Managing Materials Requirements Planning Course
Introduction

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Course Objectives

By the end of this Chapter, you will be able to:

- Describe the process, benefits and key terms of material requirements planning process
- Maintain master data relevant for MRP
- Perform MRP for single or all materials in the warehouse
- Run MRP reports
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ERP  (Enterprise Resource Planning)
- Business software designed to provide an integrated and systematic environment for a business to manage its daily activities
  - ECC stands for the ERP Central Component

Company Code
- Represents a legal or logical entity.
- It is the smallest organizational unit for which complete, independent accounting can be carried out

Plant
- An organizational unit for dividing a company according to procurement, maintenance and materials planning
Key Terms and Definitions

**Storage Location**
- Physical location at which a material is received and stored

**Material**
- An item or commodity that is bought or sold, a material can also be a service, or a number identifying a material master record

**Material Group (Product Category)**
- Allows you to categorize items for reporting and workload distribution among buyers and/or planners
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Materials Requirements Planning:

- Timely procurement of required materials
- Monitors stocks
- Ensures availability of all MRP materials and their components
- Creation and scheduling of planned orders based on lead times for all MRP materials/components
- Manages Inventory and Procurement
Material Requirements Planning

- MRP tries to strike the best possible balance between:
  - Ensuring materials are available as needed
  - Minimizing inventory levels

- MRP Controllers are responsible for:
  - Managing the replenishment of a large quantity of materials to cover demand from schools and offices
Material Requirement Planning

MRP depends on the following factors:

- Consumption History
- Forecast
  - Seasonal
- Transactional Data
  - STO’s from schools, open purchase orders to the suppliers
- Master Data
  - Material master
    - Re-order point
    - Safety stock
    - Service Level (%)
**MRP - Overview**

- **Maintain MRP Master Data**
  - MM02 Material Master Maintainer

- **Run Forecast**

- **MRP Run**
  - MDBT/MD03 Material Requirements Planner

- **Stock Requirements List**
  - MD04/MD07 Material Requirements Planner

- **SRM Sourcing Cockpit**
  - SRM

- **Purchase Order**
  - Buyer
MRP – Collective Access

1. Maintain MRP Master Data
   - MM02

2. Run Forecast

3. MRP Run
   - MDBT/MD03 Material Requirements Planner

4. Collective Conversion of Planned Orders
   - MD15 Material Requirements Planner

5. SRM Sourcing Cockpit
   - SRM

6. Purchase Order
Materiel Management Branch staff have the ability to maintain and manage material master records in SAP.

Materiel Management Branch staff manage material master data by assigning materials to MRP control parameters such as MRP type, MRP controller, lead time.

During an MRP run, SAP evaluates the stock situation of the material and generates planned orders which will be converted to purchase requisitions.

Purchase requisitions are transferred to SRM as shopping carts. Buyers process shopping carts in the Sourcing cockpit to complete the procurement process.

The planning parameters in the material master control the proposed delivery dates and order quantities.
The replenishment of issued materials can be accomplished by assigning the following parameters in the material master:

- MRP Type
- MRP Controller
- Safety stock (automatically populated by Forecast)
- Re-order Point (automatically populated by Forecast)
- Service Level (%)

Additional factors which the system considers in calculating replenishment requests include:

- Current inventory levels
- Open purchase orders
- Returns to warehouse
MRP balances supply with demand for materials and resources within an organization.

- It ensures that a business orders the right quantities of materials at the right time to satisfy requirements.
- It manages inventory and procurement.

![Diagram](attachment:image.png)

- **Supply**
  - Inventory
  - Open PO’s

- **Demand**
  - Safety Stock
  - Re-Order Pt
  - Stock Transport Orders
## Course Agenda

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Chapter 3 Objectives

By the end of this Chapter, you will be able to:

- Describe the process and benefits of managing material master data
- Identity the master data components involved in MRP process
- Assign MRP values to material master
Key Terms and Definitions

**MRP Type**
- Key that determines whether and how the material is planned

**Reorder Point**
- The quantity at which MRP will create a planned order

**MRP Controller**
- The person responsible for a group of materials in MRP in a plant

**Service Level (%)**
- Percentage specifying what proportion of the requirement is to be covered by warehouse stock, system uses the service level to calculate safety stock

**Safety Stock**
- Material quantity required to satisfy unexpectedly high demand, the purpose of safety stock is to prevent material shortages
SAP Master Data Views

