

MECHANICAL MANUFACTURING TECHNOLOGY (MMT)

MMT 605 EARLY ENGINEERING INTERNSHIP

3, 1/0

Prerequisite: Instructor permission or MMT graduate standing. Mechanical engineering internship; ethical manufacturing and design considerations; development of oral and written communication skills; technical/nontechnical presentation development; multidisciplinary team environment; techniques for developing and analyzing physical and mathematical models of mechanical and electromechanical systems.

Equivalent Course: MET 605

MMT 611 ADVANCED ENGINEERING MODELING

3, 2/2

Prerequisite: ENT 314 or instructor permission. Three-dimensional (3-D) parts and assembly creation; mathematical modeling of mechanical and electromechanical systems; parametric modeling; 3-D solid modeling; simulation of prototype behavior; introduction to finite element concepts.

Equivalent Course: MMT 615

MMT 615 SUSTAINABILITY IN DESIGN

3, 3/0

Prerequisite: Permission of Instructor and MMT Graduate Standing. Sustainable manufacturing and its relationship to larger issues of global warming, energy independence, and social impact; Sustainable manufacturing practices in for-profit enterprises; Continuous improvement using sustainability thinking; Techniques for effective communication about sustainability to internal and external audiences.

Equivalent Course: MET 615

MMT 620 MANAGING ENGINEERING PROJECTS

3, 3/0

Prerequisite: Permission of Instructor or MMT Graduate Standing. Cost and time estimating and controlling techniques for projects. Evaluation of labor, material, equipment, and subcontract resources, scheduling techniques, earned value concepts. Measuring project percent complete. Contractual risk allocation. Project investment analysis techniques.

Equivalent Course: MET 620

MMT 675 ADVANCED ENGINEERING SYSTEM DESIGN

3, 2/2

Prerequisite: MMT 605. Application of design concepts in mechanical engineering; conceptual and detailed design process stages; problem definition; design specifications; categorization of designs; modeling and analysis methods; design optimization; economics; reliability; sustainability; intellectual property; manufacturing considerations in design.

Equivalent Course: MET 675

MMT 685 PROFESSIONAL EXPERIENCE INTERNSHIP

3, 1/0

Prerequisite: MMT 675. Design problem identification and solution development; critical /creative problem solving methods; written/oral presentation and interpersonal communications development; ethical considerations for product design and manufacturing processes; project management strategies.

Equivalent Course: MET 685

MMT 690 MASTER'S PROJECT

6, 6/0

Equivalent Course: MET 690

MMT 695 MASTER'S THESIS

6, 0/0

Equivalent Course: MET 695