



**Certificate in Operations Management**

**By**

**Institute of Operations Management, UK**

# COURSE CONTENT / ACTIVITY

<i>No.</i>	<i>Syllabus</i>	<i>Content / Activities</i>	<i>Objectives</i>	<i>Outcomes</i>	<i>Hours</i>
1.	<b>Unit 1.</b> <b>BUSINESS FOR OPERATIONS MANAGERS</b>				<b>27</b>
	<b>1.1 The Business Environment</b>	1.1a Customer needs. 1.1b Competitive pressures. 1.1c Importance of small and medium sized enterprises (SME's) in the economy. 1.1d PESTLE – Political, Economic, Social, Technical, Legal and Environmental pressures. 1.1e SWOT – Strengths, Weaknesses, Opportunities and Threats. 1.1f Competitive Advantage – order qualifiers, order winners. 1.1g World Class Organisation and Best Practices. 1.1h e-strategies. 1.1j Visions and missions. 1.1k The elements and content of a strategic plan to achieve corporate mission and objectives.	The local, national, and international environments in which businesses operate. Factors that influence the operation of a business. The position of a business in today's market place. The development of appropriate business goals and the strategies to attain them.	The student will be able to:  Review the local, national, and international environments that influence business development. Explain how a business develops and communicates its policies, strategies and plans and deploys them throughout the organisation to consistently achieve its mission and objectives. Understand how to	<b>4</b>

				effectively organise and manage people to meet business goals.	
	<p><b>1.2 Strategy Communication and Deployment</b></p>	<p><b>1.2.1 Marketing Strategy – (4 hrs)</b></p> <p>1.2.1a Relationship marketing.  1.2.1b Product marketing, category management.  1.2.1c Marketing communications.</p> <p><b>1.2.2 Operations Strategy – (4 hrs)</b></p> <p>1.2.2a Variety management - Volume/variety matrix; Standardisation/rationalisation/innovation.  1.2.2b New Product Introduction (NPI) – to meet customer needs.  1.2.2c Service strategy.  1.2.2d Operational style - where do you meet your customer? - Make To Stock (MTS) – influence of competitors; Stock to forecast; Warehousing and distribution; Make To Order (MTO) – long lead time, project based; Assemble To Order (ATO)/Configure To Order (CTO) – short lead time; Engineer To Order (ETO) – long</p>	<p>The communication of the business goals, strategy and plans throughout the organisation - to every employee. The need for business functions/units to develop their lower level strategies and plans to support the corporate ones. The need for every employee to understand their own and their team’s goals and plans.</p>	<p>Discuss the concept and ownership of quality, understand the key elements of Total Quality Management (TQM) and recognise key performance measures. Illustrate the principles of budgets, variance and cash flow.</p>	<p><b>8</b></p>

		<p>lead time, including project design to customer requirements; Provide a service (operations management in a non-manufacturing environment).</p> <p>1.2.2e Manufacturing types - Project, jobbing, batch, repetitive, line, continuous process, hybrid, re-manufacturing, repair, service.</p> <p>1.2.2f Approaches to retailing - own brand, branded, FMCG.</p> <p>1.2.2g Lean Operations - Just in Time (JIT) approach, push and pull.</p>			
	<p><b>1.3 People Working Together</b></p>	<p>1.3a Building teams.</p> <p>1.3b Communicating.</p> <p>1.3c Focusing on results.</p> <p>1.3d Influencing others.</p> <p>1.3e Thinking and taking decisions.</p> <p>1.3f Management styles.</p> <p>1.3g Planning and delegating the work.</p>	<p>The organising and managing of oneself and others to effectively and efficiently deliver the business plans.</p>		<p><b>4</b></p>

	<b>1.4 Quality</b>	<p>1.4a Definition of Quality and the concept of 'right first time, every time'.</p> <p>1.4b Total Quality Management (TQM) – quality environment and culture, Quality Assurance (QA), quality systems, auditing and control.</p> <p>1.4c The quality cycle – Plan, Do, Check, Act (PDCA).</p> <p>1.4d ISO 9000/ISO 14000.</p>	Identifying, implementing and developing an appropriate quality culture and quality systems to support the business.		<b>3</b>
	<b>1.5 Cost Management</b>	<p>1.5a Setting and controlling budgets.</p> <p>1.5b Cash flow.</p> <p>1.5c Cost variances.</p>	Learning the principles of budgeting, variance and cash flow.		<b>4</b>
	<b>1.6 Performance Measurement</b>	<p>1.6a Appropriate performance measures - Financial versus Operational measures; Balanced Scorecard approach.</p> <p>1.6b Regular planning and review against the business strategy and the review of competitive position.</p>	Identifying and using appropriate measures to monitor performance.		<b>4</b>

