MECH6339 - Multidisciplinary Design Optimization

**MECH 6339** Multidisciplinary Design Optimization (3 semester credit hours) The objective of the course is a comprehensive introduction to the mathematical and algorithmic techniques for coupled analysis and optimization of multidisciplinary mechanical and aerospace engineering problems. The focus will be on computational methods for coupled fluid-structure interaction problems, ranging from reduced order models to full scale finite volume and finite element simulations. State-of-the-art research examples will be demonstrated in the class to develop practical insight on computational methods for engineering design. This enables the students to design advanced and complex engineering systems that are competitive in terms of performance, and have life-cycle value. At the end of the course, the student should be able to master most of the complex problems in engineering design with a deep understanding of the used optimization theory and the physics of the computational based engineering. Prerequisite: **MECH 6318**. (3-0) R