

IPMA-PMO Learning Outcomes

This document lists the learning outcomes. For each learning outcome, the proficiency level required for the PMO-D, PMO-C, and PMO-B exams is indicated. It also specifies for each learning outcome whether you must understand, apply, or master it.

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1. Legend

CE	Competency element according to ICB4: in order, Group (Perspective, People of Practice), Competency number, and Competency name
No.	Subject code or letter code of the learning outcome
Subject	Learning Outcome Grouping. Within each competency element, the learning outcomes are grouped into one to a maximum of nine “subjects.”
Subject and learning outcome coding	<p>Each learning outcome has a code for reference. It is structured as follows: uppercase letter-number-digit-lowercase letter</p> <p>The uppercase letter represents the competency group, as follows:</p> <ul style="list-style-type: none"> • C: Contextual competencies (Perspective) • G: Behavioral competencies (People) • V: Technical Competencies (Practice) <p>The letter is followed by a number (one or two digits) that indicates the competency’s sequence number within the competency group.</p> <p>This is followed by a number indicating the sequence number of the topic within the competency, for example:</p> <ul style="list-style-type: none"> • C11: Perspective 1, topic 1 • C29: Perspective 2, topic 9 • V131: Practice 13, Topic 1 <p>Within each topic, each learning outcome has a letter code, for example:</p> <ul style="list-style-type: none"> • G32b: People 3, topic 2, learning outcome b (“Active listening”).
Explanation	Explanation of learning outcome or reference to relevant literature
B, C, D	IPMA level (PMO IPMA-B, PMO IPMA-C, PMO IPMA-D, respectively)
b, t, a	<p>(Maximum) level at which the learning outcome can be assessed: b – understanding, t – application, or a – analysis.</p> <p>The baseline is set at D-level for understanding, C-level for application, and B-level for analysis, respectively.</p>

2. Taxonomy

b = Understanding		t = Application		a = Analysis	
Verb	Noun noun	Verbs	Noun noun	Verb	Noun Noun
Recognize	Terms	Apply	Situations	Analyze	Analyses
Identify	Facts	Drafting	Applications	Derive	Models
Compare	Processes	Implement	Principles	Evaluate	Problems
Describe	Relationships	Calculate	Criteria	Design	Conclusions
Define	Standards	Define	Rules	Prioritizing	Predictions
Explain	Rules	Choosing	Methods	Relate	Comment
Reproduce	Criteria	Solving	Conclusions	Conclude	Concepts
Explain	Methods	Deduce		Weighing	

3. ICB 4 PMO Learning Outcomes

3.1 Contextual Competency Elements (Perspective)

No.	Topics	Explanation	B	C	D
CE	Perspective 1: Strategy				
C11	Mission, Vision, and Strategy				
a	Mission and Vision of Organizations		b	b	b
b	Core Values of an Organization (corporate values)		b	b	b
c	7-S Framework© - McKinsey Consulting		b		
d	Business Model Canvas©	Business Model Generation – Osterwalder, 2010	b		
e	SWOT		a	t	b
f	Strategy and Strategic Objectives		b	b	b
C12	Strategic Performance Management				
a	Revenue Management		b		
b	Strategic Performance Management	<ul style="list-style-type: none"> • Performance Indicators • Balanced Scorecard© 	t	b	
c	Benchmarking		t	b	b
C13	Investment Calculations				
a	Investment Calculations	Including ROI	a	t	b
b	NCW calculation	Including the concepts of cost of capital (WACC), discount rate, internal rate of return, “cash is king,” opportunity costs, sunk costs, and internal rate of return (IRR)	a	t	
c	Payback Period, Break-Even Point		a	t	
C14	Business or organizational justification				
a	Business case document (structure and characteristics)	Financial and non-financial benefits	a	t	b
b	Baseline scenario, delta measurement		b	b	b
c	Business case for the client and supplier		b	b	b
d	Business Justification Relationship and project lifecycle		t	t	b
e	Relationship with the feasibility study and benefits review / post-investment assessment		t	t	b
CE	Perspective 2: Governance, Structures, and Processes				
C21	Project Management				