2.	<b>UNIT 2. DEMAND AND SUPPLY CHAIN MANAGEMENT</b>				<b>42</b>
	<b>2.1 Demand and Supply Chain Concepts</b>	<p>2.1a Demand and supply chain objectives - eg reliability, flow, velocity, agility. Optimisation of multiple variables eg supply, demand, resources, purchasing, production, distribution, cost.</p> <p>2.1c The supply chain as a network, collaboration and information management, push versus pull, e-commerce.</p>	The business viewed as one link in a chain of businesses from the prime material source to the final customer.	The student will be able to:  Understand the supply chain concept and the optimisation of customer service performance. Apply the basic forecasting techniques used to determine future requirements.	<b>3</b>
	<b>2.2 Customer Focus</b>	<p>2.2a Forecasting.</p> <p>2.2b Managing customer expectations, delivery promising, order servicing, sales based ordering.</p> <p>2.2c Order fulfilment- delivery performance, vendor-managed inventory (VMI), effective customer response (ECR).</p>	Managing and fulfilling customer expectations.	Illustrate the rationale and purpose of inventory management within the supply chain. Explain the range and capabilities of systems that can support planning and scheduling	<b>3</b>

				and apply the basic techniques. Discuss the key concepts and importance of effective procurement.	
	<b>2.3. Inventory Management</b>	<p>2.3a Background and Rationale for Inventory - Types of inventory and their functions; Inventory costs.</p> <p>2.3b Physical Inventory Storage - Stock recording and importance of accuracy, bar-coding; Stock audit methods and cycle counting; Stores control and shelf life.</p> <p>2.3c Inventory Management Techniques - ABC analysis (Pareto, 80/20); Order quantity models: fixed, economic (EOQ); Order point, periodic review.</p> <p>2.3d Warehousing - Consolidation; Break bulk, cross-docking; Postponement.</p>	Learn the basic concepts of inventory management.	Interpret the relationship between manufacturing types and appropriate control systems. Explain the key features of the distribution planning of goods and services, including distribution requirements planning (DRP).	<b>8</b>
	<b>2.4 Planning and Scheduling</b>	<p><b>2.4.1 Integrated Business Systems – (3hrs)</b></p> <p>2.4.1a Closed-loop Planning - Manufacturing Resource Planning</p>	Learn the fundamentals of business planning systems.		<b>18</b>

		<p>(MRPII); Enterprise Resource Planning (ERP).</p> <p>2.4.1b Advanced planning and scheduling -material constrained planning, capacity constrained planning.</p> <p><b>2.4.2 Master Planning - (3hrs)</b></p> <p>2.4.2a Master Planning - Business Planning; Sales and Operations Planning (S&amp;OP); Demand Management; Resource (requirements) planning; Master Production Scheduling (MPS); Rough Cut Capacity Planning (RCCP); Developing a Final Assembly Schedule (FAS).</p> <p><b>2.4.3 Material Requirements Planning (MRP) - (3hrs)</b></p> <p>2.4.3a Inputs to MRP - MPS, inventory, open orders, planning parameters, (routings), bills of material, and the importance of data accuracy.</p> <p>2.4.3b Logic of MRP - Keep Projected Available Balance (PAB) greater than or equal to safety stock.</p> <p>2.4.3c Outputs from MRP - Action messages, recommended purchase requisitions, planned</p>			
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		<p>manufacturing orders, using the outputs.</p> <p>2.4.3d The impact of JIT/lean operations on material planning.</p> <p><b>2.4.4 Capacity Requirements Planning (CRP) - (3hrs)</b></p> <p>2.4.4a Inputs to CRP - Planned, firm planned and released orders, routings, and capacity data.</p> <p>2.4.4b Logic of CRP - Load versus capacity.</p> <p>2.4.4c Outputs from CRP – Load/capacity profiles, percentage loading, detail; Using the outputs.</p> <p>2.4.4d The impact of JIT/lean operations on capacity planning.</p> <p><b>2.4.5 Shop Scheduling (Factory Scheduling) - (3hrs)</b></p> <p>2.4.5a Traditional Techniques - Forward and backward scheduling; Short term scheduling techniques; Priority management techniques.</p> <p>2.4.5b Finite and infinite scheduling/loading, optimisation.</p> <p>2.4.5c Push, pull - Kanban (manual/electronic).</p>			
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	<b>2.5 Procurement Management</b>	2.5a Product specification. 2.5b Supplier selection - Total cost of acquisition. 2.5c Supplier management - Partnerships, alliances, mutual trust and dependence. 2.5d Creating the Purchase Order - Push, Pull/Kanban, synchronised schedules. 2.5e Receiving - Goods inward, line-side delivery, direct shipments. 2.5f Inspecting. 2.5g Stock receipting. 2.5h Invoice approval.	Introduce participants to procurement management – goods, services and suppliers.		<b>3</b>
	<b>2.6 Production Operations</b>	2.6a Shop floor layout. 2.6b Shop floor control (SFC) - Work order/schedule release, Work order/schedule progress - shop floor data collection (SFDC), Work order completion, stock receipting, back flushing;			<b>4</b>

