**Required Core Courses:**
- **AME 404** Mechanical Engineering Problems (F)
- **AME 509** Applied Elasticity (Sp) or CE 507
- **AME 530a** Dynamics of Incompressible Fluids (F)
- **AME 535a** Introduction to Computational Fluid Mechanics (F)
- **CE 507** Mechanics of Solids (F) or AME 509
- **CE 529a** Finite Element Analysis (F)(Su)

*AME 526 is recommended prep for AME 535a.

**Electives:**
- **AME 535b** Introduction to Computational Fluid Mechanics (Sp)+
- **CE 529b** Finite Element Analysis (Sp)
- **MASC 575** Basics of Atomistic Simulation of Materials (F)
- **MASC 576** Molecular Dynamics Simulations of Materials and Processes +

**Computational Technical Electives**
- **AME 415** Turbine Design and Analysis (F)
- **CE 551** Computer-Aided Engineering Project +
- **ASTE 545** Computational Techniques in Rarefied Gas Dynamics +
- **Math 504ab** Numerical Solution of Ordinary and Partial Differential Equations +

**Technical Electives**
- **AME 511** Compressible Gas Dynamics (Sp)
- **AME 516** Convection Processes (Sp)+
- **CE 541a** Dynamics of Structures (F)

**Course** | **Semester** | **Notes**
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AME 525 |  |  
AME 526 |  |  
AME 404 |  |  
AME 530a |  |  
AME 535a |  |  
CE 507 or AME 509 |  |  
CE 529a |  |  

*To be approved to pursue the MSAMFS with Thesis, you must first discuss with an AME Academic Advisor during your first semester in program. An AME faculty thesis advisor must be secured by student and special planning of coursework and units must be discussed with AME Academic Advisor.*