

ABET Review: Embedded Spring 2025

Course Offerings & Enrollments

| | | Aut23 | Win24 | Spr24 | Sum24 | Aut24 | Win25 | Spr25 |
|-----|---|--------|---------|--------|-------|--------|--------|--------|
| 271 | Digital Circuits and Systems | 93 | 100 | 100 | 42 | 138 | 98 | 100 |
| 371 | Design of Digital Circuits and Systems (EE/CSE) | 56/3 | 53/7 | 57/18 | | 44/10 | 64/8 | 61/25 |
| 469 | Computer Architecture I (EE/CSE) | 80/9 | 47/2 | 75/6 | 34 | 81/9 | 56/7 | 79/10 |
| 470 | Computer Architecture II (EE/CSE) | | | 24/11 | | | | 27/3 |
| 474 | Introduction to Embedded Systems (EE/CSE) | 50/20 | 52/15 | 50/22 | 42 | 50/19 | 58/15 | 50/15 |
| 475 | Embedded Systems Capstone (EE /CSE/EE grad) | 26/4/5 | 23/4/10 | 32/7/9 | | 23/6/6 | 29/6/4 | 27/7/5 |

Enrollments: ECE/CSE, or ECE/CSE/grad

ABET Missing End of Course Reports

| Missing Quarter | Course |
|-----------------|--------|
| None | |

ABET Missing Outcomes from Reports

| Missing Quarter | Course |
|---------------------|--------|
| Spring 2024 (Rania) | 469 |
| Spring 2024 (Iyer) | 474 |
| Spring 2024 (Rania) | 475 |

End of Course Reports – issues found

271 – Spr24, Aut24, Win25: (Win25 Hauck) “There were a substantial number of students who gave up during the quarter. 3 did essentially no labs, several others stopped after about lab #4. I failed 3 students due to just not doing the labs, and 4 others for demonstrating no understanding of the material. Never seen this before. Will have to watch in future quarters to see if there's a trend - it is so out-of-character for a consistently solid course that I'm puzzled.”, (Aut24 Hauck): Lab space cut in half, causing crowding. (Spr24 Hauck): Lots of cheating.

371 – Aut'24, Win'25: Rania suggests dropping “205 or 215” as prereq, just use 271.

469 – Spr24, Aut24: (Aut24 Hauck): Lab space cut in half, causing crowding.

470 – :

474 – Spr24, Aut24, Win25: (Aut24 Iyer): Wants to move to ESP32. Students did really well in the class. (Spr24 Iyer): “Student preparation for this course always varies quite a bit considering there is only one quarter of programming prerequisite. I always review the relevant material but this makes it a little slow to get started.”

475 – Spr25, Aut24, Win24: (Aut24 Li): “As a capstone course, I think most of the issues we observed were the result of gaps in pre-requisite classes. I think that if those classes, to the extent possible, emphasized more fundamental concepts (e.g., pointers in C, digital communication protocols like i2c), students would have a more enjoyable experience in this class.”

Mostly nothing big/consistent

Lab space issue is being fixed

ABET outcomes

Novice/Developing/Competent/Exemplary

| Course | Title | Quarter Assessed | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--------|-------------------|------------------|----------|----------|---------|---------|---------|----------|---------|----------------------|
| 271 | Intro Digital | Spr24 | | 2/3/9/1 | | | | | | |
| 271 | " | Aut24 | | 0/1/9/2 | | | | | | |
| 271 | " | Win25 | | 0/0/4/11 | | | | | | |
| 371 | Digital 2 | Spr24 | CSE | | | | | | | |
| 371 | " | Aut24 | | | | | | | | |
| 371 | " | Win25 | | | | | | | | None assigned |
| 469 | CompArch I | Spr24 | | | | | | | | Outcomes not entered |
| 469 | " | Aut24 | 0/4/6/4 | 0/2/0/12 | | | | 0/2/5/7 | | |
| 469 | " | Win25 | CSE | | | | | | | |
| 470 | CompArch II | Spr24 | CSE | | | | | | | |
| 474 | IntroEmbedded | Spr24 | | | | | | | | Outcomes not entered |
| 474 | " | Aut24 | 0/0/2/10 | 0/0/2/10 | | | | 0/0/2/10 | | |
| 474 | " | Win25 | 0/0/4/8 | 0/0/4/8 | | | | 0/0/4/8 | | |
| 475 | Embedded Capstone | Spr24 | | | | | | | | Outcomes not entered |
| 475 | " | Aut24 | | | 0/1/2/6 | 0/1/1/7 | 2/1/1/5 | | 1/2/3/3 | |
| 475 | " | Win25 | | | 0/0/0/8 | 0/0/0/8 | 0/0/0/8 | | 0/0/0/8 | |