		<p>Compliance - traceability, lot control, serial numbering.</p> <p>2.6c Manufacturing types - Comparison of shop floor control between the manufacturing types in C1.2.2e.</p>			
	<b>2.7 Distribution</b>	<p>2.7a Distribution Requirements Planning (DRP).</p> <p>2.7b Managing a distribution network - Centralised versus decentralised control; Push versus pull.</p> <p>2.7c Transportation modes.</p> <p>2.7d Distribution network structures – siting, quantitative and qualitative factors, and outsourcing.</p> <p>2.7e Lean supply and JIT principles applied to distribution.</p>	Gives overview of the movement of goods and services through the distribution system.		<b>3</b>
3.	<b>UNIT 3. IMPROVEMENT TECHNIQUES FOR OPERATIONS MANAGEMENT</b>				<b>21</b>
	<b>3.1 People Considerations</b>	<p>3.1a Involvement, empowerment, team working, obtaining commitment.</p> <p>3.1b Customer/Supplier partnership approaches.</p> <p>3.1c Changing responsibilities, changing focus, change agents, change management.</p>	Preparing and empowering people for and encouraging and supporting their use of improvement techniques.	The student will be able to:  Explain the concept of empowerment in the context of continuous change. Illustrate quality	<b>4</b>

		<p>3.1d Recognising the need for flexibility.</p> <p>3.1e Education, training and motivation.</p>		<p>techniques used for process improvement. Identify and apply a selection of operational and investigative improvement techniques.</p>	
	<p><b>3.2 Quality Considerations</b></p>	<p>3.2a Focus on processes, process data collection.</p> <p>3.2b Continuous improvement versus radical change.</p> <p>3.2c Quality at source – Reliable material from reliable processes.</p> <p>3.2d Statistical Process Control (SPC).</p> <p>3.2e Total preventive/productive maintenance (TPM).</p> <p>3.2f Proactive versus reactive – right-first-time versus inspection.</p> <p>3.2g Perception versus expectation in manufacturing and services.</p>	<p>The participants will learn a quality-driven approach to improvement.</p>		<p><b>5</b></p>
	<p><b>3.3 Operational and Investigative Improvement Techniques</b></p>	<p><b>3.3.1 Improvement Techniques – Operational – (3 hrs)</b></p> <p>Select 3 from those below or any other relevant techniques.</p> <p>3.3.1a Cellular manufacture.</p> <p>3.3.1b Changeover and set up reduction, eg Single Minute Exchange of Dies</p>	<p>The participants will learn about the business use and application of improvement techniques.</p>		<p><b>12</b></p>

		<p>(SMED).</p> <p>3.3.1c Pull systems, synchronisation.</p> <p>3.3.1d Visibility - Controls – Kanban; Inventory - point of use storage; Tools/methods - workplace organisation; problems - flow layout, flashing lights.</p> <p>3.3.1e 'Zero Inventory': Inventory Cost and Waste.</p> <p>3.3.1f Fail-safing (Pokayoke).</p> <p>3.3.1g 5S.</p> <p><b>3.3.2 Improvement Techniques – Investigative – (9hrs)</b></p> <p>Select 3 from those below.</p> <p>3.3.2a Brainstorming.</p> <p>3.3.2b Fishbone Diagrams (Ishikawa/Cause and Effect).</p> <p>3.3.2c Method Study.</p> <p>3.3.2d Pareto Analysis (ABC, 80/20).</p> <p>3.3.2e Root Cause Analysis.</p> <p>3.3.2f Benchmarking.</p>				
					<b><i>TOTAL</i></b>	<b>90</b>