- **Plant, Sales Org**
  - Tax, Pricing, Foreign Trade

- **Plant**
  - Production Strategy, Lot Size,

- **Plant**
  - QA Controls in Procurement and Production

- **Plant**
  - Product Costing Methodology

- **Company**
  - Material Description, Weight, UoM, Material Group

- **Plant**
  - Batch, Material Group, GR Processing

- **Storage Location**
  - Storage Conditions

- **Plant**
  - Inventory Valuation, Price

- **Basic Data**

- **Sales**

- **Purchasing**

- **MRP**

- **Storage/Warehouse**

- **Quality Management**

- **Accounting**

- **Costing**
### MRP1 View

**Display Material 6452141170 (LAUSD Materials)**

#### General Data
- **Base Unit of Measure**: EA
- **Purchasing Group**: 992
- **Plant**: 2600
- **Plant spec. matl status**: 
  - **Unspecified**: [ ]
  - **Valid from**: 

#### MRP Procedures
- **MRP Type**: V2
- **Reorder Point**: 100
- **Planning point**: 200
- **Planning cycle**: 
  - **Planning time fence**: 
- **MRP Controller**: 201

#### Lot size data
- **Lot size**: EX
- **Lot-for-lot order quantity**: 
  - **Minimum Lot Size**: 
  - **Maximum Lot Size**: 
  - **Maximum stock level**: 
  - **Takt time**: 
  - **Rounding Profile**: 
  - **Rounding value**: 25

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**MRP type indicates if a material is planned using MRP**

**MRP controller indicates who is responsible for planning the material**
Safety stock indicates the minimum stock required to avoid material shortages.

Service level helps determine the safety stock quantity, the higher the service level, the higher will be the safety stock.
Walkthrough: Display MRP Views in Material Master

This is a demonstration only. Watch as the instructor shows you how to complete the task in SAP.
Exercise: Display MRP Views in Material Master

To complete this exercise follow the instructions listed here.
## Course Agenda

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Chapter 4 Objectives

By the end of this Chapter, you will be able to:

- Describe the MRP process run at LAUSD
- Run MRP at plant level
- Run reports to view planned orders and stock requirements
The forecast must be run prior to the MRP Run. The forecast will:

- Automatically determine the re-order point and the safety stock levels based on the consumption history for the material
- The re-order point and the safety stock are found in the material master record
- The seasonal forecast model has been selected due to the spike in demand each June
LAUSD MRP Process

■ MRP run results in the creation of planned orders that may be converted to purchase requisitions

■ During MRP run, the system evaluates the stock situation of the material including:
  – Current stock
  – STO’s from school within vendor lead time
  – Reorder point

■ SAP calculates the net requirements if the stock falls below re-order level
- MRP Run can be executed for:
  - Plant, several plants or combination of these
- The following MRP run options are available:
  - Regular MRP run
  - MRP run as background job
- Planned orders are the output of an MRP run and can be converted into purchase requisitions
- MRP is run automatically once a week
  - Stores – every Sunday night
  - Foods – every Monday night
- MRP may be run by the MRP controller manually during the week one material at a time if need be.
• Each MRP controller may define traffic lights to highlight conditions that require their attention
  • Stock Day’s Supply – Number of days until all stock is consumed (except for safety stock)
  • First Receipt DS – ‘Stock day’s supply’ plus less reliable PO receipt data
  • Second Receipt DS – ‘Stock day’s supply’ plus less reliable Purchase Requisition receipt data

• MD07 can be used to quickly identify exceptions and then drill down to MD04, the stock requirements list
Stock requirements list is available to evaluate all demand and supply elements for a single material.

Exception codes may be displayed for an element in the stock requirements list.

This is a demonstration only. Watch as the instructor shows you how to complete the task in SAP.

To complete this exercise follow the instructions listed here.
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By the end of this Chapter, you will be able to:

- Display planned orders
- Create purchase requisitions
Planned orders will be created during MRP run
Planned orders are used to procure shortage quantity
Planned orders can be changed, rescheduled or deleted at any time
Planned order is generated from an MRP run for the procurement of a particular material at a determined time.

Planned order has the following characteristics:
- It is a procurement proposal in MRP for requirements coverage.
- It can be changed or deleted at any time.

Planned orders will be converted into purchase requisitions for external procurement.
MRP controllers are responsible for converting planned orders to purchase requisitions

Transaction code MD04 is used to convert a single planned order to purchase requisition

Transaction code MD15 is used to convert multiple planned orders to purchase requisitions
Walkthrough: Convert Planned Orders to Purchase Requisitions

This is a demonstration only. Watch as the instructor shows you how to complete the task in SAP.
Exercise: Convert Planned Orders to Purchase Requisitions

To complete this exercise, follow the instructions listed here.
Walkthrough: Convert Planned Orders to Purchase Requisitions (Mass)

This is a demonstration only. Watch as the instructor shows you how to complete the task in SAP.
Exercise: Convert Planned Orders to Purchase Requisitions (Mass)

To complete this exercise follow the instructions listed here.
You have just completed the course.

Thank you for attending!