New Curriculum or Curricular Change EFD Template

PURDUE UNIVERSITY | College of Engineering

Engineering Faculty Document
No.: 19-25
May 1, 2024

TO: The Engineering Faculty

FROM: The Faculty of the Elmore Family School of Electrical and Computer Engineering

RE: New Engineering Concentration

The Faculty of the Elmore Family School of Electrical and Computer Engineering has approved the following new Concentration from the College of Engineering. This action is now submitted to the Engineering Faculty with a recommendation for approval.

TITLE:

Computer Engineering (CE)

DESCRIPTION:

This concentration applies to these programs/major:

Programs:

- ECE-MSECE-OL
- ECE-MSECE

Major:

- ECEN (Electrical & Computer Engr)

To earn this concentration, students will complete the following coursework:

Required: ECE 60800, Computational Models and Methods, 3 credits

6 additional credits from this list:

Course #	Course name	Credits
56500	Computer Architecture	3
60827	Programmable Accelerator Architectures	3
66600	Advanced Computer Systems: Parallel Computer Architecture	3
56300	Programming Parallel Machines	3
56800	Embedded Systems	3
59500	Computer Vision for Embedded Systems	1
69500	Advanced Internet of Things Design and Applications	3
50863	Computer Network Systems	3

54700	Introduction to Computer Communication Networks	3
56200	Introduction to Data Management	3
60872	Fault-Tolerant Computer System Design	3
62400	Multimedia Systems	3
64700	Performance Modeling of Computer Communication Networks	3
67300	Distributed Computing Systems	3
69500	Introduction to Operating Systems	3
69500	Big Data for Reliability and Security	1
69500	Datacenter and Cloud Networks	3
69500	Introduction to Applied Cryptography	3
60022	Wireless Communication Networks	3
57300	Compilers and Translator Writing Systems	3
59500	Advanced Software Engineering	3
59500	Introduction to Compilers I: Compiler Basics	1
59500	Introduction to Compilers II: Code Generation	1
59500	Introduction to Compilers III: Optimization	1
66300	Compiler Code Generation, Optimization, and Parallelization	3
66400	Formal Languages, Computability, and Parallelization	3
69500	Hardware and Software Security	3
69500	Holistic Software Security	3

RATIONALE:

Computer Engineering is one of the focus or research areas in ECE. Approximately 34% of our ECE graduate students have this as their primary area of interest. This concentration allows students to fine-tune their MSECE credential.

Head/Director of the Elmore Family School of Electrical and Computer Engineering

Link to Curriculog entry: https://purdue.curriculog.com/proposal:28376/form