

Curriculum Package*

Using Microsoft Dynamics GP 2010 R2 for an Enterprise Resource Planning Course: A Curriculum Package

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Abstract: The objective of this curriculum package is to explore a variety of ERP topics, including TQM, BPR, DRP, SCM, the detailed system development, and system implementation issues of Microsoft Dynamics GP 2010 R2.

Keywords: Microsoft Dynamics GP, SCM, Curriculum Package

COURSE OBJECTIVE

The objective of this course is to provide students with a thorough understanding of computer based Enterprise Resource Planning (ERP) systems. This course explores a variety of ERP topics, including TQM, BPR, DRP, SCM and CRM, as well as the detailed system development and system implementation issues of ERP. It provides hands-on experience in which each student will be required to create his or her own company and manage the various functions of the company's business, such as human resources, finance, accounting, manufacturing, sales, purchasing, and supply chain management. Consequently, the format of this course includes both lectures and computer lab settings. By successfully completing this course, students should be able to:

- Describe ERP, its strategic utilization, cost, and feasibility.
- Describe the issues related to ERP implementation projects.
- Explain the concepts and issues involved in BPR management at the corporate and personal level.
- Understand the installation and configuration of Microsoft Dynamics GP Version 11.0.
- Understand business processes and gain hands on experience with Microsoft Dynamics GP Version 11.0.

RECOMMENDED RESOURCES

The following resources are not required. However, they will be helpful in understanding many concepts, terms, and manufacturing processes that are necessary in order to be successful in the course.

* **Editor's Note:** This curriculum package received the honorable mention in the Microsoft Dynamics Instructional Award 2014. Curriculum package is not considered as an academic paper but it will be useful to some of our readers.

- *The Fundamentals of Production Planning and Control*. Stephen N. Chapman. North Carolina State University, Chapel Hill. ISBN-10: 013017615X, ISBN-13: 9780130176158. Publisher: Prentice Hall, Copyright: 2006
- *Concepts in Enterprise Resource Planning*. Ellen Monk and Bret Wagner. Thompson Course Technologies, 3rdedition. ISBN: 1-4239-0179-7.
- ERP Software: Microsoft Dynamics GP 2010R2 - Version 11.0, Microsoft.

COURSE POINTS

Final Exam: 30%

GP Homework: 70%

TENTATIVE CLASS SCHEDULE

Week 1	Introduction to course, Introduction of ERP and Great Plain Great Plain Installation, Company Creation and Configuration
Week 2	Human Resources Module 1 Aggregate planning / Forecasting
Week 3	Human Resources Module 2 Manufacturing Module Installation and Setup
Week 4	General ledger module setup Manufacturing Module part 1
Week 5	Master production Schedule [MPS] Manufacturing Module part 2
Week 6	Sales / Purchasing Modules Installation and Setup Material Requirements Planning [MRP]
Week 7	POP [Purchase Order Processing] Exercise Inventory Management
Week 8	SOP [Sales Order Processing] Exercise – Regular due Capacity Requirements Planning [CRP]
Week 9	MOP [Manufacturing Order Processing] Exercise Lean Manufacturing system in ERP
Week 10	SOP [Sales Order Processing] Exercise – Quote Business Process Reengineering [BPR]
Week 11	SOP [Sales Order Processing] Exercise – Back Order Supply Chain Management [SCM]
Week 12	PO / SO Return Transactions, Weekly Exercise 1 Distribution Requirements Planning [DRP]
Week 13	Weekly Exercise 2 Customer Relations management [CRM]
Week 14	Weekly Exercise 3
Week 15	Final Weekly Exercise , Enterprise Resource Planning [ERP] and beyond
Week 16	Final Exam

CASE EXAMPLES: BIG RED WAGON MANUFACTURING



The Big Red Wagon Manufacturing Corporation (BWMC) is a national manufacturer of wagons. Within the United States, BWMC is organized into regional divisions. Each division has a territory in which to conduct its business. The management of each division is responsible for the production, marketing and distribution of all Big Red Wagon products within the territory. During the last month, Big Red Wagon opened a new territory named the Illinois Region. Previously, the BWMC had refrained from developing this region because of the competition of other wagon production companies in that area. However, having developed their new wagon called the Little Red Wagon Limited (LRWL), the corporation felt confident they could successfully compete against any other existing wagon

production company. In establishing the Illinois territory, the management group in charge of the region developed a market forecast report to guide their production, marketing, and distribution decisions.

Based on the market forecast report, the Illinois region would generate a weekly demand of LRWL model of approximately 50 wagons. In order to manage the Illinois region, BWMC hired a real estate specialist to acquire existing plants with sufficient space to allow production capacity to meet the forecasted weekly market demand of all three of its models: the Little Red Wagon Basic (LWRB), the Little Red Wagon Deluxe (LRWD), and the LRWL. The company made it their policy to acquire existing plants rather than building new ones. This permitted them to expedite their production efforts and to avoid the usual legal problems associated with building a new plant. One plant with an office was eventually acquired that collectively provide adequate production space. The plant was located in northern part of the Illinois and was selected to primarily serve the cities in that area.

After a few months of operation, this plant reached its maximum weekly production rates that were enough to meet the market demand for all three models of the northern Illinois cities. At the same time the plant was being obtained, a warehouse was also acquired. This warehouse would store the finished wagon units and receive shipments from vendors who would provide parts or components to build wagons. In selecting the warehouse location, the principal criteria was based off of its physical proximity to consumer markets. The warehouse acted as a distribution center for the markets, providing wagons to meet market demand in smaller cities throughout Illinois.

GP SYSTEM INSTALLATION AND CONFIGURATION

This exercise is comprised of the overall SCM business process, which includes MOP, POP, SOP and inventory management. Students will need to follow these instructions to ensure that each step and module is completed for each weekly exercise. If any data is missing or incorrectly entered for your company, the subsequent assignments will not work properly and will end up corrupting the company's database. If this occurs, the company and database will be restored back to the original default company and the student will need to start his or her data entry from the beginning again.

The grading of the weekly exercise will be calculated based on the progress that has been made by the due date of each weekly exercise. Because of this, students cannot gain credit for any portions of the assignment that are completed after this date has passed.

The following installation tasks are explained and demonstrated in the computer lab for understanding system setup and configuration of Dynamics GP before any business processes are introduced to students.

