

SKILLS FRAMEWORK FOR ELECTRONICS SKILLS MAP - INTEGRATION ENGINEER				
Sector	Electronics			
Sub-sector	Semiconductor and Data Storage			
Track	Technical and Engineering			
Occupation	Engineer			
Job Role	Integration Engineer			
Job Role Description	The Integration Engineer applies engineering principles and techniques to analyse process interactions and improve production yields in a manufacturing environment to meet organisational objectives. His/Her work also includes analysing possible issues before New Product Introduction (NPI). He needs to finetune existing process technologies for baseline improvements and support continuous yield enhancements.			
	In addition, the Integration Engineer leads yield improvement projects. He is expected to develop failure mode analysis to address process deviations and run Design for Experiments (DOEs) to optimise process margins and determine process specifications in accordance with organisational objectives. He is also required to ensure compliance with Workplace Safety and Health and other regulatory requirements in his line.			
	The Integration Engineer is required to have strong communication skills to lead a team to meet organisational outcomes. He is expected to guide and mentor the others under his charges.			
Critical Work Functions and Key Tasks	Critical Work Functions		Key Tasks	
	Administer integration engineering	Analyse possible issues before New Product Introduction (NPI)		
		Develop Failure Mode and Effect Analysis (FMEA) to address process deviations		
		Formulate robust technical improvement solutions		
		Finetune existing process technologies for baseline improvements and support continuous yield enhancements		
	Control integration processes	Run DOEs to optimise process margins and determine process and technical specifications		
		Run prototype lots on new or derivative processes		
		Identify and resolve process integration issues		
		Review manufacturing process change requests		
	Conform to management system requirements	Identify and implement yield opportunities and set preliminary yield targets		
		Enforce compliance of safety and good manufacturing practices and processes in production areas		
		Maintain quality assurance systems		
		Monitor process performance data to establish good control parameters		
Contribute to continuous improvement	Conduct technical presentations			
	Lead continuous improvement projects			
Influence organisational development	Lead working level community to explore opportunities for improvement projects			
	Provide guidance to other engineers			
Develop training programmes for staff				
Skills & Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)	
	Audit Management	Level 4	Communication	Intermediate
	Continuous Process Improvement	Level 4	Decision Making	Intermediate
	Data Analytics Systems Design	Level 4	Leadership	Intermediate
	Data Synthesis	Level 4	Lifelong Learning	Intermediate
	Defect Density Monitoring	Level 4	Teamwork	Intermediate
	Effectiveness Management	Level 4		
	Electrostatic Discharge Control	Level 4		
	Embedded Systems Integration	Level 5		
	Emergency Management	Level 4		
	Enterprise Risk Management	Level 3		
	Factory Systems Management	Level 4		
	Failure Analysis	Level 4		
	Good Manufacturing Practices Implementation	Level 3		
	Hazards and Risk Control, and Policy Management	Level 4		
	Innovation Management	Level 3		
	Internet of Things (IoT) Management	Level 4		
	Learning and Development	Level 3		
	Manufacturing Process Management	Level 4		
	New Product Introduction	Level 4		
Operations Management	Level 4			

	Parametric Testing	Level 4	
	Technical Presentations	Level 5	
	Process Integration	Level 4	
	Quality Systems Management	Level 4	
	Report Writing	Level 4	
	Solutioning	Level 5	
	Workplace Safety and Health (WSH) Practices Implementation	Level 4	
Programme Listing	For a list of Training Programmes available for the Electronics sector, please visit: www.skillsfuture.sg/skills-framework/electronics		

The information contained in this document serves as a guide.