

PC-24	Amec	Aker	Fluor	FW	Bechtel
1.1, 1.2, 2.0 (iv) 3.0 (i), (iii)	Generally per PC-24 but needs more depth.	Terminology definitions	ACostE classes 1-5		
		Estimate classifications: - Lang factors - Factorial or Parametric - Budget - Bottom up	Understand data/deliverables for each estimate type/class	Understand Estimating Classes and the engineering input required.	Estimating classifications & what is required for each.
1.3 2.0 (iii) 2.0 (vi)		Estimate workflow	Estimate methodology & Basis of Estimate	Develop and understand the processes involved in preparation of various categories of estimate.	Estimate process. Understand how to obtain information, what questions to ask relative to each class of estimate
1.6 2.0 (i) 3.0 (vi)		Allowances and contingencies: - documentation - cut & waste - productivity allowances - MTO allowances - design development	Estimating allowances eg cut & loss, design development	Understand the various definitions of estimate elements eg. Contingency, development, FOB etc. Understand the different allowances ie. Engineering development, contingency, MTO accuracy etc. Understand escalation, currency risk and buying forward. [7]	Allowances and contingencies
		WBS	Code of Accounts & WBS		
1.4 2.0 (v) 3.0 (v)		Cash flows	NPV, project development cycle and time value of money (cost of cash)		
1.6 2.0 (ii) 3.0 (x)		Risk & opportunity	Monte Carlo techniques and realistic range assessments	Understand fundamentals of Risk Analysis Tool and determine the perceived accuracy and contingency levels. [7]	Risk analysis
3.0 (iv), (ix)			Develop metrics and benchmarks	Understand how rates/m2, rates/tonne etc are calculated and applied. Cost curves.	Importance and use of metrics & historical data
			Understand commercial terms LSTK, EPCM, GM, Unit rate, incentive	Understand types of contracts ie. EPC, EP, FEED etc and effect they have on the scope of estimates	Estimating input into various contract types
2.0 (vii)			Understand KBase, RIB etc and when to use vs. manual techniques	Obtain an overview of the main computer programs used, eg KBase, Construction Suite.	Estimate techniques
1.7 3.0 (vii)			Impact of Variation (cost, schedule, resources) and how it varies with the project phase.		
2.0 (viii) 3.0 (viii)			Estimate review process	Understand Estimate Methodologies and Estimate Notes. Participate in an Estimate Review.	Estimate reviews
			Productivity factors, all-up hourly rates, subcontract unit rates & preliminaries	Understand types of construction manhours: norms, workface, paid, productive. Understand Productivity and how it varies worldwide. Understand preparation of "all-in" rates.	
1.4			Planning & scheduling requirements		
			Engineering services estimates eg E, PM, P, CM.	Understand terminology used in Services Estimates: JTE Count method, lump sum, reimbursable rates, salary plus multiplier, assignment conditions, home office costs etc.	Services estimation
			MTO	Understand the build-up of various types of BOQ and the design info required by each discipline in order to do a detailed MTO. Understand construction extras eg heavy lifts, temp facs, camp requirements, vendor reps etc. Also spares allowances, shipping costs, freight forwarding & customs clearance. Analyse vendor bids and subcontract tenders.	
			Analyse the info available and "fill the gaps".		Understand division of responsibility, manage expectations of others.
		Craft training		Hardware appreciation	
			Value Engineering		
	Design appreciation				