a	What Is a Project		a	t	b
b	What is project management		a	t	b
c	Position of projects	Position of projects within the organization	a	t	b
d	Working Methods	Improvisation, routine, and planning	t	t	b
e	Conditions and characteristics of a project		a	t	t
f	Reasons for carrying out a project		a	t	b
g	Projects within a product's lifecycle		b	b	b
h	Phasing, managing, and decision-making	Management aspects: Triple Constraint and Iron Square.	a	t	b
i	Projects at Different Levels		a	t	b
C22	Program Management				
a	Program and Program Management		t	b	
b	When should you choose a program		t	b	
c	Differences between projects and programs		b	b	
d	Program Organization: Roles and Their Associated Tasks, Responsibilities, and Authorities	Program client, sponsor, sponsor group, program manager, change managers, program office, program steering committee, program assurance	t	b	
e	Multi-organization programs	E.g., public-private partnerships	b		
f	Program Life Cycle	Program phases and transitions between phases	b	b	
g	Core Program Documents	Vision document and blueprint, program plan, objective breakdown, business case	b	b	
C23	Portfolio Management				
a	Portfolio and Multi-Project Management		b	b	b
b	The Portfolio Organization		t	b	
c	Prioritization of Programs and Projects		t	b	
d	Portfolio process		t	b	

C24	Setting Up PPP and PMO organizations				
a	Characteristics of a PMO		t	b	b
b	PMO Value Added	PMO Service Portfolio	t	b	b
c	Steps for Implementing a PPP organization	Effects on the organization upon implementation	t	b	
C25	Organizational Theory				
a	Permanent Organization	<ul style="list-style-type: none"> Line, staff, and support functions Separation of Functions Primary process 	a	t	b
b	Organizational Configurations	Mintzberg on management Mintzberg (5 basic configurations)	b		
c	Flat versus hierarchical organization	Span of control, depth of control	b	b	
d	Supply Chain/Supply Chain Management	Effects of the relationship with suppliers and customer organizations in the supply chain on the approach to the project or program.	b		
e	Interfaces between the project/program and the permanent organization	At the strategic, tactical, and operational levels, Matrix, autonomous, and functional project structures	b	b	b
f	System approach		t	b	
g	TQM Total Quality Management		b		
h	Theory of Constraints		b		
C26	Project, Program, and Portfolio Management Standards and methods				
a	ISO Standard 21500:2021, Guidance on Project Management©		b		
b	Project Management Standards	Essence of and differences between international standards (PMBOK Guide, PRINCE2, PM ²).	b		
C27	Process Development Methods				
a	Agile	Agile Manifesto and Agile principles	t	t	b
b	Scrum	Roles, events, artifacts, concepts	t	t	b
c	Lean Six Sigma	DMAIC and DMDAV	b	b	
d	Kanban		t	b	b
C28	Human Resources Management				

a	Roles of project, line, and HR managers in HRM for project participants	In recruitment, supervision, and termination—responsibilities, dependencies, and coherence between the project organization and the permanent organization	b	b	
b	Competency Management		t	b	
c	Knowledge Management		t	b	
C29	Financial Administration				
a	Cost Classification	Fixed and variable costs, direct and indirect costs	b	b	b
b	Allocation of indirect costs	•	b	b	
c	Fundamentals of Financial Accounting	<ul style="list-style-type: none"> • Fundamentals of Financial Accounting • Accounting Records 	b	b	
d	Financial Statements	Balance Sheet, Income Statement (EBIT and EBITDA), Cash Flow Statement, IFRS	b	b	
e	Investments and Depreciation	Operating Expenses (OPEX) and Capital Expenditures (CAPEX)	b	b	
f	Project Valuation	Projects in Progress	b	b	
CE	Perspective 3: Compliance, Laws, and Regulations				
C31	Sustainability				
a	Sustainable Development	People, planet, profit Triple bottom line	a	t	b
b	CSR: Corporate Corporate Social Responsibility	Corporate Social responsibility© (CSR)	b		
c	ISO Standard 26000: 2010 CSR		b		
C32	Laws and Regulations				
a	Areas of Law and Legal Forms	Private Law, Public Law Mandatory, Regulatory, and Supplementary Law	b	b	
b	Responsibilities of the project management team in law enforcement		t	b	b
c	Agreements		t	b	b
d	Failure to comply with an agreement	Strict liability,	t	b	b
e	Tort	Strict liability, causal connection	b	b	b
f	Standards, regulations, and standards		b	b	b

