

**For new incoming freshmen:**

**Option 1 (Capstone without an AI/ML component) (12~13 credits)**

- EGR 241 – Python for Engineering Applications (spring) (4 credits)
- EGR 441 – Intro AI/ML for Engineering Applications (spring) (4 credits)
- Ethics Course (select one course, 1-4 credits)
  - Options include ELE 400, CVE 400, EGR/PHL 316G, OCE 416, PHL 212, CSC 320
- Elective Courses (select at least one)
  - EGR 444 – Advanced AI/ML for Engineering Applications(4 credits);
  - EGR 404 – Building Tools with Generative AI (3 credits)
  - CSC 461 – Machine Learning (4 credits)
  - ELE 492 – Special Topics (4 credits)

**Option 2 (Capstone with a significant AI/ML component) (12 credits)**

- EGR 241 – Python for Engineering Applications (spring) (4 credits)
- EGR 441 – Intro AI/ML for Engineering Applications (spring) (4 credits)
- Ethics Course (select one course, 1-4 credits)
  - Options include ELE 400, CVE 400, EGR/PHL 316G, OCE 416, PHL 212, CSC 320
- Capstone Design (3 credits)

**Current Junior Students (without prior AI/ML courses)**

For junior students who have not taken any AI/ML courses (EGR 441, 444, or 404), they may still complete the certificate program through the following pathway:

**(a) Python requirement (EGR 241)**

CPE students, and some ELE students, already have strong programming skills (CSC 211, CSC 200). With additional proof of Python competence, such as completing a free online course during the summer, this can be approved as equivalent to EGR 241.

MCE and OCE students have already taken Python.

**(b) EGR 441:**

Take EGR 441 in Spring 2027.

**(c) EGR 404:**

Take EGR 404. ( **Fall, Summer terms**) **No particular prerequisites; can be taken as Sophomore, Junior, or Senior** (3 credits)

**Junior Students (already taking EGR 441 or equivalent)**

**(a) Python requirement:**

Completion of EGR 441 demonstrates sufficient Python competence. One prior course (CSC 200 or CSC 211) can be used to replace EGR 241.

(b) **EGR 441:**

Already completed or in progress.

(c) **Advanced course, capstone, or special topics course:**

In Fall 2026, if a student is assigned a capstone design project with a significant AI/ML component, they will be all set.

If students do not have access to a capstone design project with an AI/ML component, they can:

- Take EGR 444, or
- Enroll in a special topics course focused on AI/ML under the supervision of a faculty member (this is why I included ELE 492).