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<tr>
<th>Course</th>
<th>Overall Objective</th>
<th>Specific Objectives</th>
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| EIN 6326 Technology Strategy | Increase the student’s ability to start a project with the business need at the forefront of the planning process | • Defining the core challenges of a project-based organization  
• Understanding how to formulate to connect a project to the organization’s strategic and portfolio plans  
• Defining a business model of the organizational system  
• Using a systematic decision making & critical thinking process |
| EIN 6370 Innovation in Engineering Design | Increase the student’s ability to design a user-centered product/service system by developing creative ideas and prototypes. | • Understanding the product design process  
• Understanding the different tools available to understand customer requirements  
• Understanding the creative brainstorming process  
• Understanding the prototype development process |
| ESI 5219 Engineering Statistics | Increase the student’s ability to use data and statistics to make sound, informed business decisions. | • Collecting and summarizing data  
• Understanding the concept of variation—special and common cause of variation  
• Understanding the overall statistical analysis process  
• Understanding the process to select the appropriate analysis approach—understand “when to” and “when not to” use an analysis technique  
• Understanding the role of business analytics in corporate performance  
• Defining the business analytics process  
• Understanding the typical statistical analysis tools associated with Lean/Six Sigma |
| ESI 6358 Decision Analysis   | Increase the student’s ability to make rational decisions while evaluating trade space options (i.e., make decisions within the trade study process) | • Using analytical tools to make decisions  
• Understanding the role of analytical tools to make business decisions within a decision making process  
• Understanding the overall decision analysis process  
• Understanding the process to select the appropriate analysis approach—understand “when to” and “when not to” use an analysis technique  
• Providing an overview of simulation and modeling as a tool for making decisions |
| ESI 6551 Systems Engineering | Increase the student’s ability to define a product to meet requirements.          | • Defining the systems engineering process  
• Understanding and applying the systems engineering process  
• Understanding how to define requirements  
• Understanding how to allocate, manage, and verify requirements  
• Understanding configuration control  
• Understanding the role of the “ilities”  
• Understanding the technical risk management process and tools |
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| ESI 6552 Systems Architecture              | Increase the student’s ability to design and structure complex networks or systems. | • Interfacing with the user(s) and sponsor(s) and all other stakeholders in order to determine their (evolving) needs.  
• Generating the highest level of system requirements, based on the user's needs and other constraints.  
• Ensuring that this set of high level requirements is consistent, complete, correct, and operationally defined.  
• Introducing heuristics approach to the process of systems architecting in business, economic, social, urban, military, and government domains.  
• Understanding conceptual representation and acceptance phases. |
| EIN 6357 Advanced Engineering Economic Analysis | Increase the student’s ability to deliver a project within cost expectations and to make decisions within the corporate financial perspective | • Understanding the technical underpinning of engineering economic and simulation based costing analysis.  
• Understanding how to read financial statements  
• Understanding how project decisions impact the organization’s profit equations and overall financial health  
• Understand the role of life cycle costing for complex systems. |
| EIN 5140 Project Engineering               | Increase the student’s ability to deliver a project and have a successful project (meet commitments and expectations for a project). | • Understanding the multiple roles of a project manager as a solution provider and how these roles change over the life-cycle of a project  
• Understanding how to formulate a project to gain approval  
• Understanding the project management process and tools  
• Understanding the “project review” process and tools. |
| EIN 5108 The Environment of Technical Organizations | Increase the student’s ability to navigate the core processes of and overcome the typical challenges of a project-based organization. | • Understanding the environment of the technical organization  
• Understanding the basics of organizational behavior and they apply to scientists and engineers  
• Understanding how to organize and staff the project and office team  
• Understanding the leadership skills of the project manager, how to manage individuals, your time, project teams.  
• Understanding how to deal with conflict. |
| EIN 6182 Engineering Management            | Increase the student’s ability to strategically manage an engineering organization | • Understanding the nature of organizational transformation  
• Identifying the core processes of a project-based organization  
• Evaluating the core challenges of a project-based organization  
• Understanding the strategic management process of the organization  
• Understanding the portfolio management process of the organization  
• Understanding how to “connect the dots” |
| EIN 6950 Industrial and Systems Engineering Capstone Course | Apply program-learned Knowledge to actual projects. | • Providing solutions for company-specific project. |