g	Intellectual Property Law	Copyright, patent, and trademark law, patents, licenses	b	b	
C33	Health, Security, Safety, and the Environment				
a	Occupational Health and Safety Legislation	Risk assessment, safety plan, duty of care	t	b	b
b	Environmental legislation	Environmental Act, environmental permit (WABO), Environmental Permit, EIA (Environmental Impact report), environmental offenses	b	b	
c	Legislation in the areas of data security, privacy, etc.		t	b	b
d	Security		t	b	b
CE	Perspective 4: Influence and Interests				
C41	Influence and Interests				
a	Power and Authority		b	b	b
b	Principles of Influence – Robert B. Cialdini		t	t	b
c	Sources of Interest		t	b	
d	Sources of Power	PESTLE analysis	t	b	b
CE	Perspective 5: Culture and Values				
C51	Culture and Values				
a	Projects related to culture and values		t	t	b
a	Cultural Dimensions	All Dissenters - Hofstede	t	t	b
b	Organizational Culture and Decision-Making	Exploring and Changing of organizational culture – Quinn	b		
c	Organizational Culture Model - Schein	Values, artifacts, and assumptions	b	b	

3.2 Behavioral competency elements (People)

No.	Topics	Explanation	B	C	D
CE	People 1: Self-Reflection and Self-Management				
G11	Self-Reflection and Self-Analysis				
a	Emotional Intelligence - Goleman	Self-awareness, self-management, social skills, empathy, motivation	t	b	b
b	Rational Emotive Therapy© (RET)		b		
c	Johari Diagram		t	t	b
	Personal self-awareness:				
d	Core Quadrants	Inspiration and Quality in Organizations – Daniel D. Ofman	t	t	b
G12	Setting Personal Goals and Time Management				
a	Self-motivation		b	b	b
b	Steps in Goal Setting	Goal Setting - Locke and Latham	t	b	
c	Seven Characteristics of Effective Leadership (Covey)		t	b	
d	Personal Time Management	Eisenhower Matrix	t	t	t
e	Personal time management		t	b	
G13	Stress Management				
a	Tension vs. Stress / Burnout	Balance between workload and resilience	b	b	b
b	Symptoms and causes of stress		b	b	b
c	Stress Management for Yourself and Others	Relaxation techniques, reducing physical, emotional, and rational tension	b	b	b
d	Intervention Techniques for Reducing Stress	Energizing/motivating, team-building activities, escalation and de-escalation	b	b	
CE	People 2: Personal Integrity and Reliability				
G21	Ethics				
a	Types of Ethics	Virtue ethics, duty ethics, consequentialism, care ethics	t	b	b
b	Social justice and principles of sustainability		t	b	

c	Personal ethics versus business ethics		b	b	
G22	Reliability				
a	Aspects of reliability	Consistency/Transparency/Consistent Action/Predictability	b	b	b
b	Building Trust in a Network of Committed stakeholders	Strong and weak ties (The Strength of Weak Ties – Granovetter)	t	b	
c	UN Universal Declaration of Human Rights.		b	b	
CE	People 3: Personal Communication				
G31	Communication				
a	Communication Model	Sender, channel, receiver, message, feedback, noise	b	b	b
b	Aspects of communication	What do you mean? – Schultz von Thun: Substantive, relational, expressive, appealing	t	t	b
c	Communication channels	Oral, written, audiovisual, digital (including social media)	a	t	b
d	Miscommunication and Noise	Selective perception, cognitive dissonance, internal and external noise	a	t	b
e	Criteria for effective communication	<ul style="list-style-type: none"> • Effective, efficient, acceptable • Understandable (tailored to the target audience) 	a	t	t
G32	Conversational Skills				
a	Verbal and Nonverbal communication		t	t	t
b	Active Listening	Hmm, summarizing, paraphrasing, and asking follow-up questions; building rapport, empathy	t	t	t
c	Asking the right questions	Open, closed, suggestive and rhetorical questions	t	t	t
d	Giving and Receiving Feedback		a	t	t
e	Conversations About Bad News		t		
G33	Meetings				
a	Effective Meetings	Success and failure factors and interventions during preparation, the actual meeting, and follow-up	a	t	b

