DEFENSE ACQUISITION UNIVERSITY
BCF 250 – Applied Software Cost Estimating

171002

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

1	**Explain the importance of software cost and schedule estimating in the Department of Defense (DoD).**
	Discuss how software cost and schedule estimating is important and the primary ways in which software cost estimating is different from hardware cost estimating
	Given the DoD acquisition decision-making process, describe the role of software estimating
	Describe the software life-cycle and systems engineering process in accordance with International Standards Organization/International Electrotechnical Commission (ISO/IEC) 12207:2008(E)
	Describe the importance of the Cost Analysis Requirements Document (CARD) in establishing a technical baseline for software estimates
	Identify major cost drivers in software estimating
2	**Identify and understand the different software development paradigms used in the Department of Defense (DoD).**
	Identify various software development paradigms.
	Given the different software development paradigms, compare and contrast them.
	Given each software development paradigm, describe the software cost estimating implications.
3	**Utilize and prepare key data for software cost estimating**
	Identify key data sources for software cost estimating
	Update a CSDR Plan to include new software items
	Extract program software data from the Functional Academic Cost Assessment Data Enterprise (FACADE), in lieu of the Cost Assessment Data Enterprise (CADE), repository
	Normalize historical software data
	Select appropriate data to use from an extensive database for CER creation
4	**Given relevant data, develop and apply a custom-built software Cost Estimating Relationship (CER) and Schedule Estimating Relationship (SER) to estimate software development cost and schedule**
	Calculate ESLOC given appropriate SLOC counts
	Calculate the impact of code growth to initial estimates
	Given relevant data, develop a software CER to estimate software cost in accordance with the parametric cost estimating technique
	Describe the importance of a software schedule estimate to the overall program schedule
	Develop a SER to estimate this schedule
	Use the accuracy indicators of MMRE and Pred(25) as part of the evaluation of a software CER
	Briefly describe the strengths and weaknesses of off-the-shelf (OTS) software cost estimating tools
5	**Identify and understand different probability distribution-based methods for time-phasing a software cost estimate**
	Describe two main types of probability distribution-based methods that can be used to time-phase a software cost estimate across its schedule
	Given a Rayleigh distribution generator, input parameters based on a previous software cost and schedule estimate to obtain a reasonable time-phased solution
6	**Explain the basic process of Software Cost Estimating using system Function Points**
	Describe concept and purpose of Function Point (FP) software cost estimating method
	Describe the process to perform FP software cost estimating
	Define terms pertinent to FP software cost estimating including Function Points Analysis (FPA) and Software Non-Function Assessment Process (SNAP) points
	Identify strengths and challenges in using FP for software cost estimating
	Illustrate how the method works with an example
8	**Demonstrate knowledge of software maintenance concepts and estimating methods**
	Identify key software maintenance terms and definitions
	Describe the importance of software maintenance in the context of the software life-cycle
	Explain key considerations for estimating software maintenance costs
	Compare various techniques for estimating software maintenance costs: Cost Factor-Based, Sized-Based, Past Funding-Based, and Bottom-up methods
	Identify factors that contribute to high cost of software maintenance and sources of risk
9	**Identify key characteristics of, cost estimating considerations for, and differences between Commercial Off-the-Shelf (COTS) software and Enterprise Resource Planning (ERP) systems**
	Identify key characteristics of COTS software efforts, why they are important, and how they differ from custom software development efforts
	Explain key considerations for estimating COTS software, including primary cost drivers
	Estimate the cost of integrating COTS software

DEFENSE ACQUISITION UNIVERSITY
BCF 250 – Applied Software Cost Estimating

171002

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

	Identify key characteristics of ERP software efforts, why they are important, and how they differ from custom software development and COTS software efforts
	Explain key considerations for estimating ERP software, including primary cost drivers
	Estimate the cost of ERP software using the RICE▪FW cost driver