

Module Title:	Supply Chain Planning and Control
Language of Instruction:	English
Credits:	10
NFQ Level:	8
Module Delivered In	1 programme(s)
Teaching & Learning Strategies:	Lectures - communication and discussion of knowledge, ideas and skills. Problem Solving Exercises - student will work individually and/or as part of a team to resolve relevant supply chain planning and control scenarios using the appropriate quantitative methods and tools. Students will use MS Excel to analyse and resolve problems in different supply chain planning and control scenarios. E-Learning - It is envisaged that the module will be supported with on-line learning materials. Self-Direct Independent Learning - the emphasis on independent learning will develop a strong and autonomous work and learning practices.
Module Aim:	The aim of this module is to introduce the various elements and practices that comprise the field of supply chain planning and control and to give student an understanding of the role that supply chain planning and control has within an organization and the outward impact it has on aspects of the supply chain. The module will introduce the quantitative and qualitative methods that act as planning and control aids in this field.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Discuss the key elements and practices in the area of supply chain planning and control.
LO2	Examine the quantitative tools and techniques that are used to aid decision making in the area of supply chain planning and control.
LO3	Select and apply the appropriate processes and quantitative techniques in order to problem solve in a variety of supply chain planning and control contexts requiring quantitative literacy.
LO4	Critically evaluate the outcome of both qualitative and quantitative analysis in the area of planning and control in terms of implications and limitations.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
Operations Management	

Module Content & Assessment

Indicative Content

Introduction to Supply Chain Planning and Control

Elements of planning and control in the supply chain. The processes and quantitative tools that aid decision making in the supply chain. The role of data analytics in supply chain planning and control.

Capacity Management

Determining system capacity; Three common capacity strategies; Capacity decisions for competitive advantage; The role of capacity planning in production and inventory management; Capacity planning and control techniques; Methods of evaluating capacity alternatives: Cost, Demand considerations, Expected value, Decision trees, Break even analysis; Advanced perspectives on Capacity: Waiting Line Theory, Learning Curves.

Forecasting

Qualitative and Quantitative Forecasting Methods; Selecting a Forecast Method. Time Series Forecasting Models including trend adjusted and seasonally adjusted forecasts. Causal Forecasting Models: correlation coefficient; coefficient of determination; Linear & Multiple Regression. Measures of Forecasting Accuracy. Collaborative Planning, Forecasting and Replenishment (CPFR);

Sales and Operations Planning (Aggregate Planning)

S&OP in the Planning Cycle; Major approaches to S&OP: Top down planning. Level, Chase and Mixed Production plans. Bottom up planning. Cash flow analysis. Organising for and implementing S&OP. Choosing between alternative plans. Rolling planning horizons; Implementing S&OP in the organisation. Service considerations: Making sales match capacity; Making capacity match sales; Linking S&OP throughout the Supply Chain.

Managing Inventory Throughout the Supply Chain

The role of inventory; Inventory types; Inventory drivers; Periodic Review Systems; Restocking Levels; Continuous Review Systems: EOQ & EPQ, Reorder points and safety stock, Quantity discounts. Single period inventory systems: Target service levels, Target stocking point. Inventory in the supply chain: The Bullwhip effect, Inventory positioning, Transportation, packaging and material handling considerations.

Managing Production across the Supply Chain

Study of master production scheduling activity and techniques; The structure of bills of materials, exploded bills of materials and their importance in scheduling production and procurement activity; The final assembly schedule; Two level master production scheduling; The role of the master production scheduler; Master production schedule stability and management; Using the MRP system, examples and case studies; Extensions of MRP, closed loop MRP and manufacturing resource planning(MRP II); Determining manufacturing and purchasing order quantities; Buffering concepts; Distributions Requirements Planning

JIT / Lean Production

JIT Perspective on waste; JIT Perspective on inventory: Kanban systems, Controlling inventory levels using Kanbans, Synchronising the Supply Chain using Kanbans, Using MRP and Kanban together; Strategic planning and JIT; Managerial implications of JIT; JIT in purchasing; Supplier management; Production floor management; Synchronous manufacturing; JIT performance and operating conditions.

Assessment Breakdown	%
Continuous Assessment	40.00%
End of Module Formal Examination	60.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	Written Assignment involving the use of excel in the application of quantitative tools, and evaluation of results.	1,2,3,4	30.00	Week 8
Other	Class test	1,2,3,4	10.00	Week 4

No Project

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End-of-Semester Final Examination	1,2,3,4	60.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	6.00
Independent Learning	Every Week	4.00
Total Hours		10.00

Workload: Part Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	1.50
Independent Learning Time	Every Week	5.50
Total Hours		7.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_BBSCM_B	Bachelor of Business (Honours) in Supply Chain Management	8	Mandatory