PROJECT MANAGEMENT AND SYSTEMS ENGINEERING DEVELOPMENT PLANNING MATRIX

LEVELS OF PROJECT LEADERSHIP	Level 1 **Participate** Team Practitioners/ Technical Engineers	Level 2 **Apply** Subsystem Leads	Level 3 **Manage** Project Managers/Project Systems Engineers	Level 4 **Strategize/Guide** Program Managers/Project Systems or Chief Engineer
APPEL CORE COURSES				
APPEL CORE COURSES	Foundations of Aerospace at NASA	Project Management and Systems Engineering	Advanced Project Management and Advanced Systems Engineering	Executive (TBD)
IN-DEPTH COURSES are offered in various topic areas. These are guidelines as to when in an individual's career a course can be taken. Individuals should attend courses to enhance competencies in current positions or for future development requirements.	**PROJECT MANAGEMENT**			
	• Beyond EVM Basics • Beyond Scheduling Basics • EVM Overview • NASA's Budgeting Process • Project Planning Analysis and Control • Risk Management • Understanding EVM • Understanding Project Scheduling	• Assessing Project Perf. • Advanced EVM Techniques • Integrating EVM with Acquisition • Continous Risk Mgmt • Management of Space Technology • Project Review Processes and Strategies • Scheduling and Cost Control	• Integrating Cost and Schedule • International Project Management (*course can be taken by anyone in a role that deals with IPM issues*) • Passing the PMP Examination	
	SYSTEMS ENGINEERING			
	• Fundamentals of Systems Engineering • Lifecycle, Processes, and Systems Engineering • Requirements Development and Management	• Concept Exploration and Systems Architecture • Decision Analysis • Developing and Implementing SEMP • Space Systems V&V • Transition, Product Delivery, & Mission Ops		
	DESIGN, MANUFACTURING, AND INNOVATION			
		• Design for Manufacturability and Assembly • Innovative Design for Engineering Applications • Seven Axioms of Good Engineering		
	COMMUNICATIONS AND LEADERSHIP			
	• Technical Writing for the NASA Engineer • Communicating Technical Issues • Negotiations	• Team Leadership • Project Management Leadership Lab	• Leading Complex Projects • Executive Presence (SELDP) • Learning & Using Leadership Models & Theories (SELDP)	• Agency Leadership Courses
	DISCIPLINE-FOCUSED TRACK			
	• Introduction to Aeronautics	• Explorations Systems and Space Operations • Mars Mission and System Design Lab • Science Mission Systems Design and Operations • Space Launch Transportation Systems		• Principal Investigator Forum

DEVELOPMENTAL WORK ASSIGNMENTS: (TO BE DETERMINED BY EACH NASA CENTER)	
DETERMINED BY CENTER — Focus on building technical skills. Assignments become increasingly complex and technically difficult.	DETERMINED BY CENTER & AGENCY — Focus on developing PM&SE leadership skills and abilities & gain a greater understanding of Agency-wide PM&SE.

LEADERSHIP ASSESSMENTS AND COACHING	
Assessments identify strengths and areas of needed development.	• Assessments target self-awareness and development of leadership behaviors identified in NASA's SE Behavior Study. • Coaching targets development of program management and systems engineering leadership behaviors.

KNOWLEDGE SHARING ACTIVITIES				
These are only examples. Each Center should identify those experiences specific to Center needs.	• Obtain a mentor. • Attend a technical conference. • Demonstrate working knowledge of Agency policy documents. • Join national & international affiliations or technical bodies (i.e. INCOSE, PMI).	• Write and present a technical paper. • Attend the Master's Forum, PM Challenge, or other non-NASA conferences.	• Write a technical paper and present at the Master's Forum, PM Challenge or external conference. • Study case studies. • Become a mentor.	• Conduct storytelling sessions. • Instruct or become a guest speaker at APPEL courses. • Write *ASK* magazine article.