- System requirements of Dynamics GP.
- Installation of Microsoft SQL Server 2008R2 on the server
- Data server installation and utilities
- Installation of Dynamics GP client on lab computers
- Dynamics GP system manager and system setup
- System security, user activity and preferences

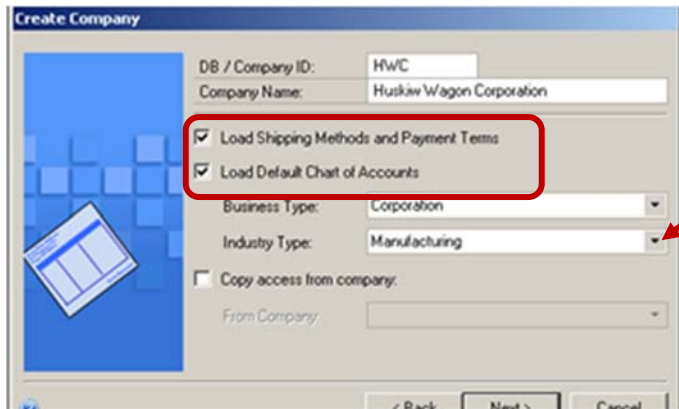
COMPANY CREATION

- Each student is required to create and name his or her own company and can name his or her own company.
- Companies will be created using Dynamics GP Utility (with the server "Administrator" as the user type).
- Each student is required to manage own company's business processes throughout the semester (with "Power user" as the user role).

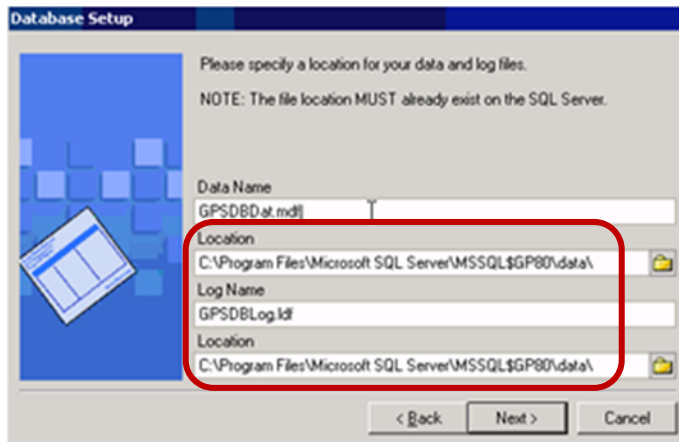
At the next screen:

1. Enter the initials [3 or 4 capital letters] of your own company name in the 'DB / Company ID.'
2. Enter your full company name in the 'Company Name.'
3. Check 'Load shipping method and payment terms.'
4. To load a default chart of accounts, mark the 'Load Default Data' option, and then a drop down menu will appear.
5. Select the 'Corporations' for the 'Business Type.'

6. Select the 'Manufacturing' for the "Industry Type." Click 'Next.'



7. In the Database Setup window, select a default location for the new files that will be created. Make sure the hard drive locations of the Data Name file [*.mdf] and Log Name file [*.ldf] are the same as the following:



8. The Company Setup Options window will appear, where you can select one of the following options to configure your company. Select the 'Set up the company later' option to set up your company at another time.
 9. Once the company is created, each student can login his or her company to setup the modules of the company.

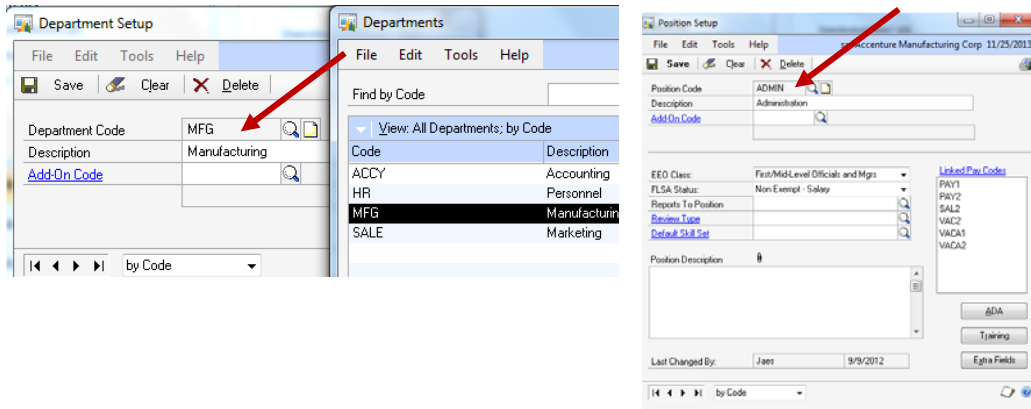
HUMAN RESOURCE MODULE SETUP

The following setup activities are required in the HR module to setup and run business processes properly:

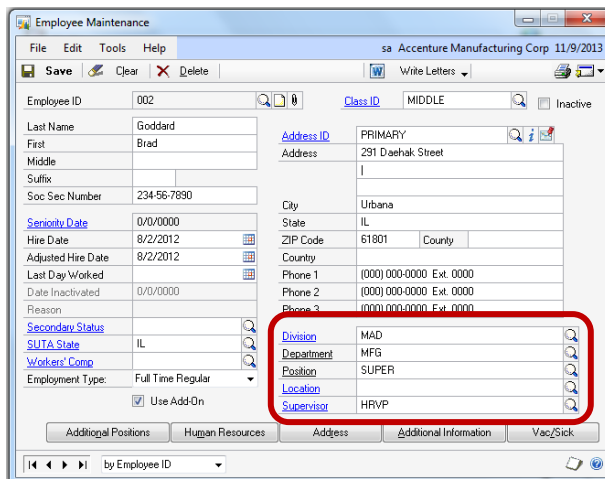
- Organization setup (4 departments and 1 manufacturing department).
- Hiring of 6 employees (3 full time and 3 part time).
- Setup employees and employee classes.
- Supervisor setup and assignment of employees to department.
- Payroll setup, utilities, pay codes, deduction, state/federal tax code setup.
- Employee maintenance, attendance setup, sick/vacation pay code.
- Payroll processing and period/year end.
- Monthly payroll transaction entry to process payroll for 6 employees.

To Setup HP Module:

1. Go to Microsoft Dynamics GP >> Tools>>Setup>>Payroll>>Department to create four departments.
2. Go to Microsoft Dynamics GP >> Tools>>Setup>>Payroll>>Position to create four position codes.



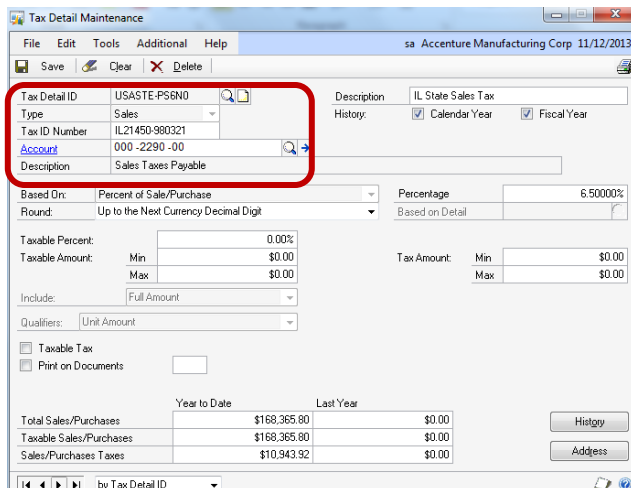
3. Go to Cards>> Human Resources >>Employee>> Employee to enter the six employee’s data.



