ELECTRICAL ENGINEERING CURRICULUM CHECKLIST May 2024

Name: _____ Date: _____ Approval: _____

Note: All courses have an ELEN designator unless otherwise specified.

1. First & Second Year Program Requirements - Technical (up to **42.5 pts.)**

(for details, see http://bulletin.engineering.columbia.edu/electrical-engineering.

COURSE	GRADE	COURSE	GRADE
MATH V1101 Calculus I (if needed)	_____	MATH V1102 Calculus II (if needed)	_____
APMA E2000 Multivariable Calculus	_____	ENGI E1006 Intro Comp. for Engineers	_____
PHYS C1401 (or alternates)	_____	PHYS C1402 (or alternates)	_____
PHYS C1403 (or alternates)	_____	PHYS C1494 (or alternates)	_____
CHEM C1403 (or alternates)	_____	ELEN E1201 Intro to EE	_____
ENGI E1102 Art of Engineering	_____	APMA E2101 (or alternates)	_____

Circle alternates used for APMA E2101, if any: **or** {MATH V2030 **and** (APMA E3101 or MATH V2010**)**

2. Core Required EE Courses & Labs (up to 38.5 pts.) (See bulletin for comments and alternatives.)

COURSE	GRADE	COURSE	GRADE
E3801/E3084 Signals & Systems / Lab	_____/_____	CSEE W3827/E3082 Fund. Comp. / Lab	_____/_____
E3201/E3081 Circuit Analysis / Lab	_____/_____	E3331/E3083 Electronic Circuits / Lab	_____/_____
E3106 Solid State	_____	E3401 Electromagnetics	_____
E3043 Sol. State, Mwave, & F.Optics Lab	_____	E3701 Intro. Comm. Sys. or	
IEOR E3658 Probability (or alternate)	_____	CSEE W4119 Computer Networks	_____
COMS E313* Data Structures	_____	ELEN E3399 EE Practice	_____

3. Capstone - E3390 EE Senior Design Project (3pts.) _____

With special permission arranged in ELEN E3399, requiring a more extensive project and presentation, one of the following may appear on transcript instead: ELEN E4350, CSEE W4840, or ELEN E3998/E4998. **Must** be taken near the end of the program.

ALTERNATE COURSE: _____ Approval: _____

4. Depth Technical Electives (6 pts.) Two courses from a single one of the following four areas not used for #1-3. Note that some more advanced courses can be added to these lists with advisor approval.

a. *Photonics, Solid State Devices, and Electromagnetics*
E4193, E4401, E4411, E4420, E4944, E4488.

b. *Circuits and Electronics*
E4215, E4312, E4314, EECS E4321, E4350, E4361.

c. *Signals & Systems*
E4511, E4720, E4810, E4815, E4830, E4835, EEME E3601, EEME E4601, EEOR E4650.

d. *Communications & Networking*
E3701, CSEE W4119, CSEE W4140, EECS E4764, E4702, E4703, COMS W4181.

COURSE 1: _____ COURSE 2: _____

5. Breadth Technical Electives (6 pts.) Two 3000+ level courses with mostly engineering content from outside the selected depth area (a-d):

- Other EE-listed courses (except rare ones not sufficiently technical, other courses used for #1-5 or those with significant overlap, or project course such as E3998/4998 unless documented as being technical and outside the depth area.)
- Other CS-listed courses (except for COMS W3203, COMS W3101 & 3102, not sufficiently technical courses covering topics such as ethics or business, other courses used for #1-5 or those with significant overlap, or project courses unless documented as being technical and outside depth area).
- APPH E4100, APPH 4110, APPH E4112 allowed if not using depth area **a**.
- Courses with mostly engineering content from any other SEAS department may be acceptable as long as they do not significantly overlap with other courses used for #1-5. Please get advisor approval in advance.

COURSE 1: _____ COURSE 2: _____

6. Additional Technical Electives (6 pts.)

Eligible courses include any 3000+ level technical (including math or science) courses that do not overlap with other courses used for #1-6. Please get advisor approval in advance. Music Dept. courses are not allowed. Economics Dept. course not generally allowed. 3 pts. can be waived if 6 pt. alternate used for APMA E2101 requirement. Waiver does not generally apply to combined-plan students unless advisor certifies that unusually advanced courses used to fill APMA E2101 requirement.

COURSE 1: _____ COURSE 2 (if needed): _____

7. Non-Technical Course Requirement (27 pts.) (Administered by the Center for Student Advising. For details see http://bulletin.engineering.columbia.edu/first-yearsophomore-program.) _____

8. General Requirements (Total ≥128 pts., ≥ 60 pts. at Columbia, 2 pts. Phys. Ed., GPA ≥ 2.0) _____