Power Systems	18372	X		X			
Applied Electrodynamics	18402		X		X		X
Microfabrication Methods and Technology	18403	X		X		X	
Computational Techniques in Engineering	18411				X		X
Neural Technology: Sensing and St	18412		X				X
Nano-Bio-Photonics	18413		X		X		X
Energy Systems	18418		X		X		X
Analog Integrated Circuits I	18421	X		X		X	
Digital Integrated Circuits I	18422	X		X		X	

Introduction to Computer Architecture	18447		X		X		X
Networked Cyberphysical Systems	18451		X		X		X
Embedded Control Systems	18474		X		X		X
Telecommunications: Technology, Policy and Management	18482		X		X		X
Introduction to Computer & Network Security & Applied Cryptography	18487	X		X		X	
Fundamentals of Signal Processing	18491		X		X		X
Special Topics: Speech Processing	18492	X		X		X	
Electroacoustics	18493	X				X	
Sensor Systems Design	18510		X		X		X
Integrated Circuit Design Project	18525		X		X		X
Rapid Prototyping of Computer Systems	18540		X		X		X
Advanced Digital Design Project	18545	X		X		X	
Embedded Systems Design	18549		X		X		X
Digital Communications and Signal Processing Systems Design	18551		X		X		X
Mechatronic Design	18578		X		X		X
Electrical Energy Conversion, Control, and Management	18587	X		X		X	
Foundations of Computer Systems	18600	X		X		X	
Foundations of Computer Systems	18600SV	X		X		X	
Foundations of Computer Systems	18600GZ	X		X		X	
Entrepreneurship and Innovation in Technology	18601	X	X	X	X	X	X
Neural Technology: Sensing and St	18612		X				X
Nano-Bio-Photonics	18613		X		X		X
Microelectromechanical Systems	18614	X		X		X	
Micro/nanofabrication	18615		X		X		X
Smart Grids and Future Electric Energy Systems	18618T			X		X	
Digital Integrated Circuits II	18622	X		X		X	
Analog Integrated Circuits II	18623	X		X		X	
System on Chip Design	18625		X		X		X
Introduction to Information Security	18631	X		X		X	
Introduction to Information Security	18631SV	X		X		X	

Introduction to Hardware security	18632		X		X		X
Wireless Network Security	18637		X		X		X
Wireless Network Security	18637SV		X		X		X
Mobile Security	18638	X		X		X	
Mobile Security	18638SV	X		X		X	
Reconfigurable Logic: Technology, Architecture and Applications	18643	X		X		X	
Mobile Hardware for Software Engineers	18644SV	X		X		X	
How to Write Fast Code	18645A		X		X		X
How to Write Fast Code	18645SV		X		X		X
How to Write Fast Code	18645T		X		X		X
Low-Power System-on-Chip Architecture	18646SV		X		X		X
Connect Embedded Systems Architecture	18647SV			X		X	
Introductory Embedded Systems	18648	X		X		X	
Distributed Embedded Systems	18649			X		X	
Policies of Wireless Systems and the Internet	18650	X		X		X	
Networked Cyberphysical Systems	18651		X		X		X
Foundations of Software Engineering	18652A		X		X		X
Foundations of Software Engineering	18652RW		X		X		X
Foundations of Software Engineering	18652SA	X		X		X	
Foundations of Software Engineering	18652SB	X		X		X	
Foundations of Software Engineering	18652SV		X		X		X
Software Architecture and Design	18653A		X		X		X
Software Architecture and Design	18653SV		X		X		X
Software Verification, Validation and Testing	18654SV	X		X		X	
Service Oriented Computing	18655A	X		X		X	
Service Oriented Computing	18655SV	X	X	X	X	X	X
Data Intensive Workflow Development for Software Engineers	18656SV	X		X		X	
Decision Analysis and Engineering Economics for Software Engineers	18657SV		X		X		X
Software Requirements and Interaction Design	18658SV	X		X		X	
Software Engineering Methods	18659SV		X		X		X

