



DEFENSE ACQUISITION UNIVERSITY

IRM 202 Intermediate Information Systems Acquisition

130806

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

1	<p>Given the Joint Capabilities and Integration Development System (JCIDS) process, students will explain how Strategic Guidance evolves into program requirements and flows into the Defense Acquisition Systems.</p> <p>Explore recent changes to DoD information technology systems capabilities management policies and procedures.</p> <p>Examine the JCIDS relationship to the Defense acquisition management system.</p> <p>Review the JCIDS and analyze the JCIDS impact on the development and acquisition of information technology systems from both weapon systems and business systems perspectives.</p> <p>Explain the purpose of the Initial Capabilities Document (ICD), Capability Development Document (CPD), and the Capability Production Document (CPD).</p> <p>Distinguish the differences between systems developed and acquired using the MDAP/JCIDS process and those determined to be DoD Business Systems developed and acquired using the BCL model.</p>
2	<p>Explain the interrelationship of the Planning, Programming, Budgeting and Execution (PPBE) system with the Joint Capabilities Integration & Development System(JCIDS) and the Defense Acquisition System (DAS) when obtaining the Information Technology/Software Intensive Systems (IT/SIS) required by the DoD.</p> <p>Articulate the temporal sequencing, major players, and expected products from each of the four phases of the Planning, Programming, Budgeting And Execution (PPBE) system.</p> <p>Given an IT/SIS acquisition program, apply cost estimation methodologies to recommend appropriate strategies for budget execution within the legislation and guidance of PPBE.</p> <p>Given an IT/SIS acquisition program, recognize the mathematical processes of the various cost estimation methodologies available to recommend appropriate strategies for budget execution within the legislation and guidance of PPBE.</p> <p>Apply multiple cost estimation methodologies to the analysis of an acquisition program to determine the status of budget execution throughout the acquisition life cycle, understanding the relative accuracy of the methods at different points within the acquisition framework.</p> <p>Identify the process for generating a Program Office Estimate, including the statutory and practical applications of such estimates, and the relationship of those program level budgets to the various independent cost estimates (ICEs).</p> <p>Determine the impact of COTS, Learning Curves, and other Cost Drivers on achieving an accurate estimation of Program costs.</p>
3	<p>Given an existing DoD program, demonstrate where and how architecture concepts and principles are applied to the acquisition of software intensive systems and IT infrastructure in accordance with DoD policy, guidance and best practices.</p> <p>Discuss the impact of Title 40/CCA on the acquisition of IT/SIS.</p> <p>Investigate the rules, guidelines, instructions and Best Practices to ensure that the projects/programs for which the students may be responsible are Title 40/CCA compliant.</p> <p>Document the requirements for project/program reporting listed in OMB Circular A-11 Section 53 and Section 300.</p> <p>Discuss the concept of Portfolio Management (PFM), and describe rules, regulations, guidelines and Best Practices for Portfolio Management.</p> <p>Explain additional Program Planning Requirements such as Interoperability, Data Sharing, Information Assurance, Spectrum Management, et al.</p>
4	<p>Improve the security of system acquisition processes and software products and improve/assure the protection of system information by applying information assurance policies, concepts, and methods in a notional software-intensive system.</p> <p>Explain Information Assurance (IA), related IA terminology, and associated roles and responsibilities of IT system developers, managers, and IA personnel.</p> <p>Explain the basic concepts and best practices associated with IA.</p> <p>Relate IA guidance and policies to the underlying framework for Defense in Depth.</p> <p>Explain the major components of the DoD Information Assurance Certification and Accreditation Process (DIACAP).</p> <p>Explain common criteria and its foundational concepts.</p>
5	<p>Given a notional Information Technology (IT) system, be able to describe the needed documentation and decisions necessary for an Information Technology (IT)/Software Intensive System (SIS) to prepare for an Alternate Systems Review (ASR) and subsequent Milestone A early in its lifecycle and identify potential development risks.</p> <p>Explain the contents of an Initial Capabilities Document (ICD) with respect to an IT/SIS system and the JCIDS contribution to the Alternate Systems Review (ASR) in preparation for Milestone A.</p> <p>Demonstrate how the Analysis of Alternatives (AoA) guides the Program Planning.</p>