b	Agenda and Agenda Items	<ul style="list-style-type: none"> • Organization and order of agenda items • Informative, deliberative, decision-making, and planning phases 	a	t	b
c	Meeting Roles	Chair, secretary, or minute-taker, participant	a	t	t
G34	Workshops				
a	Workshop Features		t	t	b
b	Designing and conducting workshops	Process steps and workshop phases	t	t	b
c	Roles and Responsibilities in Workshops	Workshop owner, facilitator, participant, and secretary/workshop assistant support staff	t	t	b
G35	Present				
a	Presentation Effectiveness	Speaking outline, verbal and nonverbal behavior, tailoring to the target audience	a	t	b
b	Elevator pitch		t	b	
c	Key considerations for effective visual aids in a presentation		a	t	b
G36	Written Communication				
a	Effective Written Communication	Requirements: clarity; accuracy; conciseness; appeal	a	t	t
b	Document Design and Structure	Every communication includes the topic of the text, the <i>questions</i> to be discussed, and the <i>answers</i> to those questions	a	t	b
CE	People 4: Relationships and Engagement				
G41	Openness				
a	Creating an open project culture	Action science – Argyris (Model 1/Model 2)	b		
b	Aspects, characteristics, and policy Regarding openness	- Candor, accessibility, participatory and introspective openness - Influence of corporate culture, confidentiality, and security considerations	t	t	b
G42	Advise				

a	Role of the PM as a consultant	Process Consultation Revisited – Schein (3 models, 5 principles)	t	b	
c	Relationships in Consulting	Top-down / Together-against	t	b	
G43	Motivation				
		•			
a	Motivational and Hygiene Factors	How Do You Motivate Employees? Herzberg	t	b	
b	Maslow's hierarchy of needs		t	t	b
CE	People 5: Leadership				
G51	Leadership				
a	Differences and similarities between leadership and management		b	b	b
b	Leadership	Three Levels of Leadership - Scouller (public, private, and personal leadership)	a	b	
c	Situational Leadership	According to Johnson, Hersey, and Blanchard	t	t	b
d	Styles of Leadership	Leadership That Gets Results – Goleman. Authoritative style, relational style, democratic style, coaching style, pacesetting style and authoritarian style.	t	b	
e	Influence and involvement	Circles of Influence and Engagement	t	t	b
f	Assertiveness	Assertiveness vs. Compliance vs. Aggressiveness	t	t	b
g	Balance between role perceptions and role expectations		t	b	
h	Coaching		t		
i	Servant Leadership		t		
j	Vroom and Yetton Decision-Making Model		t		
CE	People 6: Teamwork				
G61	Team Life Cycle				
a	Team Development Stages	- Tuckman's Model: Forming, Storming, Norming, Performing, and Adjourning - Team Building	t	b	b
b	Stages of team formation in relation to situational leadership		t	b	b

G62	Successful Teams				
a	Team Composition	In terms of subject matter and work content, Collaboration and Competence	t	b	
b	Team Roles	Team Roles - Belbin	b	b	
c	Dealing with Resistance, the Need for “Difficult” People in the team		t	b	b
d	Causes, symptoms, and prevention of group blindness		b		
e	Managing Remote Teams		t	b	
f	Developing an effective project culture		t	b	
CE	People 7: Conflicts and Crises				
G71	Crisis Management				
a	Crisis Plan, Content and structure		t	b	
b	Desired leadership style and competencies in crisis management		t	b	
G72	Conflict Management				
a	Types of Conflicts	- Business, scarcity, power, and socioeconomic conflicts - Functional vs. dysfunctional conflicts	b	b	
b	Functional vs. dysfunctional conflicts		b	b	b
c	Stages of a Conflict	Pondy: 4-stage escalation model (1 Latent, 2 Perceived, 3 Felt, 4 Manifest)	t	t	b
d	Conflict Deregulation Mechanism in different phases of conflict		a	t	b
e	Conflict Management Styles	Thomas C. Kilmann model	t	t	b
f	PM in various roles in conflicts		t	b	
CE	People 8: Resourcefulness				
G81	Problem Solving				
a	Cause identification and analysis techniques	Cause-and-effect diagram, analytical thinking, system approach	t	b	
b	Solution identification and analysis techniques	Including expert opinion, scenario analysis, value analysis, and SWOT analysis	t	b	