FINANCIALS MODULE SETUP

The following setup activities are required to run business processes properly:

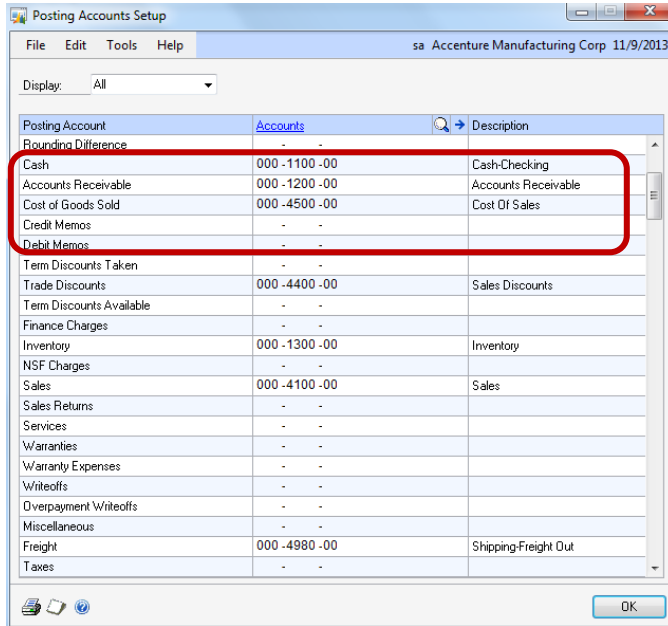
- Posting setup, posting journals, posting transactions and batches.
- Shipping methods, tax schedules and tax details (sales and purchasing tax).
- Using [ILSALES] tax schedule ID for ‘Sales’ and use [ILPURCH] tax schedule ID for ‘Purchase.’



- Fixed and variable allocation accounts.
- Setting up loan account and checking account, setup for bank reconciliation.
- Entering and posting account payable/receivable transactions and deposits.
- Entering and posting general ledger transactions/batches.
- Financial statements, reports & inquiries.
- Period & year-end procedures/processes.
- Setting up for General Ledger and setting up the Chart of Accounts (from Fabrikam).

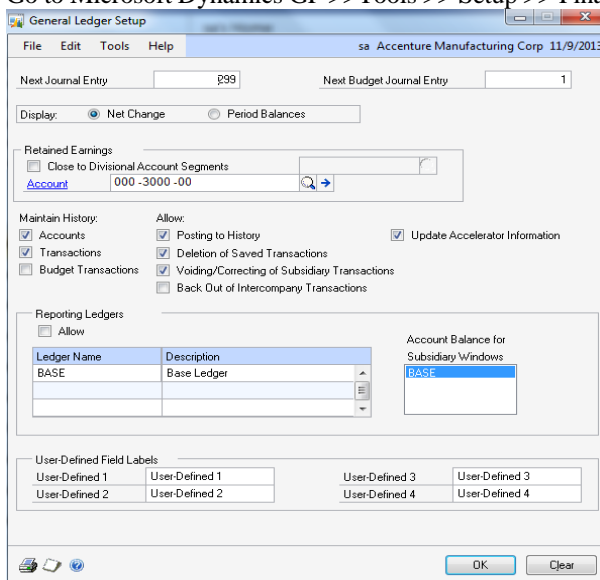
To Setup Default at Posting Accounts:

Go to Microsoft Dynamics GP >> Tools >> Setup >> Posting >> Posting Accounts



To Setup Default Entries and Preferences of General Ledger Setup:

Go to Microsoft Dynamics GP >>Tools >> Setup >> Financial >> General Ledger



INVENTORY MANAGEMENT SETUP

The following setup activities are required to run business processes properly:

1. Warehouse setup and maintenance: To define a site: Go to Cards >> Inventory >> Site.
2. Enter an identifier [WAREHOUSE] for the Site ID and a brief description [Main Warehouse] for the site.
3. Enter the address information of your choice. Enter one phone number.
4. Select tax schedules that apply to merchandise sold at this site, and to merchandise delivered to this site.
5. Use [ILSALES] tax schedule ID for 'Sales' and use [ILPURCH] tax schedule ID for 'Purchase'
6. Click 'Planning' button. Click 'Yes' to the popup of "Do you want to save changes for this setup?"
7. The 'Resource Planning Site Maintenance' window opens. Ensure the 'Warehouse' has been selected for the 'Site ID. Ensure the checkmark at the 'Calculate MRP for this site.'

The screenshot shows the 'Site Maintenance' window with the following fields filled out:

- Site ID: WAREHOUSE
- Description: Main Warehouse
- Address: 234 Fourth Street
- City: Sycamore
- State: IL
- ZIP Code: 61508
- Country Code: (empty)
- Country: (empty)
- Account Segment ID: Segment1
- Phone 1: (815) 756-3456 Ext. 0000
- Phone 2: (000) 000-0000 Ext. 0000
- Phone 3: (000) 000-0000 Ext. 0000
- Fax: (000) 000-0000 Ext. 0000
- Tax Schedule ID:
 - Sales: ILSALES
 - Purchases: ILPURCH

The 'Planning' button is highlighted with a red box.

INVENTORY CONTROL SETUP:

Go to Microsoft Dynamics GP >> Tools >> Setup >> Inventory >> Inventory Control

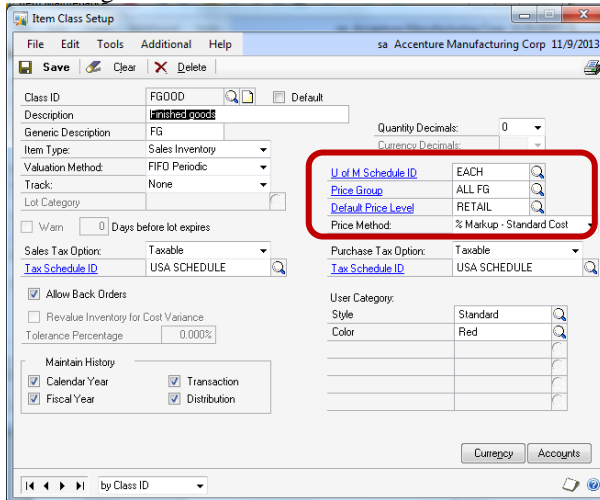
The screenshot shows the 'Inventory Control Setup' window with the following settings:

- Next Document Number:
 - Adjustment: 0003
 - Transfer: 0001
 - Variance: 0001
 - Production: 0001
 - In-Transit Transfer: 0001
- Default Decimal Places: Quantities: 0, Currency: (empty)
- Segment ID for Sites: Segment1
- Via Site ID: (empty)
- Allow:
 - Adjustment Overrides
 - Variance Overrides
 - Transfer Overrides
 - Enable Multiple Bins
 - Enable Picking Shortage Tasks
 - Autopost Stock Count Variances
 - Use Existing Serial/Lot Numbers Only on Decrease and Transfer Transactions
- Display:
 - Cost for Decrease Adjustments
- Use Expired Lots in:
 - Inventory Adjustments and Transfers
 - Other Transactions
- Auto-assign Lot Numbers Based on: Receipt Date