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	Develop a Technology Development Strategy (TDS), Test and Evaluation Strategy (TES), Systems Engineering Plan (SEP) and Information Assurance Strategy (IAS) for IT/SIS system in the exercise scenario provided.
	Complete a simple cost estimate in preparing the POM input and establishing program baseline using the provided exercise scenario.
	Demonstrate the compliance of the exercise system with the Clinger-Cohen Act (CCA) criteria.
	Demonstrate how the IA Strategy impacts an IT program early in its lifecycle for the given exercise scenario.
	Demonstrate how a risk assessment and a Technology Readiness Assessment (TRA) are used early in the lifecycle.
	Generate an IT/SIS life-cycle support plan for the exercise scenario.
6	Given an existing DoD IT/SIS program, students will demonstrate where and how Systems Engineering and architecture concepts and principles are applied to the acquisition of software intensive systems and IT infrastructure support in accordance with DoD policy, guidance and best practices.
	Examine the impact of laws, policies, and regulations requiring the application of Enterprise Architecture concepts to DoD IT acquisition programs and projects.
	Explain how Enterprise Architecture can be used to describe the relationships between business processes and the technology infrastructure that supports and enables them.
	Describe the architectural relationship between weapons systems and their embedded information technology.
	Explain how the DoD Architecture Framework provides the structure needed to develop integrated architectures in support of net-centric tenants and transformational processes.
	Assess the potential costs and benefits associated with the development and maintenance of a C4I Support Plan (C4ISP) and the use of Enterprise Architecture processes and products to identify and document capability gaps in support of the Joint Capabilities Integration and Development System (JCIDS).
	Explain how the DoD IT Standards Registry (DISR) supports DoD Enterprise Architecture efforts and improve information system interoperability and integration.
	Explain how Global Information Grid (GIG) policy and requirements impacts information technology acquisitions.
	Track how the DoD information technology systems engineering process unfolds along the same timeline as the DoD Acquisition Management Framework and SE process compliance reviews.
	Explain the nuances of the Systems Engineering process for IT systems compared to the process for developing and acquiring hardware-based systems
7	Given an IT System Acquisition, justify the implementation of certain risk management techniques at different points throughout the program life-cycle.
	Determine what constitutes an effective Risk Management (RM) program for an IT system acquisition.
	Identify the three components of risk and effectively contrast risks versus issues.
	Distinguish which planning and preparation elements are needed for effective RM in a given IT System Acquisition example.
	Explain the five components of the RM process model as stated in the DoD Risk Management Guide (October 2006).
	Identify risks inherent to a specific Information Technology (IT) system acquisition example.
	Correctly apply Department of Defense (DoD) RM Guidance to a sample IT System Acquisition project.
8	Based on a given notional Software Intensive System (SIS), students analyze what documentation, key decisions and entry/exit criteria are needed in Technical Reviews associated with early defense lifecycle activities.
	Demonstrate the purpose for and the existence of the conditions that must be present for a Software Specification Review (SSR).
	Describe how the contents of a Capabilities Development Document (CDD) and associated Key Performance Parameters (KPPs) and other information are used in lifecycle reviews such as a System Functional Review (SFR), System Specification Review (SSR), and Preliminary Design Review (PDR).
	Describe the importance of key programmatic and technical documentation (e.g., AoA, TEMP, SEP, architecture artifacts, etc.) needed for SFR, SSR, and PDR events.
	Update key Program Objective Memoranda (POM) inputs needed for the exercise system EMD Phase.
	Demonstrate that Clinger-Cohen Act (CCA) compliance and other legal criteria associated with SIS development efforts have been completed for this phase of the exercise.
	Update appropriate Post Deployment Software Support (PDSS) risks as a result of the TD phase exercise situation.
	Describe the contents, use, and role of the Information Support Plan (ISP) plays in SIS acquisition and development efforts.



