



COLLEGE OF ENGINEERING AND APPLIED SCIENCES

UNIVERSITY AT ALBANY State University of New York

Department of Electrical and Computer Engineering

Program Planner-BS ECE

Name _____

ID _____

Graduation Requirements: 120 credits minimum [ECE Major Credits: 100]

General Education

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|---|---|
| <input type="checkbox"/> Art | <input type="checkbox"/> Math |
| <input type="checkbox"/> Challenges in the 21 st Century | <input type="checkbox"/> Natural Sciences |
| <input type="checkbox"/> Foreign Language | <input type="checkbox"/> Social Science |
| <input type="checkbox"/> Humanities | <input type="checkbox"/> US History |
| <input type="checkbox"/> International Perspectives | <input type="checkbox"/> Writing and Critical Inquiry |

Electrical and Computer Engineering Core Courses (38 Credits)

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|---|--|
| <input type="checkbox"/> CEN 110 (*CEN 140): Intro to Engineering (2) | Pre/Co-requisite: MAT 112 or MAT 118 |
| <input type="checkbox"/> CEN 111 (*CEN 150): Introduction to ECE (4) | Pre/Co-requisite: MAT 112 or MAT 118 |
| <input type="checkbox"/> CEN 141 (*CEN 200): Programming for Eng (4) | Pre: MAT 112/118 and CEN 111 |
| <input type="checkbox"/> CEN 202 (*CEN 280): Electric Circuits (4) [Spring] | Pre-requisite: PHY 150/152, Pre/Co: MAT 220/222, MAT 311 |
| <input type="checkbox"/> CEN 231(*CEN 340): Digital Systems (4) [Fall] | Pre-requisite: CEN 210, CEN 111(*150), and CEN 141(*200) |
| <input type="checkbox"/> CEN 300 (*CEN 380): Intro to Electronics (4) [Fall] | Pre-requisite: CEN 202 (*280) |
| <input type="checkbox"/> CEN 310: Engineering Electromagnetics (4) | Pre-requisite: CEN 202 (*280) |
| <input type="checkbox"/> CEN 371(*CEN 350): Signals and Systems (3) [Fall] | Pre-requisite: CEN 202 (*280) |
| <input type="checkbox"/> CEN 442 (*CEN 430): Sys. Analysis & Des (3) [Spring] | Pre-requisite: CEN 333 |
| <input type="checkbox"/> CEN 490 (*CEN 440): Design Lab I (3) [Fall] | Pre-requisite: CEN 371 (*350), CEN 333, CEN 300 (*380) |
| <input type="checkbox"/> CEN 491(*CEN 450): Design Lab II (3) [Spring] | Pre-requisite: CEN 490 (*440) |

Computer Science Courses (11 Credits)

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|---|--|
| <input type="checkbox"/> CEN 210 OR CSI 210: Discrete Structures (4) | <input type="checkbox"/> CEN 213 OR I CSI 213: Data Structures (3) |
| <input type="checkbox"/> CEN 333 OR CSI 333: Programming at the Hardware Software Interface (4) | |

Mathematics and Science Courses (33 Credits)

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|--|---|
| <input type="checkbox"/> CHM 120: General Chemistry I (3) | <input type="checkbox"/> MAT 112 OR 118 OR TMAT 118: Calculus I (4) |
| <input type="checkbox"/> CHM 124: General Chemistry Lab I (1) | <input type="checkbox"/> MAT 113 OR 119 OR TMAT 119: Calculus II (4) |
| <input type="checkbox"/> PHY 140 OR APHY 142: Physics I: Mechanics (3) | <input type="checkbox"/> MAT 214 OR 218: Calculus of Several Variables (4) |
| <input type="checkbox"/> PHY 145: Physics Lab I (1) [Fall] | <input type="checkbox"/> MAT 220 OR 222: Linear Algebra (3) |
| <input type="checkbox"/> PHY 150 OR APHY 152: Physics II: Electromagnetism (3) | <input type="checkbox"/> MAT 311: Ordinary Differential Equations (3) |
| <input type="checkbox"/> PHY 155: Physics Lab II (1) [Spring] | <input type="checkbox"/> MAT 370: Prob. & Stat. for Eng. & the Sci (3) [Fall] |

