

ECE Curriculum Committee Meeting

Monday, Sept 29th, 2025

Attending: Arabshahi, Bushnell, Charisopoulos, Chen, Dela Cruz, Eley, Hauck, Huberman, Kirschen, Lim, Reyes, Rudell, Mishra, Moritz, Sallows, Shlizerman, Swanson, Thomas

Absent: Majumdar

Agenda:

1. Discuss adding EE 391 to list of statistics options for ECE degree and add the UW Natural Science Designation
2. Update to EE 419 prerequisites
3. Update EE 344: Data-Driven Modeling and Machine Learning course description and prerequisites
4. Update EE 345: Introduction to Foundations of Machine Learning course description and prerequisites

Discuss adding EE 391 to list of statistics options for ECE degree and add the UW Natural Science Designation

The committee revisited a previously discussed topic of adding EE 391 : Probability for Information and Communication Engineering as an option to the Statistics requirement. With EE 391 being an approved STATs option, the committee also wishes to update the course listing to label this course as counting for a Natural Science course.

- Kirschen noted that the learning objectives will have to be accurately phrased to reflect and differentiate this course as “Statistics” vs “Probability”
- Bushnell pointed out that the current prerequisites have listed EE 235 and EE 241
 - Needs to be updated to EE 242: Signals, Systems, and Data I
- Thomas emphasized that although EE 391 does count towards the Natural Science degree requirement for students, we will want this course to be labeled with NSc to reflect this accurately
- Prerequisites will still contain MATH 126 or MATH 136
- Possible future committee discussion topics were brought up regarding EE 391:
 - Possible course name changes from “Probability” to “Statistics”
 - Possible update to department website ECE degree requirements to show either “Statistics” or “Statistics and Probability”

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Motion to approve updated prerequisites, list EE 391 as an option for the STATs requirement and to be labeled as a Natural Science course: Motion approved

- **Planned to be effective Spring 2026**
- **For Winter 26, we will allow this to count via exception**

Update to EE 419 prerequisites

Arabshahi presented to the committee a proposed change to EE 419: Introduction to Computer-Communication Networks prerequisites as the currently listed prerequisites do not accurately reflect the materials that need to be covered for this course. As it stands, there are a multitude of options for Computer Science courses surrounding the topic of computer programming. However, students just need to know the basics of Python to succeed in this course.

- Arabshahi proposed to remove the Computer Science sequence and to replace with EE 241: Programming for Signal and Information Processing Applications or CSE 163
- Proposed listed prerequisites: EE 241 or CSE 163; and either IND E 315, MATH 394/STAT 394, STAT 390, or EE 391
 - Voted to remove STAT 391 from prerequisite listing

Motion to approve the prerequisite change to the above listed courses: Motion approved

- **Effective for Spring 2026**

Update EE 344 course description and prerequisites

Charisopoulos presented to the committee an updated master course description for EE 344: Data-Driven Modeling and Machine Learning as the previously approved description needs to have changes made and to solidify the prerequisites. The course description to EE 344 is too similar to another approved course EE 345: Introduction to Foundations of Machine Learning and the course description needs to distinguish the differences between the two to avoid misunderstandings for students.

- Updated course description:

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- A practical introduction to machine learning methods emphasizing high-level understanding as well as hands-on experience with machine-learning frameworks. Topics include supervised and unsupervised learning, neural networks and deep learning, and reinforcement learning. Applications are drawn from areas such as statistics, decision-making and control, signal processing and scientific computing.
- Although this course has been approved in previous committee meetings, the committee would like to have on record that the following is the voted-on prerequisites for EE 344:
 - either MATH 126 or MATH 136; and either EE 241 or CSE 163

Motion to approve new master course description for EE 344: Motion approved

Update EE 345 course description and prerequisites

Arabshahi discussed with the committee an update to the master course description for EE 345: Introduction to Foundations of Machine Learning needs to be made as the previously approved description is too similar to EE 344 and a prerequisite needs to be added. This course description change is needed to distinguish the differences between the two to avoid misunderstandings for students and the additional prerequisite is needed to reflect a curriculum update to add this course as an alternative prerequisite.

- Updated course description:
 - Introduction to the mathematical foundations of machine learning models and algorithms. Motivation and examples are derived from application areas including statistics, decision-making and control, communication and signal processing, and data science. Topics include linear algebra for data science, supervised learning methods such as linear regression and classification, and unsupervised learning methods such as clustering.
- The committee brought up the addition of AMATH 352 as this was an approved alternative to MATH courses for other EE courses and wanted to reflect this on the newly approved EE 345. Prerequisite should be as follows:
 - either MATH 136 or MATH 208 or AMATH 352; and either E E 241 or CSE 163

Motion to approve new master course description and prerequisite for EE 345: Motion approved