ABET outcomes (last year)

| | | ABET Outcome (Nov./Devel./Comp./Exemp.) | | | | | | | | |
|--------|-------------|---|----------|---|---------|---------|----------|---------|------------------|---|
| Course | Quarter | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Notes | |
| 271 | Aut'23 | | 0/0/3/9 | | | | | | | |
| 469 | Spr'23 | 0/1/3/8 | 0/0/2/10 | | | | 0/0/2/10 | | No ABET assigned | |
| | Aut'23 | 1/2/6/3 | 1/0/3/8 | | | | 1/3/2/6 | | | |
| 470 | Winter Qtrs | | | | | | | | | |
| 474 | Win'23 | 0/0/3/6 | 0/0/3/6 | | | | 0/0/2/7 | | | |
| | Spr'23 | 1/2/1/5 | 2/1/1/5 | | | | 1/1/2/5 | | | |
| | Aut'23 | 0/0/4/5 | 0/0/3/6 | | | | 0/0/2/7 | | | |
| | Win'24 | 0/2/6/7 | 0/4/4/7 | | | | 0/2/6/7 | | | |
| 475 | Win'23 | | | | 0/0/0/6 | 0/0/0/6 | | 0/0/0/6 | | One team of 6 assessed as whole, it appears. |
| | Spr'23 | | | | | | | | | Work submitted, but don't see Outcome scores / One team of 6 assessed as whole, it appears. |

ABET outcomes notes

- In the event of an ABET student outcome showing unsatisfactory $(N+D)/(N+D+C+E) < 75\%$, what actions and improvements are suggested?
 - Most well above limit.
 - Cases where one offering is slightly below limit, when aggregated with other offerings they are above limit.

Course Evals

| Course | Quarter | Instructor | Particiapted | Adj. Combined | CEI | Hours/Cr | NOTES |
|--------|---------|------------|--------------|---------------|-----|----------|-------------------|
| 271 | Spr24 | Hauck | 91/100 | 4.8 | 5.3 | 2.5 | |
| 271 | Sum24 | Hameed | 29/38 | 4.8 | 5.9 | 2.6 | |
| 271A | Aut24 | Hauck | 63/69 | 5.0 | 5.4 | 2.5 | |
| 271B | Aut24 | Hameed | 65/69 | 5.0 | 5.3 | 2.3 | |
| 271 | Win25 | Hauck | 87/98 | 5.0 | 5.4 | 2.2 | |
| 371 | Spr24 | Hsia | | | | | CSE Faculty |
| 371 | Aut24 | Hussein | 11/51 | 4.3 | 5.6 | 3 | |
| 371 | Win25 | Hussein | 8/71 | 3.9 | 5.0 | 2.1 | |
| 469 | Spr24 | Hussein | 38/81 | 4.6 | 5.0 | 2.1 | |
| 469 | Sum24 | Hameed | 8/32 | 4.8 | 6.7 | 2.8 | |
| 469 | Aut24 | Hauck | 78/84 | 4.8 | 5.9 | 2.7 | |
| 469 | Win25 | Oskin | | | | | CSE Faculty |
| 470 | Spr24 | Oskin | | | | | CSE Faculty |
| 474 | Spr24 | Iyer | | | | | Missing in report |
| 474 | Sum24 | Makhsous | 35/42 | 4.5 | 4.9 | 2.6 | |
| 474 | Aut24 | Iyer | 46/71 | 4.3 | 4.3 | 2.2 | |
| 474 | Win25 | Makhsous | 67/73 | 4.5 | 4.6 | 2.4 | |
| 475 | Spr24 | Hussein | 11/48 | 4.6 | 5.6 | 2.8 | |
| 475 | Aut24 | Li | 6/36 | 4.5 | 5.9 | 2.9 | |
| 475 | Win25 | Hussein | 3/39 | 3.3 | 5.0 | 2.1 | |

Final Notes

- How do you boost enrollment in low-enrollment classes?
 - We don't have any...
- Are the course loads consistent with the number of credit hours offered for the courses?
 - 469 is at 2.8-ish hours per credit. Students do think it is a heavy load, but not unreasonable – UW expects it to be 3 hours/credit...
- Which courses are “lab heavy” and which are not?
 - All but 470 are lab heavy, and 470 does have a significant project.
- For courses with labs, what types of labs are used?
 - ECEB-361/365: 271, 371: FPGA boards.
 - 469: Simulation, sometimes FPGA boards.
 - ECEB-345: 474: Embedded systems boards.
 - CSE 003E: 475: Embedded systems boards.
- In lab courses, what is the typical role of TAs during lab sessions? (e.g., proactive instruction and hands-on guidance, or reactive support, primarily supporting students when asked, or both)?
 - Generally, TAs do about 17 hours/week in the lab, in assessing demos and reactive support.

*** End of Talk Marker ***

Process

- End of Course reports can be found at the following link:
 - https://vannevar.ece.uw.edu/cgi-bin/operations/advising/course_db/eoq_main.pl
- You can see which End of Course reports are missing at the following link:
 - https://vannevar.ece.uw.edu/cgi-bin/operations/advising/course_db/eoq_reports_open.pl?