ABET Review:
Bio and Neural Engineering
Spring 2026

Course Offerings & Enrollments

Course	Title	Aut24	Win25	Spr25	Aut25	Win26	Spr26
423/523	Introduction to Synthetic Biology (w/ BIOEN, CSE, CHEM E, MOLENG)	69 (EE: 11/1)			83 (EE: 17/2)		
424/524	Advanced Systems and Synthetic Biology (w/ BIOEN, CSE, CHEM E)			33 (EE: 1/2)			33 (EE: 1/2)
460/560	Neural Engineering (w/ BIOEN, CSE)	94 (EE: 18/14)			122 (EE: 17/13)		
461/561	Neural Engineering Tech Studio CAPSTONE (w/ BIOEN)			33(EE: 10/0)			28(EE: ?/?)
466/564	Neural Computation and Engineering Laboratory (w/ BIOEN)		34 (EE: 10/10)			33 (EE: 11/0)	

(EE Undergrad/EE Grads)

Course Offerings & Evaluations (items 1-4)

Course	Instructor	Quarter	Particiapted	Adj. Combined	CEI	Hours/Cr
423/523	Nivala	Aut25	30/81	4.8	4.2	2.4
424/524	Marchand	Spr25	33/33	4.7	3.8	1.9
460/560	Yazdan/Rao	Aut25	75/126	4.3	4.3	1.8
461/561	Ingraham	Spr25	27/33	4.5	4.8	2.3
466/564	Orsborn	Win26	21/32	4.2	5.2	2.3

End of Course Reports and compliance –

EE 466: Orsborn – notes modest drop off in lab engagement, will adjust incentives to participate in labs over homework

EE 561: Ingraham - Students regularly request access to lab space with electronics or soldering stations.

Missing Quarters	Course
Autumn 2024 (Seelig)	423
Spring 2024 (Marchand)	424
Autumn 2023 (Carothers)	423

Missing Quarter	Course
Spr25	**424/524**
Aut25	**423/523**

ABET outcomes

1: Solve Problems. 2: Apply Design Considering Constraints. 3: Communication.
4: Ethics. 5: Teams. 6: Experiment & Analyze Data. 7: Learning

Course	Title	Instructor	Quarter	1	2	3	4	5	6	7
423	Introduction to Synthetic Biology	Seelig	Aut24							
424	Advanced Systems and Synthetic Biology	Marchand	Spr25	ABET not requested for SynBio courses						
460/560	Neural Engineering	Yazdan/Rao	Aut25							0/2/2/2
461/561	Neural Engineering Tech Studio	Ingraham	Spr25		0/0/0/3	0/0/0/3		0/0/1/2		
466	Neural Computation and Engineering Laboratory	Orsborn	Win26	0/0/3/1						

# of students: Novice/Developing/Competent/Exemplary

EOC Reports

460 Improvements:

- Added two group projects, students work in teams of three to four, with a graduate student serving as the group leader.
- Several years ago, completely revised how evaluated students, changes received very positive feedback from the class over past years.

466 Improvements:

- Curriculum updated to include a debate to consider the ethical and societal implications of neurotechnologies.
- New include pre-lab quizzes to encourage lab preparation in advance.
- New items so students reflect on their approach and experience with small-group collaborations.

461 Improvements:

- Moved class to back to Fridays to have an extra day without Memorial day
- Added a practice pitch session to prepare for final shark tank competition.
- Prototype supplies now able to order sooner.

Problems areas?

- The Neural Engineering sequence –
  - Offered regularly with stable or increasing enrollment (e.g., 460 increased from 90-120 students)
  - Well-integrated across courses
  - Largely satisfies Neural Computation and Engineering Minor and Graduate Certificate programs.
  - Have added industry standards to 461 Capstone course in the Neural Engineering field, including an assignment to list FDA and IEC/ISO standards.

- The Synthetic Biology sequence –
  - Improving overall enrollment in both courses
  - Lack of EOCs, but taught by largely out of ECE faculty, and not assessed for ABET