Electrical Electives (EE) and Technical Electives (TE) for the Electrical Engineering Option

Guideline for electives selection for Electrical Engineering option:
1. FOUR Electrical Electives are to be selected from list 1.1.
2. Any TWO Technical Electives are to be selected from list 1.2.
3. One Science Math and Engineering elective (any Science, Math, or Engineering course above 200 level)
4. One general elective (any course 200 level and above)
5. Two lower level Hum/Soc electives, and two upper level Hum/Soc electives. For more info on humanity electives, see http://soe.rutgers.edu/oaa/electives
6. Each 4-credit Computer Science (Livingston College) course constitutes one elective course.
7. Students with a cumulative average of 3.2 or better may take a graduate level course as a Technical or Electrical Elective with the approval of their advisor, instructor of the course, and the Dean’s office.

LIST 1.1: ELECTRICAL ELECTIVES

14:332:322 Principles of Communication Systems
14:332:351 Programming Methodology II (The course 198:213 or 198:214 can be taken in place of 332:351)
14:332:376 Virtual Reality (14:332:378 is a corequisite)
14:332:382 Electromagnetic Fields
14:332:402 Sustainable Energy: Choosing among options
14:332:411 Electrical Energy Conversion
14:332:415 Introduction to Automatic Control Theory
14:332:417 Introduction to Control System Design
14:332:421 Wireless Communication Systems
14:332:423 Computer and Communication Networks
14:332:424 Introduction to Information and Network Security
14:332:427 Communication System Design
14:332:434 Introduction to Computer Systems
14:332:435 Topics in Electrical and Computer Engineering
14:332:436 Topics in Electrical and Computer Engineering
14:332:437 Digital System Design
14:332:445 Topics in Electrical and Computer Engineering
14:332:446 Topics in Electrical and Computer Engineering
14:332:447 Digital Signal Processing Design
14:332:451 Introduction to Parallel and Distributed Programming
14:332:452 Software Engineering
14:332:453 Mobile App Engineering and User Experience
14:332:456 Network-Centric Programming (Usually offered only in alternate years)
14:332:460 Power Electronics
14:332:463 Analog Electronics
14:332:464 RF Integrated Circuits
14:332:465 Physical Electronics
14:332:466 Opto-Electronic Devices
14:332:467 Microelectronic Processing
14:332:472 Robotics and Computer Vision
14:332:474 Introduction to Computer Graphics (The course 198:428 can be taken in place)
14:332:479 VLSI Design
LIST 1.2: TECHNICAL ELECTIVES

14:xxx:xxx SOE 200+ level courses from other departments are accepted as technical electives (where “xxx” is a departmental code and course code)
14:332:491/2 Special Problems/Independent Study (not open to students on academic probation)
14:332:496/7 Co-Op and Internship (not open to students on academic probation)
01:198:314 Principles of Programming Languages
01:198:323* Numerical Analysis and Computing
01:198:334 Introduction to Imaging and Multimedia
01:198:336 Principles of Information and Data Management
01:198:344 Design and Analysis of Computer Algorithms
01:198:417 Distributed Systems: Concepts and Design
01:198:424 Modeling and Simulation of Continuous Systems
01:198:440 Introduction to Artificial Intelligence
01:198:442 Topics in Computer Science
01:198:443 Topics in Computer Science
01:198:444 Topics in Computer Science
01:198:445 Topics in Computer Science
01:198:440 Introduction to Artificial Intelligence
01:198:452 Formal Languages and Automata
01:640:250 Introductory Linear Algebra
01:640:311 Advanced Calculus I
01:640:312 Advanced Calculus II (640:421 Advanced Calculus for Engineers is not acceptable as this duplicate 332:345 Linear Systems and Signals)
01:640:350 Linear Algebra
01:640:351 Introduction to Abstract Algebra I
01:640:352 Introduction to Abstract Algebra II
01:640:354 Linear Optimization
01:640:357 Topics in Applied Algebra
01:640:373* Numerical Analysis I
01:640:374* Numerical Analysis II
01:640:403 Introduction to Theory of Functions of a Complex Variable
01:640:423 Elementary Partial Differential Equations (01:640:421 is not acceptable)
01:640:424 Stochastic Models in Operations Research
01:640:428 Graph Theory
01:640:454 Combinatorics
01:640:478 Mathematical Theory of Probability II
01:750:313 Modern Physics I
01:750:314 Modern Physics II
01:750:351** Thermal Physics I
01:750:352 Thermal Physics II
01:750:406 Introductory Solid State Physics
01:750:417 Intermediate Quantum Mechanics
01:750:421 Fluid and Plasma Phenomena
01:750:464 Mathematical Physics
01:960:463 Regression Methods
Independent Study/Special Problems (491, 492), other than 332, are not, in general, considered as electives.

**NOTES:**

* Credit not given for both 01:198:323-324 and 01:640:373-374

** Credit not given for both 01:750:351 and 14:650:351

*** Credit will not be given to 01:198:416