To setup item class and setup posting accounts - Three item classes are created – RAWM, WIP and FGOOD

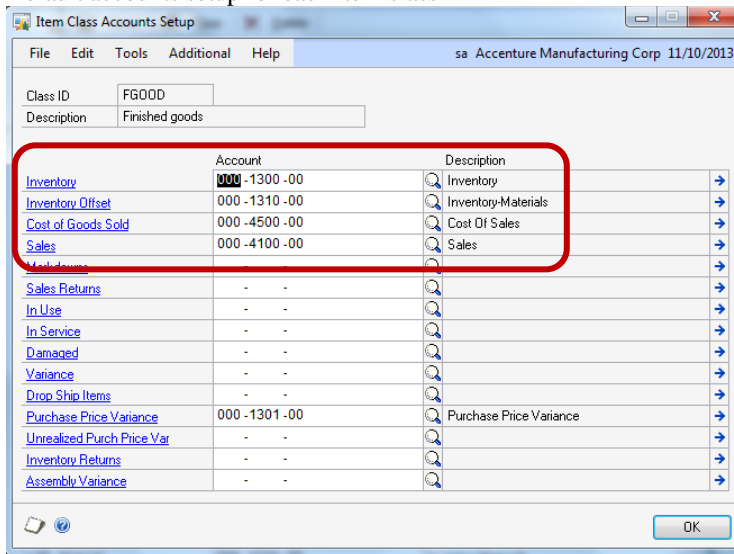
Go to Microsoft Dynamics GP >> Tools >> Setup >> Inventory >> Item Class

Finished good item class

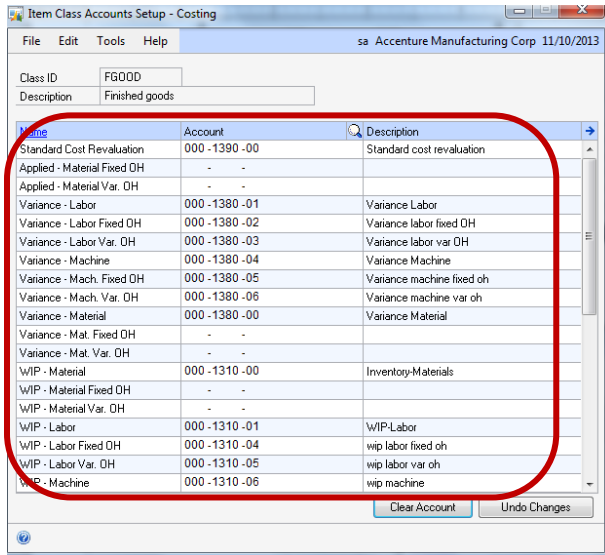


Each item class must have following default posting accounts assigned before each SKU items are created.

Default accounts setup for each item class



Default costing accounts setup for each item class



Item Setup and Maintenance - Create 3 FG items, 6 WIP items and 11 Raw M items as shown below:

Finished Product / Make item: Manufacturing Order [MO] Required [3]

LRWB	FG-Basic	LRWD	FG-Deluxe
LRWL	FG-Limited		

Work-in-process / Subassembly: Make item: MO Required [6]

FSB	WIP-Frame Set Basic	FSD	WIP-Frame Set Deluxe
FSL	WIP-Frame Set Limited	WS	WIP-Wheel Set
WSD	WIP-Wheel Set Deluxe	HS	WIP-Handle Set

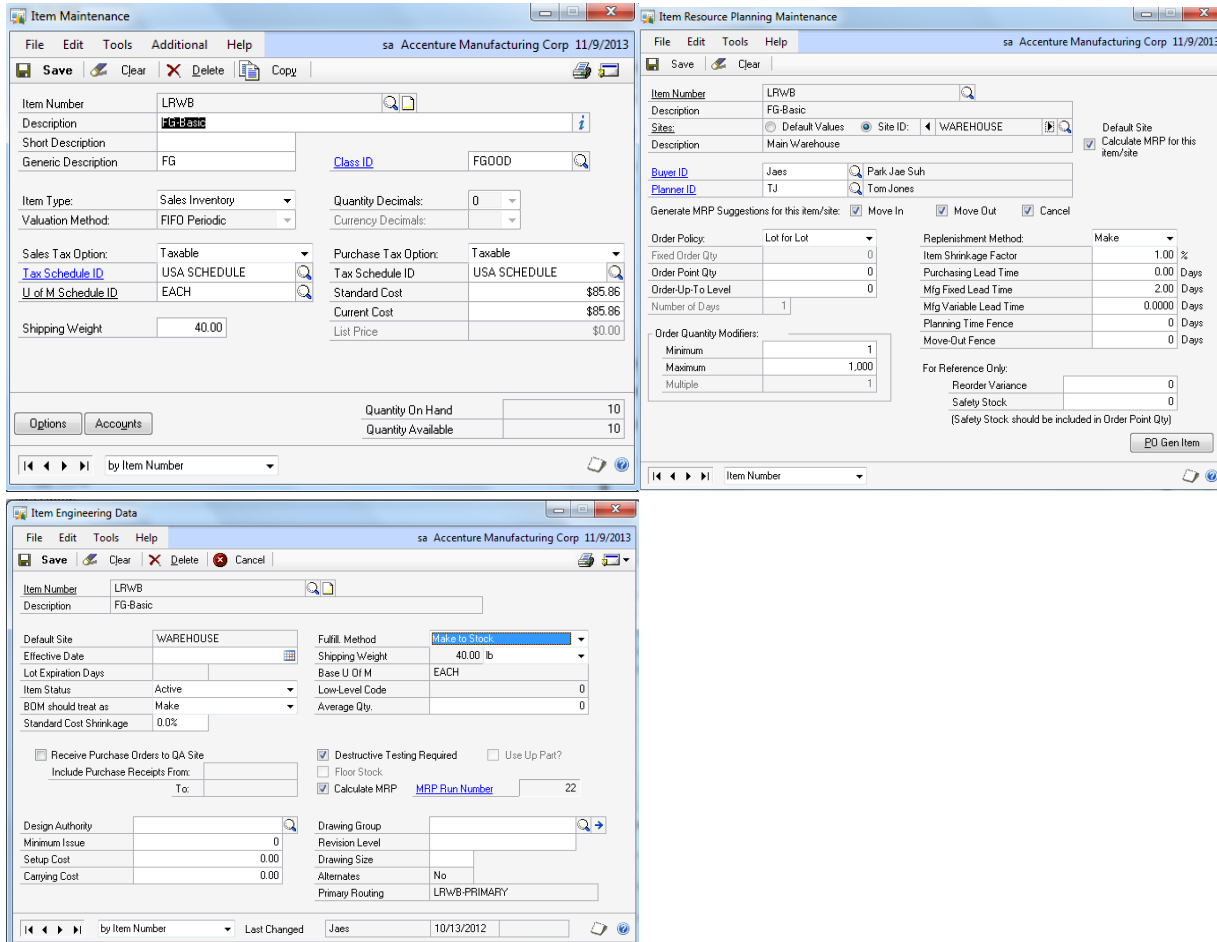
Raw Material / Components - Buy item: Purchase Order Required [11]