ECE Electives – Electives for Depth and Breadth (18 Credits)

- Depth - 9 credits** (3 courses) selected from a single concentration area in ECE, two of which are designated as core.
- Breadth – 6 credits** (2 core courses) selected from two different concentration areas in ECE but outside the student's depth area.
- Elective: 3 credits** (1 course) from any area of your choosing.

Concentration Areas

Computers	Electronics	Signal Processing, Communications & Control
CEN 400 Operating Systems (core)	CEN 401 Advanced Electronics (core)	CEN 416 Computer Comm. Nets. (core)
CEN 404 Computer Organization (core)	CEN 411 Microwave Engineering (core)	CEN 462 Digital Signal Processing (core)
CEN 453 Cyber-Physical Systems (core)	CEN 413 Electrical Energy Sys. (core)	CEN 463 Digital Image Processing (core)
CSI 402 Systems Programming (core)	CEN 420 Intro. to VLSI (core)	CEN 471 Communication Systems (core)
CSI 403 Algorithms & Data Structures (core)	CEN 422 Integrated Circuit Dev. (core)	CEN 481 Linear Control Theory (core)
CEN 416 Computer Comm. Nets.	CEN 412 Antenna Engineering	CEN 451 Robotics
CEN 431 Reconfigurable Computing	CEN 421 Digital ASIC Design	CEN 452 Internet of Things
CEN 441 GPU Architecture & Prog.	CEN 431 Reconfigurable Computing	CEN 472 Advanced Digital Comm.
CEN 451 Robotics	CEN 453 Cyber-Physical Systems	CEN 473 Radiowave Prop. & Remote Sensing
CEN 452 Internet of Things	CEN 441 GPU Architecture & Prog.	CSI 426 Cryptography
CSI 435 Introduction to AI		
CSI 436 Machine Learning		

Curriculum Map

Year 1	
Fall	Spring
MAT 112/118 (4) (MATH)	MAT 113/119 (4)
PHY 140/142 (3)	CEN 141(*200) (4)
PHY 145 (1)	PHY 150/152 (3)
CEN 110 (*140) (2)	PHY 155 (1)
CEN 111 (*150) (4)	CEN 210 (4)
WCI (UNI110) (3)	
Total: 17	Total: 16

Year 2	
Fall	Spring
MAT 214/218 (4)	MAT 311 (3)
CHM 120 (3) (NATSCI)	CEN 202 (*280) (4)
CHM 124 (1)	MAT 220/222 (3)
CEN 213 (3)	CEN 333 (4)
CEN 231 (*340) (4)	US HIST (3)
Total: 15	Total: 17

Year 3	
Fall	Spring
CEN 371(*350) (3)	CEN 442 (*430) (3)
MAT 370 (3)	ECE Elective (3)
CEN 310 (4)	ECE Elective (3)
CEN 300 (*380) (4)	SOCIAL SCIENCES (3)
HUMANITIES (3)	INTL PERSPECTIVES (3)
Total: 17	Total: 15

Year 4	
Fall	Spring
CEN 490 (*440) (3)	CEN 491(*450) (3)
ECE Elective (3)	ECE Elective (3)
ECE Elective (3)	ECE Elective (3)
CHALLENGES (3)	FOREIGN LANG (4)
ARTS (3)	
Total: 15	Total: 13

AVN: _____

Advisor: _____

COURSE RECOMMENDATIONS:

Recommendation: When selecting General Education courses, try to select ones that are applicable to multiple categories. This will decrease the number of courses you will need to take outside of the major.