



DEFENSE ACQUISITION UNIVERSITY
SYS 302 Technical Leadership in Systems Engineering

120620

*Course Learning/Performance Objectives followed by its
enabling learning objectives on separate lines if specified.*

1	Correctly apply key aspects of systems engineering policy and process to an acquisition program.
	Trace the development of the current systems engineering process from earlier models used to describe that process.
	Using the current SE process, evaluate an example effort to ensure that all required activities are included in the effort.
	Recognize the mandates promulgated in the most recent USD (AT&L) memos on the topic of systems engineering.
	Describe the format and the associated content of a systems engineering plan per OSD SEP Preparation Guide.
	Describe current policy regarding the conduct of technical reviews.
2	Apply the attributes of an effective leadership briefing to SYS302 exercises.
	Identify key attributes of a successful briefing.
	Evaluate a briefing based on the key attributes of a successful briefing.
3	Describe the application of key elements of enterprise architecture to an acquisition program.
	Define basic concepts associated with architecture.
	Define open systems architecture.
	Describe the architectural products for the JCDIS documents.
4	Describe the application of key elements of Net-Centricity to an acquisition program.
	Describe the Global Information Grid (GIG) – DoD EA
	Describe the tenets of Net-Centricity.
5	Explain the application of modeling and simulation to systems engineering.
	Explain the difference between a model and a simulation
	Explain the difference between fidelity and resolution
	Describe the M&S hierarchy
	Describe the VV&A process
6	Develop appropriate strategies and documentation to support program Initiation.
	Given the capability gap analysis, analysis of alternatives, and technology maturity, develop an appropriate acquisition approach to meet identified user needs.
	Outline the purpose, entry and exit criteria of the Initial Technical Review (ITR) as related to program initiation
	Develop the first three levels of a work breakdown structure, using MIL-HDBK-881A as a guide.
	Given an initial capabilities document and draft CONOPS, develop a government roadmap schedule of activities to deliver the capabilities.
	Given an initial capabilities document, draft CONOPS and technology studies; develop the top level architectures (OV-1, SV-1, StdV-1).
7	Determine the application and impacts of key design considerations on systems design.
	Describe the impacts of HSI on designing a system
	Describe the impacts of ESOH on designing a system
	Describe the impacts of spectrum management on designing a system
	Describe the impacts of international cooperation on designing a system
8	Develop appropriate strategies and documentation to support requirements development
	Translate the system capabilities of a CDD (including key performance parameters) into well written technical requirements for the system performance specification
	Develop well written statutory, regulatory, and certification requirements for the system performance specification



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	Develop well written design consideration requirements for the systems performance specification
	Describe requirement traceability
	Identify appropriate verification methods for requirements
	Describe the government's role in creation of system requirements
9	Given a risk assessment, update it to conform to the Risk Management Guide for DoD Acquisition
	Implement the identification activity of risk management process
	Implement the risk analysis activity of risk management process
10	Determine an appropriate technical organizational structure based on IPPD and acquisition program's needs.
	Identify the objectives for an IPT.
	Identify the program risks that should be monitored by an IPT.
	Develop a recommendation for the subject matter expertise required on IPTs to implement IPPD across the full spectrum of requirements and design considerations.
	Assess proper designation of technical authority and integration with IPTs.
	Develop proper control and reporting mechanisms for leadership of the overall technical effort, for systems engineering, for requirements management, and for systems integration.
	Develop an IPT structure based on the WBS to meet technical objectives.
	Construct cross-IPT mechanisms for functional and system integration.
11	Examine critical systems engineering policies and processes unique to software acquisition.
	Recognize the growing prominence of software as a product of systems engineering.
	Identify laws, policy and guidance in place to assist SEs in acquisition of software-intensive systems (SIS) and products for DoD.
	Show how systems engineering processes facilitate the acquisition of software and information technology systems in accordance with the AT&L Acquisition Management System.
	Identify correct application of critical software practices for Performance-Based Management on a software intensive system (SIS).
12	Develop appropriate strategies and documentation associated with the management of technical baselines in a program.
	Describe the Configuration Baselines (functional, allocated, and product) in terms of the requirements documents which describe each baseline.
	Allocate functions to physical elements.
	Develop item performance specification requirements and verification methods for a system.
	Access how component schedule changes impact the system schedule.
	Identify the critical path on a schedule.
	Illustrate appropriate technical performance measurements (TPMs) to monitor progress.
13	Develop appropriate strategies and documentation associated with Earned Value Management for a program.
	Determine the management reserve for a given budget.
	Develop a program measurement baseline.
	Apply earned value to determine the cost variance.
	Apply earned value to determine the schedule variance.
14	Describe key Systems Engineering current initiatives and areas of interest.
	Identify current initiatives and areas of interest for the systems engineering field. (Note: This objective is purposefully general to accommodate rapid changes in current initiatives and areas of interest.)
	Recognize the applicability of systems engineering principles to current acquisition and modernization programs.
15	While assuming a technical role, apply best practices approaches to the conduct of a technical review.
	Assess implementation of technical review chairmanship/leadership
	Evaluate contractor's performance based on technical information and the phase of the program.
	Assess entry criteria for the readiness of an event-driven technical review.
	Based on the given information, update a risk assessment.
	Develop mitigation plans for the identified risks.



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16	Apply key manufacturing initiatives in an acquisition program.
	Recognize the importance of manufacturing an acquisition program.
	Apply Lean philosophy, Six Sigma and the Theory of Constraints to a sample acquisition program
	Apply Continuous Process Improvement (CPI) tools to a case study
17	While assuming a technical role, implement key practices for the successful transition of a system to production.
	Prepare for the conduct of a Production Readiness Review.
	Deduce the risks to successful production transition and program sustainment activities during preparation for the Production Readiness Review.
	Analyze a design from a manufacturing and production perspective
18	Evaluate ethical conduct in typical systems engineering career situations.
	Integrate government ethics responsibilities with engineering and business practices
	Discuss a case study where ethics dilemmas occur