VOILAND COLLEGE OF ENGINEERING AND ARCHITECTURE

Engineering and Technology Management

COURSE SYLLABUS

Course Number: E M 565
Course Name: Introduction to Systems Management
Instructor: Alice Squires **email:** alice.squires@wsu.edu
Semester Credits: 3 **Prerequisites:** None

Course Description:

Introduction to Systems Management integrates project management and systems engineering management in the development, manufacture, and operation of complex systems. Complex systems, encumbered with schedule and cost constraints while pushing state of the art technology, present a challenge to today's managers and require a systems approach to project planning, leading, organizing, monitoring, and controlling. The course is designed to assist engineering leaders and managers, systems engineers and architects, technical project and program managers, and hardware, software, electrical, mechanical and manufacturing engineers with projects involving complex system planning and development. The course includes case studies to relate concepts to real world practice and demonstrate how projects can succeed with a formalized systemic approach to project and systems engineering management. This course is a core 'Managing Projects' course in the ETM master's degree, a required course for the systems engineering management graduate certificate and is available for continuing education.

Course Objectives:

This course teaches the fundamental elements and concepts of integrated project management and systems engineering management. Its specific objectives are:

1. To provide a general understanding of the interdependent relationships between project planning, leading, organizing, directing, and monitoring, and system development, build, operation, and sustainment;
2. To develop key concepts and principles usable by technical managers to plan a complex project across the systems life cycle;
3. To provide some practice using analytical tools to plan for the development of an affordable total system solution that addresses the right problem;
4. To clarify, improve and broaden one's personal philosophy of project management, systems concepts, system design and development, requirements management, change management, and engineering ethics;
5. To strengthen the students' communication and research abilities by exploring current societal needs addressable with a system solution;
6. To provide the student with opportunities to utilize critical thinking skills to analyze and solve complex problems.

Course Topics:

- Systems, Project, and Management
- The System Engineering Process
- Overview of Essentials
- The Project Management Plan
- Schedule, Cost, and Situation Analysis
- The Project Manager and Leadership
- Team Building and Team Interactions
- System Engineering and Management
- The Systems Engineering Management Plan
- The Thirty Elements of Systems Engineering
- Requirements Analysis and Allocation
- Systems Architecting Principles
- Software Engineering
- Selected Quantitative Relationships
- Trends in SE, SW, and PM
- Selected New Perspectives
- Integrative Management
- Case Studies

Grading:

Participation: 15%, Discussion: 15%, Open-Book Exams: 20%, Cases/PMP/SEMP: 40%, Teamwork: 10%