ULSI Technology Status and Roadmap for System on Chips and System in Package	18664	X		X		X	
Analytical Performance Modeling & Design of Computer Systems	18687	X		X		X	X
Analytical Performance Modeling & Design of Computer Systems	18687SV	X		X		X	X
Introduction to Neuroscience for Engineers	18690		X		X		X
Statistical Discovery and Learning	18697	X					
Statistical Discovery and Learning	18697SV	X					
Neural Signal Processing	18698		X		X		X
Elements of Photonics for Communication Systems	18712	X		X		X	
Mixed-Signal Integrated Circuits	18721	X					
RF Integrated Circuit Design and Implementation	18723		X		X		X
Advanced Digital IC Design	18725			X		X	
Introduction to Computer Security	18730	X		X		X	
Introduction to Computer Security	18730SV	X		X		X	
Network Security	18731		X		X		X
Network Security	18731SV		X		X		X
Secure Software Systems	18732		X		X		X
Secure Software Systems	18732SV		X		X		X
Applied Cryptography	18733		X		X		X
Foundations of Privacy	18734	X		X		X	
Foundations of Privacy	18734SV	X		X		X	
Special Topics in Security: Formal Foundations of Software Security	18739M		X		X		X
Special Topics in Security: Cyber Security III	18739N		X		X		X
Parallel Computer Architecture	18742		X		X		X
Energy Aware Computing	18743	X		X		X	
Energy Aware Computing	18743SV	X		X		X	
Rapid Prototyping of Computer Systems	18745		X		X		X
Advanced Storage Systems	18746	X		X		X	
Wireless Device Architecture	18747SV	X		X		X	
Wireless Sensor Networks	18748		X		X		X
Building Reliable Distributed Systems	18749	X		X		X	
Applied Stochastic Processes	18751	X	X	X	X	X	X
Applied Stochastic Processes	18751SV		X		X		

Estimation, Detection and Identification	18752		X		X		X
Information Theory	18753		X		X		X
Networks in the Real World	18755	X		X		X	
Packet Switching and Computer Networks	18756	X		X		X	
Packet Switching and Computer Networks	18756RW	X					
Network Management and Control	18757		X				
Wireless Communications	18758	X		X		X	
Wireless Networks	18759		X		X		X
Circuit Simulation: Theory and Practice	18762	X					
Digital System Testing and Testable Design	18765T				X		X
Linear Systems	18771	X		X		X	
Non linear control	18776		X		X		X
Complex Large-Scale Dynamic Systems	18777			X		X	
Speech Recognition and Understanding	18781	X		X		X	
Speech Recognition and Understanding	18781SV	X		X		X	
Machine Learning	18782GZ	X					
Machine Learning	18782PP	X		X		X	
Medical Imaging	18791		X		X		X
Advanced Digital Signal Processing	18792	X		X		X	
Image and Video Processing	18793	X					
Pattern Recognition Theory	18794	X		X		X	
Bioimage Informatics	18795		X		X		X
Machine Learning for Signal Processing	18797	X		X		X	
Machine Learning for Signal Processing	18797SV	X		X		X	
Special topics in signal processing Compressive sensing and sparse optimization	18799J			X		X	
Applied Physics: Fund. of Semiconductors and Nanostructures	18817		X				X
Special topics in Applied Physics: Beyond CMOS Devices & Circuits	18819K			X			
Distributed Systems	18842T		X		X		X
Mobile Computing Systems and Applications	18843	X		X		X	
Mobile Computing Systems and Applications	18843S		X		X		X
Internet Services	18845		X		X		X

Special Topics in Embedded Systems: Sports Technology	18848D		X		X		X
Special Topics in Communication: Information-Flows in Networks: Communications, Computation and Neuronal	18859H			X		X	
Special Topics in Communication: Telecommunications Policy in Developing Countries	18859RW		X		X		X
Special Topics in Communications: Network Economics and Resource Allocation	18859SI	X					
Engineering and Economics for Future Electric Energy Systems	18875		X		X		X
Special Topics in Systems and Control: Optimization in Energy Networks	18879M	X					
Special Topics in Energy Systems: Power Electronics	18882A			X		X	
Special Topics in Energy Systems: Power Electronics	18882K	X		X		X	
Special Topics in Energy Systems: Microgrids and New Generation Power Systems	18882R	X		X		X	
Special Topics in Signal Processing: Data and Inference (DI)	18899A1	X		X		X	
Special Topics in Signal Processing: Applied Machine Learning (AML)	18899A2	X		X		X	
Special Topics in Signal Processing: Data and Inference (DI)	18899C1	X		X		X	
Special Topics in Signal Processing: Applied Machine Learning (AML)	18899C2	X		X		X	
Special Topics in Signal Processing: Data and Inference (DI)	18899K1	X		X		X	
Special Topics in Signal Processing: Applied Machine Learning (AML)	18899K2	X		X		X	
Special Topics in Signal Processing: Data and Inference (DI)	18899R1	X		X		X	
Special Topics in Signal Processing: Applied Machine Learning (AML)	18899R2	X		X		X	
Special Topics in Signal Processing: Data Science: A Networks Perspective	18899E	X					