BB - Body Basic	BD - Body Deluxe	HAND – Handle
FP - Front Panel	RP - Rear Panel	BAR
WHEEL - Wheels	AXLE – Axle	CAP- Caps
FL - Front Light	RL - Rear Light	

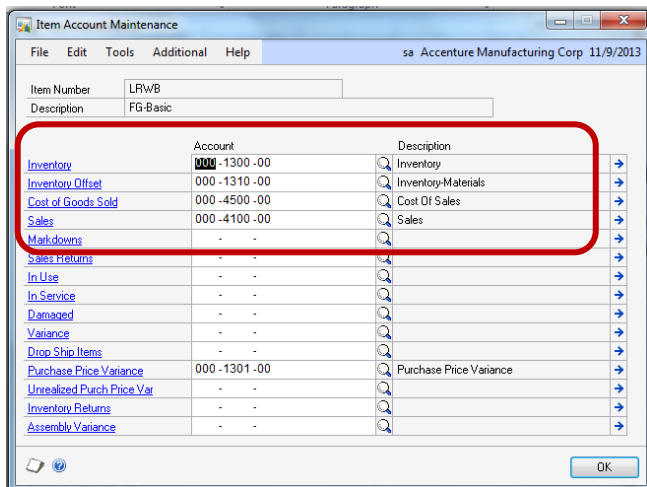
- Setup **Item resource planning**: Make-to-order, Make-to-stock
- Setup **Item engineering record**: Lot sizing techniques – EOQ, PPB, POQ, LUC, LTC

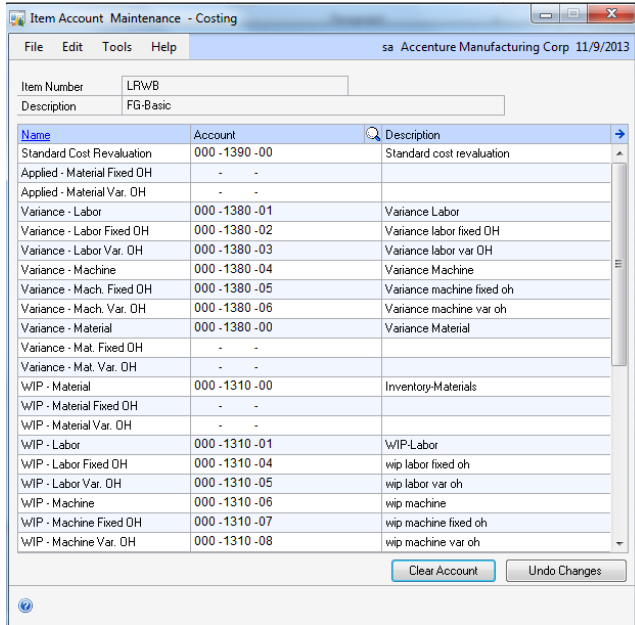
Each SKU item must have details of ‘Item Maintenance’, ‘Item Resource Planning Maintenance’ and ‘Item Engineering Data.’”

The following screen shot shows detail windows of LRWB item.



All SKU items (FGOOD, WIP and RAWM) should have its own posting accounts on Item Account Maintenance and Costing window as shown below.





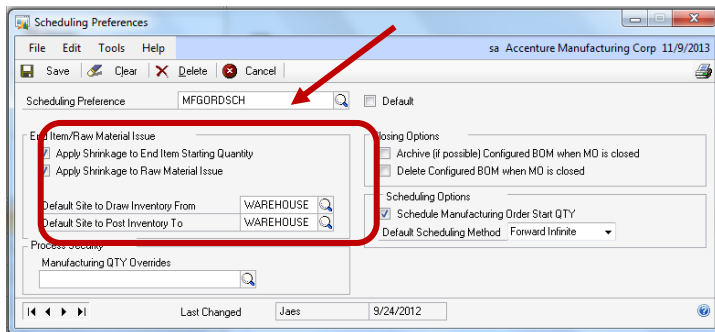
MANUFACTURING MODULE SETUP

The following setup activities are required to run business processes properly:

- Warehouse assignment of all items.
- Setup Bill of Materials (Mfg BOM for three levels).
- Setup Operation schedule, Routings and Sequence.
- Manufacturing Facility – Setup 3 Work Station and 3Machine Center.
- Setup Forecasting and setup MPS - Master Production Scheduling.
- Setup MRP - Material Requirements Planning and MRP Regeneration.
- Setup CRP - Capacity Requirements Planning, setup MOP / SOP link and MOP / POP link.
- Setup outsourcing vendor and processes, setup quality control process.

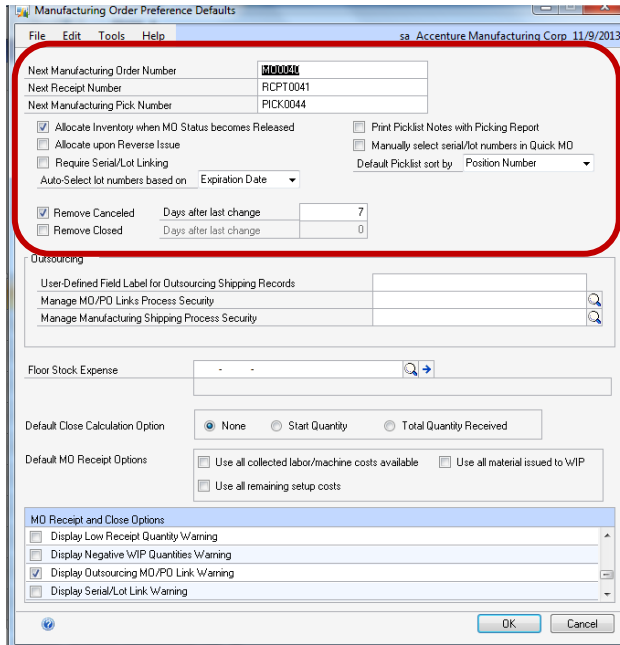
To set up Manufacturing Scheduling Preference:

Go to Microsoft Dynamics GP >> Tools >> Setup >> Manufacturing >> System Defaults >>MO Schedule Preferences.



