

## Modeling and Simulations in Engineering Certificate Matrix

Program Goals	1. The graduates of the program will have understanding of the fundamental principles of Modeling and Simulations in Engineering	2. The graduates of the program will learn advanced and emerging approaches to Modeling and Simulations in Engineering	3. The program will assist in professional advancement in participating students
ME 510 Finite Element Methods	x		x
ME518 Advanced Engineering Analysis	x		x
ME 525 Computational Thermo-Fluids	x	x	x
ME 564 Linear Systems Control	x	x	x
ME 576 Battery System Modeling and Control		x	x
ME 610 Finite Element Methods - Nonlinear	x	x	x
ME 611 Modeling of Engineering Materials	x	x	x
AENG 502 Modeling of Automotive Systems	x	x	x
AENG 551 Application of FEM in Automotive Structure Design	x	x	x
AENG 650 Analysis and Design for Crashworthiness	x	x	x
MATH 558 Introduction to Wavelets	x	x	x
MATH 562 Mathematical Modeling	x		x
MATH 572 Introduction to Numerical Analysis	x		x
MATH 573 Matrix Computation	x		x