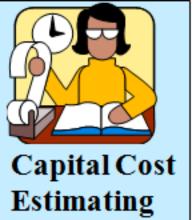
Summary of the Bare Module Method

•	
FOB	free on board, cost of equipment ready for shipment from supplier
Installed = FOB + shipping + uncrate, inspect,	
and hook up	
L+M = (installed-shipping) + piping +	
instruments + electrical + insulation +	L+M = FOB * (L+M Factor)
foundation + structure + offsites	
Physical plant $cost = L+M + shipping$	Note that shipping cannot be correlated
BM = above + home engineering + field	BM = Bare module
expense	Home off = 9% of L+M
	Field = 10 to 15% L+M
	BM = FOB*(BM Factor)
	Rough esimate
	BM factor = $(L+M)*1.4$
TM = Total fixed capital investment	TM = total module
=BM + contractors fees + contingencies	Contr = 3 to 5% of BM
	Conting = 10 to 15% of BM
Total	Working capital = $10+\%$ of fixed capital invest.
investment = above + royalty + land + spare	This could vary greatly.
parts + legal + working capital + interest during	
construction	Note: This is for isolated module, not
	grassroots plant.
Turnkey cost = total invest + Startup expenses	

Notes: 1. Total module (TM) does not account for site development, off-sites, utilities, etc. These costs would vary depending upon the equipment considered. Turton (pg. 68) suggests 35% of BM costs for this factor.



Sample cost estimation data

Costs are for mid-1970