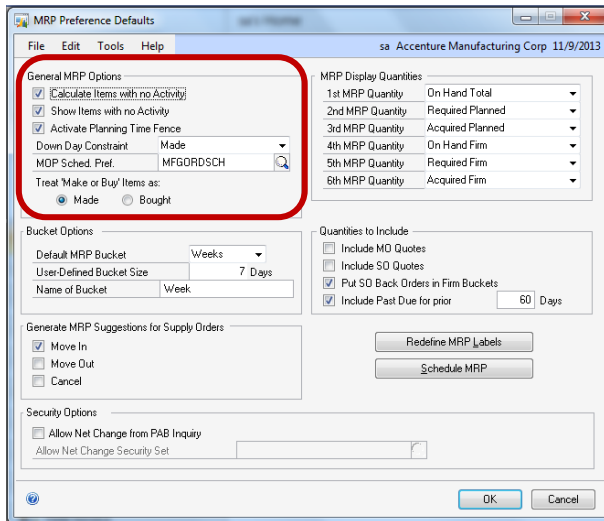
To set up Manufacturing Order Processing:

Go to Microsoft Dynamics GP >> Tools >> Setup >> Manufacturing >> System Defaults >>Manufacturing Orders.



To set up MRP Preference Details:

Go to Microsoft Dynamics GP >> Tools >> Setup >> Manufacturing >> System Defaults >>MRP.



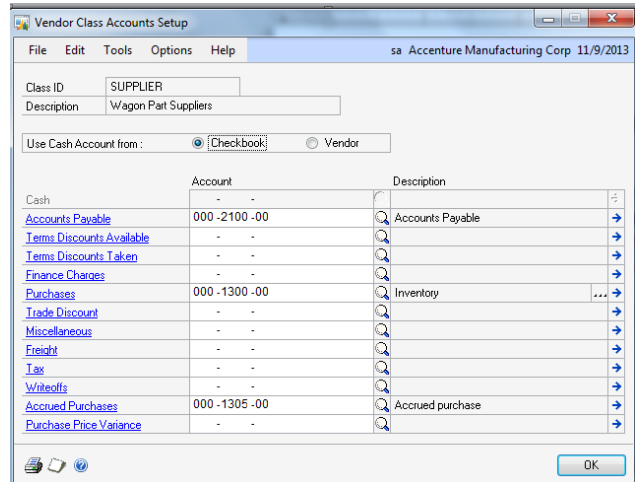
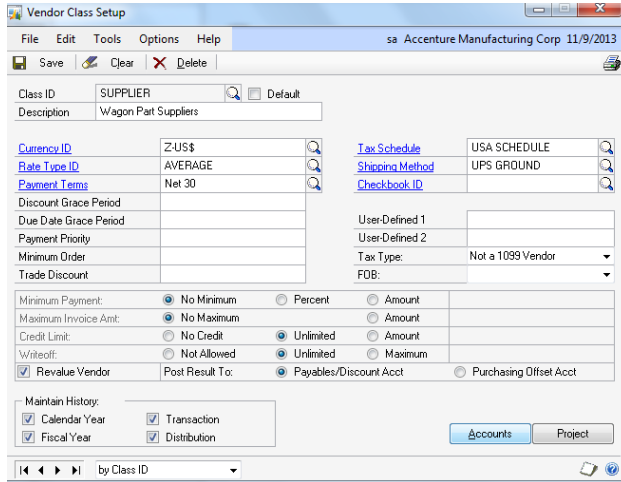
PURCHASE ORDER PROCESSING SETUP

The following setup activities are required to run business processes properly:

To setup Vendor Setup and Vendor Class ID (4 vendors + 1 outsourcing):

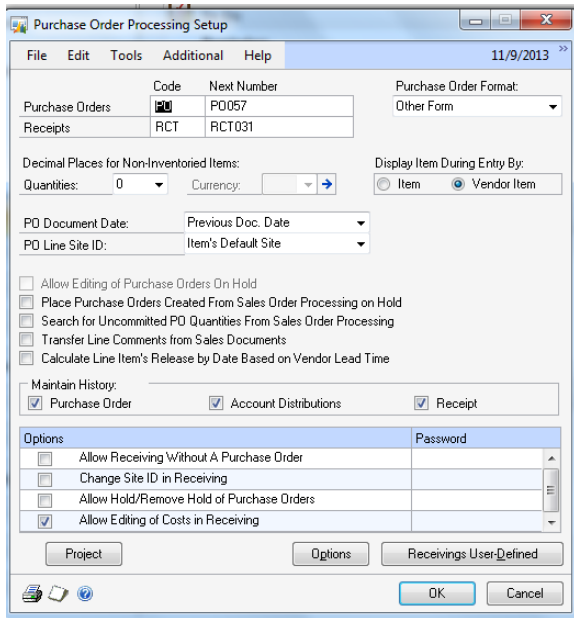
Go to Microsoft Dynamics GP >> Tools >> Setup >> Purchasing >> Vendor Class

- The 'SUPPLIER' Class ID is created and Vendor class accounts are assigned.



To setup Purchase Order Processing Preferences and Default Setup:

Go to Microsoft Dynamics GP >> Tools>> Setup >> Purchasing >> Purchase Order Processing



Sales Order Processing Setup

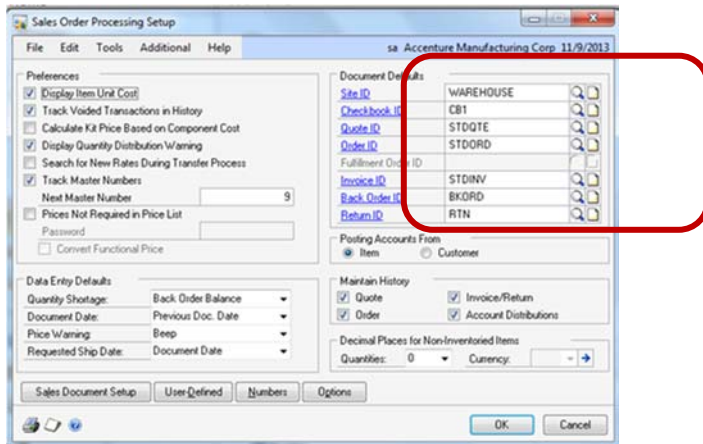
The following setup activities are required to run business processes properly:

- General Sales Order Processing Setup and Transaction Entry.
- Setting up Sales Territories & Salespeople.

To setup Sales Order Processing DEFAULT entries:

Go to Microsoft Dynamics GP >> Tools>> Setup >> Sales >> Sales Order Processing

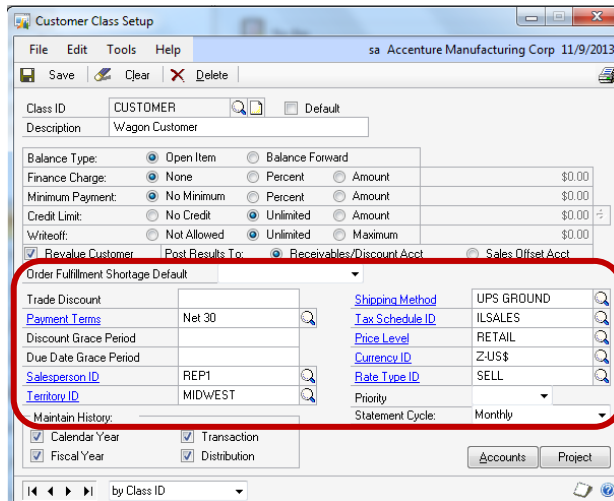
- Specify how Sales Order Processing transactions will be tracked and displayed during transaction entry.
- Setup for Quotes, Orders, Back Orders, Invoices and Returns for 3 customers.



