

MSECE Curriculum Guide

In line with UW Graduate School requirements ([Policy 1.1](#)), the degree requirements for the MSECE program are the following:

- A minimum of 45 credits are required for the MSECE degree.
- A minimum grade of 2.7 is required in each course counted towards the degree.
- A minimum cumulative GPA of 3.00 is required for graduation.
- Students must be registered for at least 2 credits in the quarter the degree is earned.
- Students must complete all degree requirements within 6 years.
- Please see the grading system in your MSECE handbook for more information.

Thesis

Intended for students considering entering into a PhD program post-graduation. Involves long-term, in-depth, advanced academic research, extensive academic writing, and original research contributions to their disciplinary field and/or scholarly communities. Requires a Master's Supervisory Committee of one Graduate Faculty Advisor and at least one Graduate Faculty Committee Member. Produces master's thesis.

Thesis Option A Degree Requirements and Sample Schedule

- A minimum of 45 credits.
- Required Core Courses (15 credits). See [Core Courses](#).
- Required Depth/Elective Courses (15 credits). See [Commonly Offered Depth/Elective Courses](#).
- Optional Courses (5 credits maximum). *Non-TECE coded courses, 4XX or above.*
- Required Thesis Credits (15 credits). TECE 700. *Students cannot begin taking thesis credits until the Required Core Courses are completed. Students can expect to take these credits over their last 2 - 3 quarters in the program.*

First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Fifth Quarter
TECE Core (5 cr) TECE Core (5cr)	TECE Core (5 cr) TECE Elective (5 cr)	TECE Elective (5cr) TECE Elective (5cr)	TECE 700 (10 cr)	TECE 700 (5 cr)

Thesis Option B Degree Requirements and Sample Schedule

- A minimum of 45 credits.
- Required Core Courses (15 credits). See [Core Courses](#).
- Required Depth/Elective Courses (20 credits). See [Commonly Offered Depth/Elective Courses](#).
- Optional Courses (5 credits maximum). *Non-TECE coded courses, 4XX or above.*
- Required Thesis Credits (10 credits). TECE 700. *Students cannot begin taking thesis credits until the Required Core Courses are completed. Students can expect to take these credits over their last 2 - 3 quarters in the program.*

First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Fifth Quarter
TECE Core (5 cr) TECE Core (5cr)	TECE Core (5 cr) TECE Elective (5 cr)	TECE Elective (5cr) TECE Elective (5cr)	TECE Elective (5 cr) TECE 700 (5 cr)	TECE 700 (5 cr)

Capstone

Designed for students who want to focus on practical solutions to real-world problems - often related to the student's employer, company, and/or industry - through the hands-on application of what they have learned. Emphasizes advanced experience, critical analysis, and the mastery of industry-relevant skill sets. Requires a Master's Supervisory Committee of one Graduate Faculty Advisor and at least one Graduate Faculty Committee Member. Research is less exhaustive than the thesis and can produce a combination of deliverables.

Capstone Project Option Degree Requirements and Sample Schedule

- A minimum of 45 credits.
- Required Core Courses (15 credits). See [Core Courses](#).
- Required Depth/Elective Courses (25 credits). See [Commonly Offered Depth/Elective Courses](#).
- Optional Courses (5 credits maximum). *Non-TECE coded courses, 4XX or above.*
- Required Capstone Credits (5 credits). TECE 599. *Students cannot begin taking capstone credits until the Required Core Courses are completed. Students can expect to take these credits over their last 1 - 2 quarters in the program.*

First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Fifth Quarter
TECE Core (5 cr) TECE Core (5cr)	TECE Core (5 cr) TECE Elective (5 cr)	TECE Elective (5cr) TECE Elective (5cr)	TECE Elective (5 cr) TECE Elective (5 cr)	TECE 599 (5 cr)

Core Courses

For detailed course descriptions, please visit the [UW Tacoma Course Catalog](#).

- TECE 510: Advanced Computer Architecture
- TECE 512: Advanced Embedded Systems
- TECE 521: Advanced VLSI Communication
- TECE 531: Advanced Power System Operation
- TECE 539: Advanced Power Electronics
- TECE 551: Control Systems Design
- TECE 555: Machine Learning for ECE
- TECE 563: Modern Signal Processing
- TECE 565: Advanced Random Signal Processing

Commonly Offered Depth/Elective Courses

For detailed course descriptions, please visit the [UW Tacoma Course Catalog](#).

- TECE 510: Advanced Computer Architecture
- TECE 511: Microprocessor System & Peripheral Interfacing
- TECE 512: Advanced Embedded Systems
- TECE 514: Distributed Systems for ECE
- TECE 516: Graphics Processing Unit Architecture | *Prerequisite: Minimum grade of 2.70 in TECE 510*

- TECE 521: Advanced VLSI Communication
- TECE 523: Wireless Integrated Circuit Design
- TECE 531: Advanced Power System Operation
- TECE 533: Renewable Energy Systems
- TECE 535: Power Distribution Systems
- TECE 537: Generalized Theory of Electrical Machines and Drives
- TECE 539: Advanced Power Electronics
- TECE 540: Optimization & Efficiency in Artificial Intelligence Infrastructures
- TECE 542: Performance & Efficiency in AI Infrastructures
- TECE 551: Control Systems Design
- TECE 553: Digital Control Systems
- TECE 555: Nonlinear Systems
- TECE 556: Advanced Machine Learning
- TECE 557: Optimal & Robust Control
- TECE 563: Modern Signal Processing
- TECE 565: Advanced Random Signal Processing
- TECE 567: Digital Communications
- TECE 569: Wireless Communications
- TECE 572: Microwave Electronics
- TECE 573: Advanced Electromagnetics
- TECE 590: Special Topics in ECE
- TECE 598: Master's Seminar (1 – 5 credits, 5 max)
- TECE 600: Independent Study or Research (1 - 5 credits, 5 max)
Variable credits. Can count up to 5 credits maximum towards Depth/Elective Course credit requirements. Graduate Faculty Advisor required. Signed [SET Registration Form](#) and proposal must be uploaded through the [UW Tacoma Course Enrollment Request](#).
- TECE 601: Internship (1 - 5 credits, 10 max).
Variable credits. Can count up to 5 credits maximum towards Depth/Elective Course credits requirements. Graduate Faculty Advisor and Internship Sponsor required. Signed [SET Registration Form](#) and proposal must be uploaded through the [UW Tacoma Course Enrollment Request](#).
- TECE 700: Master's Thesis (1 - 15, maximum 15).
Variable credits. Master's Supervisory Committee required. Signed [SET Registration Form](#) and proposal must be uploaded through the [UW Tacoma Course Enrollment Request](#).
- TECE 599: Capstone (1 – 5, maximum 5).
Variable credits. Master's Supervisory Committee required. Signed [SET Registration Form](#) and proposal must be uploaded through the [UW Tacoma Course Enrollment Request](#).