c	Solution assessment and evaluation techniques	Including prototyping for assessment and multi-criteria analysis for evaluation	t	b	
d	Decision-making techniques	Consensus, majority, unanimity, compromise, authority, delegation	t	b	b
e	Analytical Problem Solving		t	b	b
G82	Creativity				
a	Stages in the Creative Process	Initiation, divergence, convergence, and decision-making phase	t	t	b
b	Divergent creativity techniques	Solution-focused formulation, mind mapping, brainstorming, brown-paper sessions, and analogies.	t	t	b
c	Additional divergent creativity techniques	Listening inside out, formulating stepping stones, and lateral thinking (such as De Bono's six Hats of Thought by De Bono).	b		
d	Convergent creativity techniques	Nominal selection as an example of filtering, and mood boards, cartoons, and mirror conversations as examples of development	t	t	b
e	Complementary and convergent creativity techniques	COCD-box© and sensory deepening alongside more analytical techniques such as value analysis and scenario analysis	b		
CE	People G: Negotiation				
GG1	Negotiation				
a	Negotiation Strategy	Thomas C. Kilman/Win-Win, Win-Lose (in accordance with conflict management)	t	t	b
b	Harvard Method (mutual gain)	Excellent Negotiation – Fisher, Ury, Patton (4 principles, plus BAZO: Best Alternative to a Compromise)	t	t	b
c	Positional Negotiation	Opening offer, target, resistance point, expected outcome, breaking point	t	t	b
d	Phases of Negotiation	Preparation, lead-up, opening, exploration, implementation, and conclusion	t	b	

e	Aspects of Negotiation	Interests, balance of power, atmosphere, substance, and room to maneuver (support base)	t	b	
CE	People 10: Results Orientation				
G101	Results-Orientation				
a	Efficiency, effectiveness, and productivity		b	b	b
b	Entrepreneurship	Entrepreneurship - Hisrich, Peters, Shepherd	b		
c	Principles and Conditions for Continuous Improvement	Kaizen: The Key to Japan's Competitive Success – Masaaki Imai	t	t	b
d	Techniques for Efficiency	Kaizen: 5S improvement approach and 5xW and 1xH, 4xM checklist	t	b	b
e	Political and Social Sensitivity		t	b	

3.3 Professional Competency Elements (Practice)

No.	Topics	Explanation	B	C	D
CE	Practice 1: Approach				
V11	Approach				
a	Success and Failure Criteria		t	t	t
b	Success and failure factors		t	t	b
c	Project Success and Project Management Team Success		t	b	b
d	Project performance management.		t	b	
e	Learning and identifying learning points		t	t	b
CE	Practice 2: Requirements and Goals				
V21	Expectations and Requirements				
a	Objectives vs. Goals	Goal (what the client wants to achieve with the result) vs. objectives (the goals of the portfolio/program/project manager)	a	t	b
b	Value Management		t	b	
c	Total Cost of Ownership		b	b	
d	Expectations, requirements, and acceptance criteria	Explicit and implicit expectations; the MoSCoW technique	a	t	b
e	Quality requirements, specifications	Functional and technical requirements, statement of requirements	a	t	b
f	Fit for use, fit for purpose		a	t	b
CE	Practice 3: Scope				
V31	Scope and Delimitation				
a	Scope	Scope definition, delineation, and interfaces with other projects or initiatives	a	t	b
b	Scope creep	Scope management	a	t	b
V32	Product Decomposition				
a	Project Breakdown		a	t	b
b	Work Breakdown Structure (WBS)	Project Structure Coding WBS Dictionary	a	t	b
c	Product Breakdown Structure	Product Flow Chart, PBS, Product Descriptions Swimlanes.	a	t	b
V33	Configuration Management				

a	Configuration Management and Configuration Items	ISO 10007:2003 Configuration Management©	a	t	b
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b	Configuration item records and configuration management database		a	t	b
c	Configuration Management Plan		a	t	b
d	Configuration Baselines		a	t	b
CE	Practice 4: Time				
V41	Planning and Phasing				
a	Planning Levels	Project, phase, and team plans	t	t	b
b	Baselines		a	t	b
c	Bar charts (Gantt charts)		t	t	t
d	Precedence chart	Critical Path, Total Float Scheduling Constraint End-Start	t	t	
e	Other scheduling constraints	Scheduling Constraints: Start-Start, Start-Finish, Finish-Finish, ALAP/ASAP, No Earlier Than Lead, Lag Free play	t	b	
f	Milestones, phases, and decision points		t	t	b
g	Phasing Models	Linear phasing (waterfall), iterative phasing, evolutionary phasing, parallel phasing, timeboxing, subproject phasing	t	t	b
h	Shortening the schedule	Crashing, fast-tracking	t	t	b
CE	Practice 5: Organization and Information				
V51	Project Organization				
a	Project Governance		a	t	b
b	Principle client/contractor		b	b	b
c	Principle of separation of technology and management		b	b	b
d	Project organization, project management team, project management structure		a	t	b
e	Roles and role descriptions		a	t	b
f	Consultation Structures and the Linking Pin principle		a	t	b
g	Responsibility Matrix (RAM, RASCI model)		a	t	b
V52	Information and Management Systems				

