Computer Engineering curriculum change: 
Elective tracks for greater depth

The **Elective Track** curriculum change in the CCNY Computer Engineering program solves three problems:

1. The old elective structure allowed one CSc elective, one EE elective, and one “Engineering Science” elective (Semiconductors or Thermodynamics). This scattering of elective areas prevented “depth”—pursuing one subject area in more than one course.
   - **The new elective tracks require students to take at least two courses, in many cases as a prerequisite sequence, in one general area.**

2. EE 339 (Semiconductors) has changed to require Phys 323 (Quantum Mechanics for Applied Physicists), which did not satisfy any requirement in the CpE major. This meant that CpE majors could not take EE 339 (without taking an extra course).
   - **With elective tracks, both courses count toward the major, allowing CpE students to once again take Semiconductors.**

3. Students formerly took exactly one elective from CSc and one from EE. This excluded courses the prerequisite for which was another elective from the same department (unless the student took extra courses).
   - **Elective tracks include entire prerequisite sequences.**

The **old curriculum** required all three of the following courses:
- *CSc elective:* one CSc course, from a list; and
- *EE elective:* one EE course, from a list; and
- *Engineering Science elective:* Engr 230 (Thermodynamics) or EE 339 (Semiconductors).

The **new curriculum** replaces these three courses with:
- **One** CSc or EE elective as defined above; and
- **Two courses** from one of the following **elective tracks**. Prerequisites force some grouping in students’ choices here:

**[Systems Track]** Two of the following:
- Phys 323 (Quantum Mech. for Applied)  Engr 230 (Thermodynamics)
- EE 339 (Semiconductor Mat'l's & Devices)  EE 333 (Antennas/Microwave/Fiber)
- EE 371 (Linear Feedback Systems)  EE 451 (Communication Electronics)
- EE 460 (Computer Communication Sys.)  EE 463 (Wireless Communication)
- CSc 412 (Computer Networks)

**[Computation & Signal Processing Track]** Two of the following:
- CSc 301 (Scientific Programming)
- CSc 470 (Image Processing)  CSc 471 (Computer Vision)
- CSc 472 (Computer Graphics)  CSc 479 (Digital Libraries)
- CSc 599.44 (Neural Computing)  EE 453 (Digital Signal Processing)
- CSc 11900 (Pattern Recognition) or undergrad equivalent
- EE 12200 (Image Processing) or undergrad equivalent

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