

# Theoretical and Applied Mechanics

## Core and Breadth Courses

### Core Courses (16 hours)

TAM 541 Mathematical Methods I  
TAM 542 Mathematical Methods II  
TAM 531 or TAM 532 – Inviscid Flow or Viscous Flow  
TAM 551 Solid Mechanics I

### Breadth Courses (16 hours)

**Solid Mechanics, Fluid Mechanics, Computational and Experimental Mechanics**  
**(at least 2 courses from options below)**

Fluid Mechanics

TAM 531 Inviscid Flow  
TAM 532 Viscous Flow  
TAM 536 Instability and Transition  
TAM 538 Turbulence

Solid Mechanics

TAM 552 Solid Mechanics II  
TAM 554 Plasticity  
TAM 555 Fracture Mechanics  
TAM 559 Atomistic Solid  
Mechanics

Engineering Science and Applied Mathematics

TAM 514 Elastodynamics and Vibrations  
TAM 515 Advanced Physical Acoustics  
TAM 516 Dynamical Systems Theory  
TAM 518 Wave Motion  
TAM 545 Advanced Continuum Mechanics  
TAM 549 Asymptotic Methods  
TAM 557 Mechanics of Random Media

#### **Mechanics of Materials**

**(at least 1 course from options below)**

TAM 424 Mechanics of Structural Metals  
TAM 427 Mechanics of Polymers  
TAM 428 Mechanics of Composites  
TAM 524 Micromechanics of Materials  
TAM 525 Advanced Composite Materials  
TAM 526 Composites Manufacturing

#### **Computational and Experimental Mechanics**

**(at least 1 course from options below)**

Computational Mechanics

TAM 470 Computational Mechanics  
TAM 570 Computational Fluid Mechanics  
TAM 574 Advanced Finite Element Methods

Experimental Mechanics

TAM 456 Experimental Stress Analysis  
TAM 537 Experimental Fluid Mechanics

