

COURSE OVERVIEW TM0115

Basic Data for Manufacturing and Production Management

Course Title

Basic Data for Manufacturing and Production Management

Course Date/Venue

February 23-27, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference

TM0115

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is designed to provide delegates with a detailed and up-to-date overview of Basic Data for Manufacturing and Production Management. It covers the importance and types of manufacturing; the differences between production and operations management, role of production managers and key performance indicators (KPIs); the manufacturing processes and techniques and data in manufacturing and production; the manufacturing planning and control (MPC) including the components of MPC and the role of data in MPC; the industry 4.0, smart manufacturing and IoT; and the role of big data in manufacturing and cyber-physical systems.



Further, the course will also discuss the principles of data collection and data analysis techniques, data management systems, performance measurement and metrics; the qualitative and quantitative forecasting methods, time series analysis and demand forecasting models; the importance and key components of production planning and control (PPC) and its role in supply chain management; the purpose of master production scheduling (MPS); and the steps to develop an MPS and data requirements for MPS.

During this interactive course, participants will learn the material requirements planning (MRP), capacity planning and management and production scheduling techniques; the inventory management, inventory control techniques, supply chain strategies, demand management and sales and operations planning (S&OP); the warehouse and logistics management, quality management, process improvement techniques and statistical process control (SPC); the decision-making models and techniques and data for root cause analysis; and the emerging trends in manufacturing data management covering AI and machine learning, digital twins and blockchain for supply chain transparency.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a basic knowledge on data for manufacturing and production management
- Discuss the importance and types of manufacturing including the differences between production and operations management, role of production managers and key performance indicators (KPIs)
- Carryout manufacturing processes and techniques and review data in manufacturing and production
- Recognize manufacturing planning and control (MPC) including the components of MPC and the role of data in MPC
- Interpret industry 4.0, smart manufacturing and IoT, role of big data in manufacturing and cyber-physical systems
- Explain the principles of data collection and apply data analysis techniques, data management systems, performance measurement and metrics
- Carryout qualitative and quantitative forecasting methods, time series analysis and demand forecasting models
- Discuss the importance and key components of production planning and control (PPC) and its role in supply chain management
- Explain the purpose of master production scheduling (MPS), the steps to develop an MPS and data requirements for MPS
- Apply material requirements planning (MRP), capacity planning and management as well as production scheduling techniques
- Employ inventory management, inventory control techniques, supply chain strategies, demand management and sales and operations planning (S&OP)
- Apply warehouse and logistics management, quality management, process improvement techniques and statistical process control (SPC)
- Carryout decision-making models and techniques and use data for root cause analysis
- Discuss the emerging trends in manufacturing data management covering AI and machine learning, digital twins and blockchain for supply chain transparency

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of basic data for manufacturing and production management for production planners, manufacturing engineers, operations supervisors and managers, material planners and controllers, inventory managers, procurement officers, data analysts in manufacturing, quality assurance and control personnel and those who are involved in manufacturing, production planning, and operations.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation


Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations:-

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Pan Kidis, MBA, BSc, is a Senior Management Consultant with over 30 years of extensive experience in Quality Control in Manufacturing, Good Manufacturing Practices Certification (GMP), Manufacturing Process Details & Quality Plan, Manufacturing Systems, Fundamentals of Manufacturing Management, Lean Manufacturing & Process Optimization, Production Planning & Control, Supply Chain Management for Manufacturing, Manufacturing Processes &