a	Information Management and Information Management Strategy		a	t	b
b	Information versus data		b	b	b
c	Document Management	Release levels, version management	t	t	t
d	Information Management Infrastructure hour		t	t	b
e	I/O matrix		t	b	
f	Information (Management) Plan	Advice on appropriate information management systems	a	t	b
g	Quality and Security Requirements Information and Document Management	Including legal requirements	a	t	t
h	Project File Structure	Management and specialist files	t	t	t
CE	Practice 6: Quality				
V61	Quality				
a	Process and Product Quality		b	b	b
b	Standard operating procedures		b	b	
c	Validation and Verification		t	t	b
d	Quality Management	Quality Planning, Assurance, -control, and -improvement	t	t	b
e	Quality Management Strategy and -plan		a	t	b
f	Basic Quality Tools	Histogram, fishbone diagram, Pareto analysis, flowchart	a	t	b
g	Advanced quality tools	Run chart, control chart, scatter plot	ta	t	
V62	Quality assessment, audit, and evaluation				
a	Quality review, audit, and evaluation		t	t	b
b	Inspection Methods and Techniques		b	b	
c	Test Concepts and Methods		b	b	
d	Quality registry, test registry		t	t	b
CE	Practice 7: Finance				
V71	Cost Estimate				
a	Cost Breakdown (CBS)	Including cost components, cost items, cost types, and cost objects	t	t	t
b	Link between CBS, WBS, and OBS	Control points accounts	t	t	t

c	Reserves	Contingency and management reserves; risk budget, change budget, contingency item, margin, tolerance	t	t	b
V72	Cost Management				
a	Power of Attorney			t	b
b	Reconciliation of financial project and general ledger accounts		a	t	b
c	Estimating, budgeting, monitoring		a	t	t
d	Reporting standards		a	t	t
e	Cost and Budget Monitoring		a	t	t
f	Financial Obligations		t	t	b
V73	Project financing				
a	Financing	Internal and external financing; risk-bearing and non-risk-bearing financing options	t	b	
b	Financial management and liquidity planning		t	b	b
CE	Practice 8: People and Resources				
V81	Capacity Management				
a	Capacity Planning		a	t	b
b	Leveling and Smoothing		a	t	b
c	Capacity Plan	The capacity plan is a plan for the allocation of people and resources (excluding funds).	a	t	b
d	Critical Chain Method	“Theory of Constraints” – Goldrath: Student Syndrome, Parkinson’s Law, and Multitasking, Project Buffers and feeding buffers	b	b	
CE	Practice G: Procurement				
VG1	Procurement				
a	Make or Buy: Analysis and Decision-Making	Purchasing or Outsourcing: The Role of Business Strategy	a	t	b
b	Procurement Strategy and Plan		t	b	
c	Procurement Process	Long list, short list Selection and award criteria Relationship between the project and the procurement department	t	b	b
d	RFI, RFP, RFQ		t	b	

e	Pre-contractual agreements	Letters of intent and preliminary agreements	t	b	
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f	Partnerships	Consortium, comakership, General Partnership (VOF), back-to-back agreement	b		
g	European tender	Principles, sectors, threshold amounts, procedures, selection and award criteria, penalties for non-compliance	b	b	
h	Procurement procedures		b	b	
VG2	Agreements				
a	Contract Types		t	b	
b	Common Contract Clauses	General Terms and Conditions	t	t	b
c	Best-Efforts and Performance Obligation		t	t	b
d	Financial Collateral	Bank guarantees, letters of credit, export guarantees	t	b	
e	Contract Management	Monitoring of contract terms	t	b	
f	Claims Management	Defensive and offensive claims strategy.	t	b	
CE	Practice 10: Planning and Control				
V101	Preparation				
a	Project mandate, project proposal and project preparation phase		t	t	b
b	Project Assignment		t	t	b
c	Initial Project Decision	Decision to Justify	t	t	b
V102	Decision Phase				
a	Start-up workshops and kick-off meeting	Differences and characteristics	t	t	b
b	Project Management Plan		t	t	b
c	Setting up project support		a	t	t
d	Project evaluation, second decision	Decision to Fund	t	t	b
V103	Estimation Methods				
a	Gross-net (available) capacity		a	t	b
b	Estimation Methods	Single-expert or multi-expert estimates (Delphi method), equal bet, velocity analysis, planning poker, historical data, analogies, effort models, parametric estimates	a	t	b