To setup Customer Class ID:

Go to Microsoft Dynamics GP >> Tools >> Setup >> Sales >> Customer Class

- The 'CUSTOMER' Class ID is created and Customer class accounts are assigned.



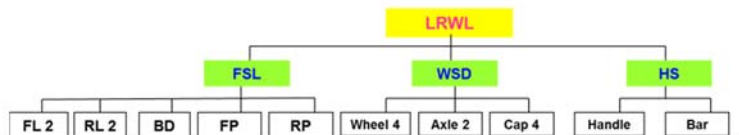
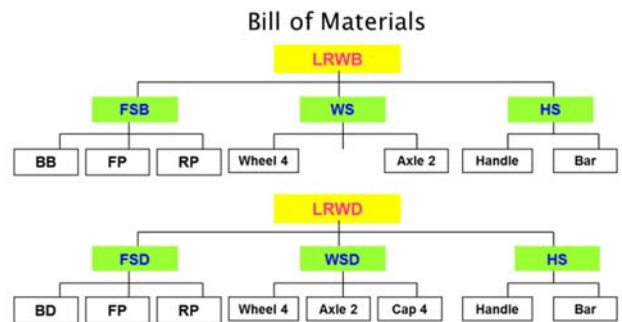
Once all details of item's data are entered, the product structures with routing information of the three types of wagons need to be created as shown below:

How to build Wagon?



WIP: Level 1 – Make or Buy item

RAWM: Level 2 – Buy item



Create the BOM of the WIP COMPONENT FIRST

LRWD: Red wagon Deluxe

Routing Sequence: 100 - 200

100: Components Preparation [WC1 → WC2]
 200: Final Assembly [WC2 → WC3]

LRWL: Red wagon Limited

Routing Sequence: 100 – 200 - 300

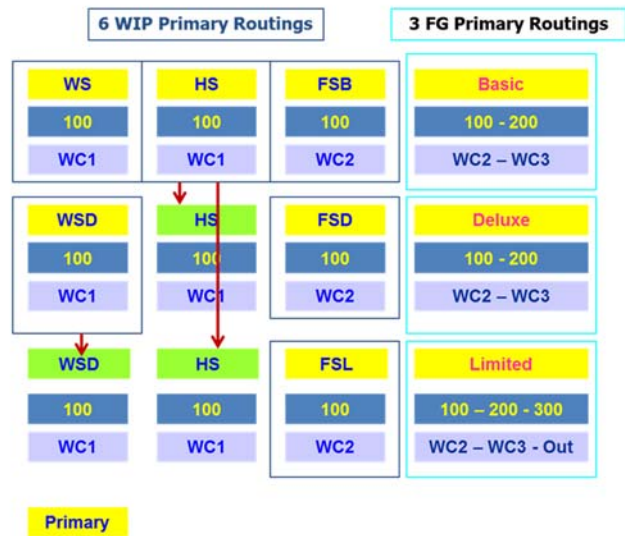
100: Components Preparation [WC1 → WC2]
 200: Final Assembly [WC2 → WC3]
 300: Decal job [Outsourcing]

LRWB: Red wagon basic

Routing Sequence: 100 - 200

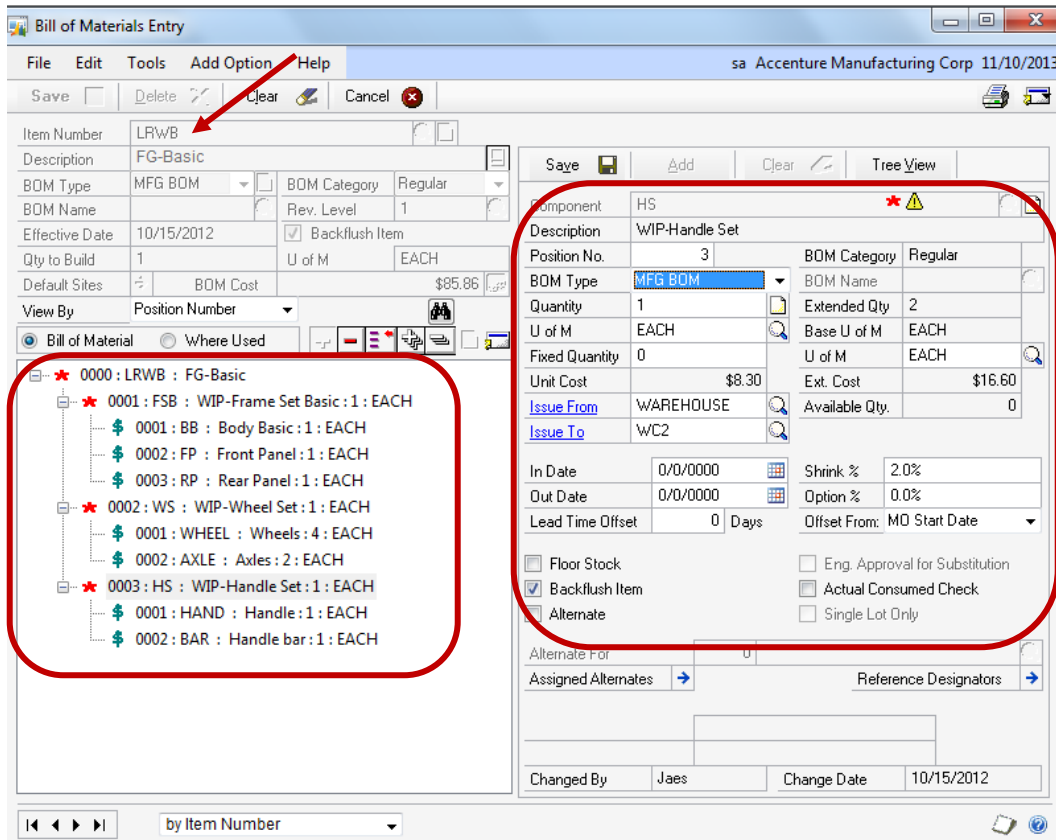
100: Components Preparation [WC1 → WC2]
 200: Final Assembly [WC2 → WC3]

Primary Routing



You can create the BOM of the LRWB items as shown below:

Go to Cards << Manufacturing << Bills of Materials



You need to enter the routing data of the LRWB (Routing 100 and 200) item as shown below:
 Go to Cards << Manufacturing << Routings << Routing Entry

Routing 100

Routing 200

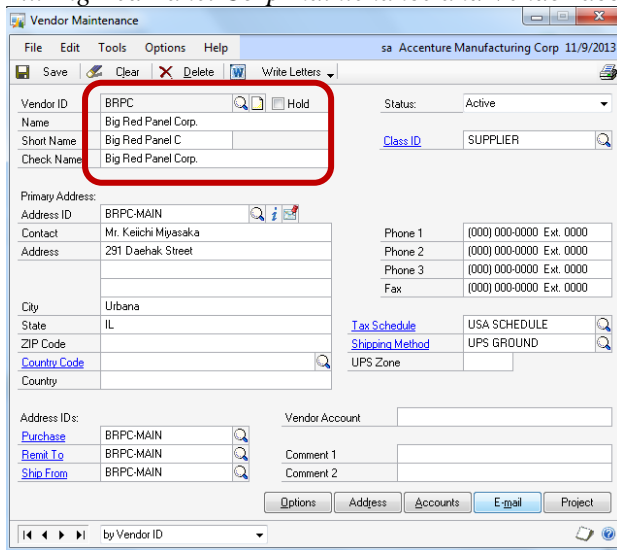
'Work Center Setup' by 'Work center ID' link.