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	Describe the benefits of generating the ISP document for an IT/SIS system using the enhanced ISP (EISP) CASE tool.
9	<p>Given a software-intensive information technology system, students will apply system and software Quality, Verification and Validation (V&V), and Test and Evaluation (T&E) principles, processes, methods, and tools to produce, test, verify, and validate the system's technical, functional, and performance characteristics (including interoperability).</p> <p>Based on accepted software quality definitions, recognize the quality issues unique to software.</p> <p>Recognize the definitions of software quality and be familiar with the quality issues unique to software.</p> <p>Identify practices and processes that are commonly found in quality software development efforts.</p> <p>Investigate software test Best Practices to develop elements of an effective IT/SIS test program.</p> <p>Generate an effective IT/SIS test program using elements of current and emerging software test tools and test processes.</p> <p>Identify lifecycle testing events and issues, the purpose of independent verification and validation (IV&V), and the software test and evaluation mission.</p>
10	<p>Apply appropriate design considerations to include COTS, reuse, safety and software assurance policies, concepts, and methods to develop or acquire software intensive systems/designs to an IT/SIS acquisition.</p> <p>Relate reasons why Configuration Management (CM) is critical to the success of Software Intensive Systems.</p> <p>Supply at least three reasons why interface management and documentation are important to the development of DoD Software Intensive Systems.</p> <p>Describe why continuing the spectrum management process throughout the lifecycle of an IT program is critical.</p> <p>Identify the underlying reasons for DoD instruction regarding employing a Modular Open Systems Approach (MOSA) and its associated principles.</p> <p>Recognize potential areas of software safety issues and risks when reviewing acquisition documents.</p>
11	<p>Given an IT/SIS acquisition, identify the current and emerging paradigms and associated activities that contribute to a successful development effort.</p> <p>Compare and contrast the major DoD software development paradigms and recognize new development paradigms and trends.</p> <p>Identify best practices in order to reduce software assurance vulnerabilities.</p> <p>Identify characteristics of a mature software development effort along with the underlying principles of the Capability Maturity Model – Integrated (CMMI).</p> <p>Identify unique issues and costs associated with Commercial Off The Shelf (COTS) components and software systems during a software development effort.</p> <p>Explain the concepts of agility, modularity, and open standards and Service Oriented Architecture (SOA) when designing and developing IT software and systems.</p> <p>Explain the characteristics and importance of sound data management practices during the development process.</p>
12	<p>Given an information technology (IT) systems program Work Breakdown Structure (WBS), students will develop a Statement of Work, Performance-Based Work Statement, or Statement of Objectives Objectives (SOO) to define the capabilities expected of the system such that potential bidders will be able to develop proposals that will result in a successful acquisition.</p> <p>Explain the connection between the acquisition of Information Technology systems and the rules and regulations guiding those acquisitions as propounded in the FAR and DFARS.</p> <p>Discuss methods for determining the types of systems to be developed/acquired, including the input from such systems as JCIDS, and such investigative tools as Market Research.</p> <p>Describe the major components of a Statement of Work (SOW), Performance Work Statement (PWS) and Statement of Objectives (SOO)</p> <p>Define the elements of Performance-Based Acquisitions (PBA) and Performance-Based Services Acquisitions (PBSA), consulting the FAR and DFARS to determine which of the Statements of Work (SOW), Performance Work Statements (PWS) or Statements of Objectives (SOO) is appropriate to include with particular solicitations.</p> <p>Explain the purposes and content of Uniform Federal Contract elements.</p> <p>Determine the ability of a contractor/vendor to conform satisfactorily the provisions of an IT System and included software development/acquisition contract.</p> <p>Delineate the responsibilities of the various government boards and the personnel on those boards when executing the responsibilities of the Source Selection process used to select the successful contractor/vendor from among competing qualified offerors.</p>
13	<p>Given a contract for a software intensive system, successfully manage the contract by providing the desired Capability/Equipment/ Services and planning for and delivering maintenance and upgrades.</p>



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	Given an existing Information Technology system contract, identify elements of technical contract administration, contract administration processes, and long-term contract management requirements.
	Given an existing IT system contract, explain the relationship among the Contracting Officer, Program Manager, and Contracting Officer's Representative (COR).
	Explain the relationship between the Program Manager, Contracting Officer, and the Defense Contract Management Agency (DCMA).
	Given an existing IT/SIS contract, identify the need to negotiate for data rights and intellectual property for both the original contract and all related follow-on contracts.
	Given an existing IT contract, discuss the duties and obligations of the Contracting Officer's Representative, including the required documentation, logs, list of responsibilities and prohibitions, and general Best Practices for CORs.
	Given an IT contract, identify the types of authorized changes that may be made.
	Given an IT contract, identify the types of unauthorized commitments that may be charged and the process for resolution of those charges.
14	Given a notional Software Intensive System (SIS), students will be able to detect needed documentation, key decisions and entry/exit criteria related to supporting the systems-level Critical Design Review (CDR) and subsequent Post-CDR Assessment Report.
	Select software-related criteria appropriate for key reviews such as the CDR, the TRR, the SVR/FCA, and the PCA.
	Explain the program's requirements to provide the MDA critical design information after the CDR.
	Appropriately apply Software Quality criteria as related to the program risks identified in the example exercise.
	Apply Risk Management principles in identifying program risks and related software measures relevant to the SIS development represented by the example IT program scenario.
	Identify the tasks that are critical to program success in a typical IT/SIS contract.
	Develop appropriate Award Fee criteria for critical contracted tasks.
	Develop the government and contractor Work Breakdown Structure for the exercise example problem.
	Explain the purpose and generate the content for the contractor's Software Development Plan (SDP) for the exercise problem.
15	Given an IT/SIS Acquisition, plan for and manage the deployment, sustainment, maintenance and disposal of IT/SIS hardware and software.
	Given an existing IT/SIS, identify the important software life cycle planning documents and their major components.
	For an existing IT/SIS, recognize critical success factors for software transition.
	Given an existing IT/SIS, demonstrate the keys to successful software sustainment and support.
	Compare and contrast the types of software maintenance.
	Given an operating IT/SIS, explain the elements, purpose, outcomes and issues of the DoD software disposal process.
16	Given descriptions of current and emerging information technology (IT) systems and techniques, evaluate these technologies for potential use by component services of the DoD.
	Describe emerging and advanced information technologies.
17	Given an IT/SIS Acquisition, plan for and manage the deployment, sustainment, maintenance and disposal of IT/SIS hardware and software
	Given a sample problem IT system in sustainment, generate the important software life cycle planning documents and their major components.
	Using the sample exercise, identify critical success factors for software transition.
	Determine the appropriate DoD software deployment strategy for the IT system in the exercise provided.
	Describe the keys to successful software sustainment and support.
	Given an exercise problem, recognize the elements, purpose, outcomes and issues of the DoD software disposal process.