		(e.g., function point method in software development) and three-point estimates.			
c	Uncertainty analysis	PERT (mean and standard deviation), z-table	a	t	
V104	Control and Reporting				
a	Management by Objectives	Setting SMART Goals	b	b	b
b	Management 'by Exception'	Tolerances and Escalations	t	t	b
c	Day-to-Day Management		t	t	b
d	Managing a Phase Transition	Exception Handling Phase transitions phase plan	t	t	b
e	Escalation Procedure		a	t	b
f	Project Control	Project Management Product and	t	t	b
g	Deming's Control Cycle	Plan-Do-Check-Act	t	t	t
h	Management and Reporting Levels		t	t	t
i	Earned Value Analysis		a	t	
j	Trend Analysis	Slip Charts	a	t	b
k	Various Reports	Progress report, phase completion report, project completion report, deviation report, lessons-learned report	a	t	t
V105	Change Management				
a	Change Management vs. change management		b	b	b
b	Changes and Project Issues	Distinguish between change requests, deviations from specifications, and other project issues	t	t	t
c	Change Strategy and Procedure	Issue Register		t	t
d	Change Authority and Change Budget		a	t	b
e	Priority and urgency		a	t	b
V106	Closure				
a	Delivery and handover of project results	acceptance protocol), including "as-built" documents	t	t	b
b	Project Wind-Down	Identify/recommend follow-up actions, including a post-investment assessment Clean up, close out, and transfer the project file	t	t	b

c	Evaluation	Facilitation	t	t	b
d	Closing and Discharge		t	t	b
CE	Practice 11: Risks and Opportunities				
V111	Risk Management: Concepts, definitions, and categories				
a	Risk Management Strategy		b	b	b
b	Risk Management		b	b	b
c	Risks and Opportunities	Distinguish between risks and opportunities and issues	t	t	b
d	Opportunity/Risk Owner and Opportunity /risk action owner		t	t	b
e	Probability, impact, and time horizon		t	t	b
f	Different Types of Risks and Opportunities	Internal and external risks and opportunities Project and business risks and opportunities	t	t	b
f	Risk and Opportunity Categories	Political, economic, social, technological, legal, environmental (PESTLE)	t	t	b
V112	Risk Management Framework				
a	ISO Risk Management Standard 31000©: 2018 Risk Management		t	b	
b	• The 8 risk responses	<ul style="list-style-type: none"> • Avoid Accept/increase the risk to take advantage of an opportunity • eliminate the source of risk • Reducing the probability • Reducing the consequences/impact • Share the risk with another party Accept the risk • contingency plan 	t	t	t
c	•The 4 risk mitigation measures	<ul style="list-style-type: none"> • taking on the risk sharing the risk with a third party • increasing the probability and/or impact • ignoring 	t	t	

d	Inherent, residual, and secondary risk		b	b	b
V113	Risk Management Techniques				
a	Risk and Opportunity Register		a	t	t
b	Risk and Opportunity Identification Techniques	Risk decomposition structure, fishbone diagram/cause-and-effect diagram, Pre-mortem analysis	t	t	
c	Risk and probability assessment techniques	Monte Carlo, scenario planning, sensitivity analysis, decision tree, expected monetary value Probability Calculations and Statistical Techniques	t	b	
d	Time and cost reserves		t	t	b
CE	Practice 12: Stakeholders				
V121	Stakeholder Analysis and Stakeholder Management				
a	Analyzing Stakeholders	Identify stakeholders, recognize relationships among them, analyze their interests and influence, and determine their relationship to the project	t	t	t
b	Stakeholder Management Strategy	Stakeholder Management Strategy and Communication Plan	t	t	b
c	Stakeholder Engagement	Informing, maintaining interest, actively consulting, actively engaging them Expectation management	a	t	b
CE	Practice 13: Change and Transformation				
V131	Organizational Change				
a	Change Management		t	b	b
b	Change Management Approach		t	b	b
c	Kotter's 8-phase model for change		t	b	
d	Diffusion of Innovations - Rogers		b		
e	Disciplines of the Learning Organization/The Fifth Discipline - Senge		t	b	