

## Courses for Breadth Requirement of Aerospace Engineering M.S. Degree Program

<b>Aerodynamics, Fluid Mechanics, Combustion and Propulsion (AFMCP)</b>	AE 410/CSE 461: Computational Aerodynamics AE 412/ME 411: Viscous Flow & Heat Transfer AE 416: Applied Aerodynamics AE 419: Aircraft Flight Mechanics AE 433: Aerospace Propulsion AE 434: Rocket Propulsion AE 435: Electric Propulsion AE 510/ ME 510: Advanced Gas Dynamics AE 511: Transonic Aerodynamics AE 513: Dispersed Multiphase Flow AE 514: Boundary Layer Theory AE 515: Wing Theory AE 538/ ME 501: Combustion Fundamentals AE 598 AAA: Advanced Applied Aerodynamics AE 598 CAA: Aeroacoustics AE 598 CFD: Advanced Computational Aerodynamics AE 598 GSE: Diagnostics for Aerodynamics and Propulsion AE 598 MCF: Multiphase Computational Fluid Dynamics TAM 531: Inviscid Flow TAM 532: Viscous Flow TAM 536: Instability and Transition TAM 537: Experimental Fluid Mechanics TAM 538: Turbulence TAM 570/CSE 560: Computational Fluid Mechanics
<b>Astrodynamics, Controls and Dynamical Systems (ACDS)</b>	AE 402: Orbital Mechanics AE 403: Spacecraft Attitude Control AE 454: Systems Dynamics & Control AE 502: Advanced Orbital Mechanics AE 504: Optimal Aerospace Systems AE 555: Multivariable Control ECE 515/ME 540: Control System Theory and Design ECE 470/AE 482/CS 443/GE 421/ME 445: Introduction to Robotics
<b>Structural Mechanics and Materials (SMM)</b>	AE 451: Aeroelasticity ME 471/AE 420/CSE 451: Finite Element Analysis TAM 427/AE 427/MSE 454: Mechanics of Polymers TAM 428/AE 428/MSE 456: Mechanics of Composites TAM 451: Intermediate Solid Mechanics TAM 551: Solid Mechanics I <i>Also accepted are any courses which have the above SMM courses as prerequisites.</i>