

For new incoming freshmen and current freshmen:

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

- EGR 241 – Python for Engineering Applications (**Freshman/Sophomore spring or potentially summer from 2027**) (4 credits)
- EGR 441 – Intro AI/ML for Engineering Applications (**Junior/Senior spring**) (4 credits)
- Ethics Course (select one course, 1-4 credits)
 - Options include **ELE 400 (Mandatory in ELE curriculum)**, 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) (**Senior Fall - NOTE: to enroll here, EGR 441 must be taken in Junior Spring**);
 - EGR 404 – Building Tools with Generative AI (**Fall, Summer terms**) **No particular prerequisites, can be taken as Sophomore, Junior, or Senior** (3 credits)
 - CSC 461 – Machine Learning (4 credits)
 - ELE 492 Section 19 – Special Topics (**3-4 credits - research project can be taken with any ELE faculty, but has to be AI/ML certified by the Program director**)

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

- EGR 241 – Python for Engineering Applications (**Freshmen or Sophomore spring**) (4 credits)
- EGR 441 – Intro AI/ML for Engineering Applications (**Junior spring**) (4 credits)
- Ethics Course (select one course, 1-4 credits)
 - Options include **ELE 400 (mandatory in ELE curriculum)**, CVE 400, EGR/PHL 316G, OCE 416, PHL 212, CSC 320
- Capstone Design (3 credits) - **project to be AI/ML certified by the program director**

Current Sophomore Students

Current sophomore students can follow one of the paths above, except for EGR 241 Python. In order to enroll in EGR 441, they need to demonstrate Python proficiency by means of completing a free online course during the summer or fall. With proof of Python proficiency, CSC 211 or CSC 200 can be used towards the certificate

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:

(z) **ELE 400** is mandatory for all ELE students

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

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. It is offered for Summer 2026 and Fall 2026.

Junior Students (already taking EGR 441 or equivalent)

(z) **ELE 400** is mandatory for all ELE students

(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 (Fall), or
- Enroll in a special topics course focused on AI/ML under the supervision of a faculty member (this is ELE 492 - section 19).
- Take EGR 404. **Fall, Summer terms**