Techniques, Basics of Manufacturing Planning & Control (MPC), Process Hazard Analysis (PHA) for Manufacturing, Cost Reduction Techniques in Manufacturing, Manufacturing Data Analytics & IoT Applications, Forecasting in Manufacturing, Principles of Data Collection, Data Analysis Techniques, Data Management Systems, Production Management Fundamentals, Production Management, Warehouse Management, Production Planning, Material Requirement Planning, Data Analysis Techniques, Master Production Scheduling (MPS), Quality Management, Inventory Management, Production Planning & Scheduling, Administration Skills, Office Management Skills, Survey Skills, Interviewing Skills, Interpersonal Skills, Communication Skills, Negotiation Skills, Presentation Skills, Manager Skills, Supervisory & Management Skills, Counselling Skills, Leadership Skills, Office Management, Code of Conduct, Train the Trainer, Logistics & Transportation Planning Methods, Forecasting Logistics Demands, Visual Network Model, Logistics Operations, Strategic Transport Planning, Transport System, Fleet Planning, Routing & Scheduling, Transport Cost Concepts & Elements, Costing Vehicles & Trips, Tariff Fixing, Supply Chain & Operations Management, Logistics & Production Planning, Cost Reduction Techniques, Inventory Management, Business Analysis, Risk Management, Budgeting, Production & Shop Floor Scheduling, Cost Analysis, Database Design & Implementation, Business Administration, Production Data Acquisition & Analysis, Industrial Logistics, Process Improvement, Team Leadership & Training, Textile Manufacturing, Staff Reduction, Warehouse and Shipping. Further, he is also well-versed in Cash Flow Management, Decision Making Techniques, Production & Product Inventory Control, Inventory Analysis Tools, Stock Management Techniques, Material Handling, Process Improvement & Equipment Selection, Costing & Budgeting, Wastewater Treatment Plant Monitoring & Control, Volume Tank Measurements, Data Acquisition and Energy Conservation. He is currently the Business Analyst of Diasfalis Ltd. wherein he is responsible in the design of the proposed business model and develop and evaluate new applications.

Mr. Kidis had occupied several significant positions as the **Supply Chain Manager, Production Planning & Logistics Manager, Purchasing Office Manager, Project Manager, Assistant Dyeing Manager, Production Supervisor, Production Coordinator** and Design & Analysis Intern for various international companies such as the Hellenic Fabrics, **AKZO Chemicals Ltd.** and **EKO Refinery** and Greek Navy Force.

Mr. Kidis has a **Master** degree in **Business Administration** from the **University of Kent, UK** and a **Bachelor** degree in **Chemical Engineering** from the **Aristotle University of Thessaloniki, Greece**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and has delivered numerous trainings, courses, workshops, seminars and conferences internationally.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 23rd of February 2025

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Overview of Manufacturing Systems Definition and Importance of Manufacturing • Historical Evolution of Manufacturing Systems • Types of Manufacturing (Discrete, Process, Hybrid) • Key Challenges in Modern Manufacturing
0930 – 0945	Break
0945 – 1045	Production Management Fundamentals Definition and Objectives • Differences between Production and Operations Management • Role of Production Managers • Key Performance Indicators (KPIs)
1045 – 1130	Manufacturing Processes & Techniques Job, Batch, Mass, and Continuous Production • Overview of Lean Manufacturing • Process Flow Diagrams • Product-Process Matrix
1130 – 1230	Data in Manufacturing & Production Definition of Manufacturing Data • Types of Data: Operational, Tactical, Strategic • Importance of Data-Driven Decision Making • Challenges in Data Collection and Management
1230 – 1245	Break
1245 – 1330	Basics of Manufacturing Planning & Control (MPC) Basics of MPC Systems • Components of MPC: Planning, Execution, Control • The Role of Data in MPC • MPC in Different Manufacturing Environments
1330 – 1420	Industry 4.0 & Digital Transformation Definition of Industry 4.0 • Smart Manufacturing and IoT • Role of Big Data in Manufacturing • Cyber-Physical Systems
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2: Monday, 24th of February 2025

0730 – 0830	Principles of Data Collection Types of Manufacturing Data (Quantitative, Qualitative) • Data Collection Techniques: Manual vs. Automated • Common Data Collection Tools • Ensuring Data Integrity
0830 – 0930	Data Analysis Techniques Descriptive, Predictive, and Prescriptive Analytics • Statistical Methods for Data Analysis • Data Visualization Techniques • Tools for Data Analysis (e.g., Excel, Power BI)
0930 – 0945	Break
0945 – 1100	Data Management Systems Database Management Systems (DBMS) • ERP Systems in Manufacturing • Data Warehousing Concepts • Best Practices for Data Security

1100 – 1215	Performance Measurement & Metrics Key Performance Indicators (KPIs) • Overall Equipment Effectiveness (OEE) • Production Throughput and Cycle Time • Quality Metrics and Defect Rates
1215 – 1230	Break
1230 – 1330	Forecasting in Manufacturing Importance of Forecasting • Qualitative and Quantitative Forecasting Methods • Time Series Analysis • Demand Forecasting Models
1330 – 1420	Practical Exercises with Data Tools Hands-on with MS Excel for Data Analysis • Introduction to Power BI Dashboards • Simulating Data Trends and Forecasting • Group Activity: Analyze Sample Production Data
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3: Tuesday, 25th of February 2025

0730 – 0830	Production Planning & Control (PPC) Definition and Importance • PPC in Different Manufacturing Settings • The Role of PPC in Supply Chain Management • Key Components of PPC
0830 – 0930	Master Production Scheduling (MPS) Purpose and Importance of MPS, • Steps to Develop an MPS • Data Requirements for MPS • MPS in Make-to-Order vs. Make-to-Stock Environments
0930 – 0945	Break
0945 – 1100	Material Requirements Planning (MRP) Basics of MRP • Bill of Materials (BOM) Structure • Inventory Records and Planning • MRP Output and Action Messages
1100 – 1215	Capacity Planning & Management Definition and Importance • Rough-Cut Capacity Planning (RCCP) • Capacity Requirements Planning (CRP) • Balancing Capacity with Demand
1215 – 1230	Break
1230 – 1330	Production Scheduling Techniques Forward and Backward Scheduling • Gantt Charts and Scheduling Boards • Scheduling in Job Shop vs. Flow Shop • Scheduling Software Tools
1330 – 1420	Case Study & Exercises Case Study: PPC in a Medium-Sized Manufacturer • Interactive Exercises on MRP Calculations • Group Discussion on PPC Challenges • Application of PPC Software
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4: Wednesday, 26th of February 2025

0730 – 0830	Fundamentals of Inventory Management Types of Inventory (Raw Materials, WIP, Finished Goods) • Inventory Functions and Costs • ABC Analysis and Inventory Categorization • Inventory Turnover and Stockout Analysis
0830 – 0930	Inventory Control Techniques Reorder Point (ROP) Systems • Economic Order Quantity (EOQ) Models • Safety Stock Calculation • Just-in-Time (JIT) Inventory Systems
0930 – 0945	Break
0945 – 1100	Supply Chain Fundamentals Definition and Components of Supply Chain • Supply Chain Strategies (Push vs. Pull) • The Role of Data in Supply Chain Management • Key Supply Chain Metrics
1100 – 1215	Demand Management & Sales & Operations Planning (S&OP) Demand Forecasting Techniques • Collaborative Planning, Forecasting, and Replenishment (CPFR) • S&OP Process Steps • Data Integration in S&OP
1215 – 1230	Break
1230 – 1330	Warehouse & Logistics Management Warehouse Layout and Operations • Data-Driven Warehouse Management • Transportation and Distribution Planning • Use of Warehouse Management Systems (WMS)
1330 – 1420	Interactive Supply Chain Simulation Simulation Game on Inventory Management • Analyzing the Impact of Data-Driven Decisions • Group Discussion on Real-World Supply Chain Challenges • Software Demonstration: Supply Chain Simulation Tools
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

Day 5: Thursday, 27th of February 2025

0730 – 0830	Quality Management Definition and Importance • Key Quality Concepts: TQM, Six Sigma, Lean • Role of Data in Quality Improvement • Quality Costs and Performance Indicators
0830 – 0930	Process Improvement Techniques Lean Manufacturing Principles • Six Sigma Methodology (DMAIC) • Value Stream Mapping (VSM) • PDCA (Plan-Do-Check-Act) Cycle
0930 – 0945	Break
0945 – 1100	Statistical Process Control (SPC) Basics of SPC • Control Charts for Variables and Attributes • Process Capability Analysis • Interpreting SPC Results
1100 – 1215	Data-Driven Decision-Making Importance of Data-Driven Culture • Decision-Making Models and Techniques • Using Data for Root Cause Analysis • Case Studies of Successful Implementations

1215 – 1230	Break
1230 – 1345	Emerging Trends in Manufacturing Data Management Role of AI and Machine Learning • Digital Twins and Simulation • Blockchain for Supply Chain Transparency • Future Trends and Innovations
1345 – 1400	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org