'Operations Setup' by 'Work center Opcode' link.

'Labor Code Definition' by 'Setup Labor Code' link.

'Machine Definition' by 'Machine ID' link.

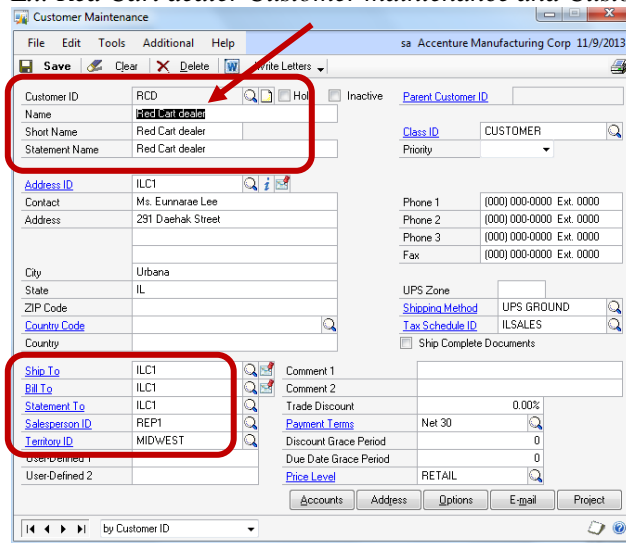
Ex: Big Red Panel Corp maintenance and Vendor account maintenance window.



Customers: There are three customers and each customer should be assigned to ‘CUSTOMER’ class ID

- Customer ID: RCD Name: Red Cart dealer
- Customer ID: WTD Name: Wagon Toy dealer
- Customer ID: MWW Name: Mario World Wagon

Ex: Red Cart dealer Customer maintenance and Customer account maintenance window.



After the required setup processes are completed and databases are constructed, students can now process the ‘Weekly Transaction’ through the following steps:

1. Activation of MPS from forecasting and activate firm manufacturing orders (MO)
2. Creation of manual MO, MO processing for FG
3. Inventory management – Any item shortages for components
4. POP to purchase parts and components for processing WIP MO
5. SOP for customers
6. Account payable to vendors and Account receivable from customers
7. Deposit / Payment [Bank transaction]

Students can process the following ‘Monthly Transaction’ at the end of the month:

1. Weekly transaction plus Payroll processing for FT and PT
2. Pay Loan [Principal and Interest] and utilities
3. Check and print monthly financial transaction statement and Monthly trial balance

At the end of the semester, students are required to process the ‘Year-end transaction’ to close out the plant:

1. Monthly transaction plus Close-out procedure
2. Reconcile financial data and Pay off loans
3. Check Accounts receivables / Accounts payables balance
4. Consolidate periods, ABC Analysis, Inventory clearance
5. Year-end closing process for the Payroll
6. Payment of tax to IRS and W-2 form

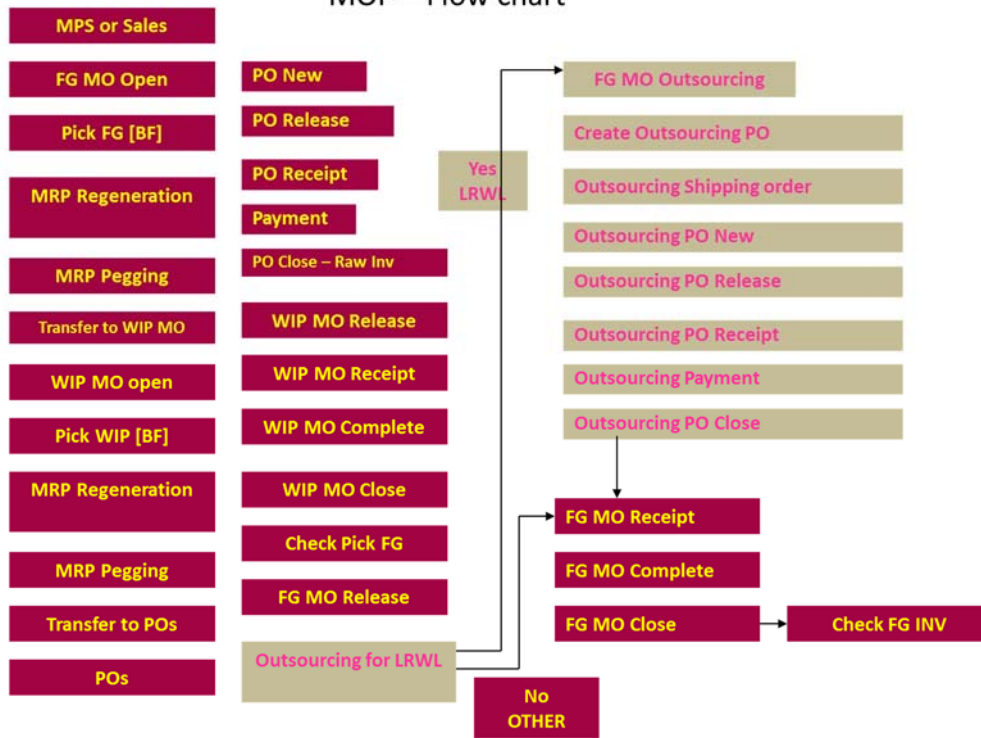
Example: Weekly Transaction Activities

1. **Create and activate** the forecast for all three models of wagons.
2. **Create the MPS.**
3. **Activate the MPS for November 4** for all three Wagon models.
4. Complete the production of these manufacturing orders.
 - *For LRWB or LRWD Model:* No outsourcing service is required for these models.
 - *For LRWL Model:* Make sure outsourcing service is completed for this model.
5. **Check your inventory** to ensure enough inventories for following sales.
6. Process the following regular sales transactions for the ‘Red Cart’ customer.

Red Cart			
Model	LRWB	LRWD	LRWL
Price Level	Retail	Clear	Retail
U of M	Each	Each	Each
Qty Ordered	40	30	10
Unit Price	\$128.79	\$147.65	\$257.84

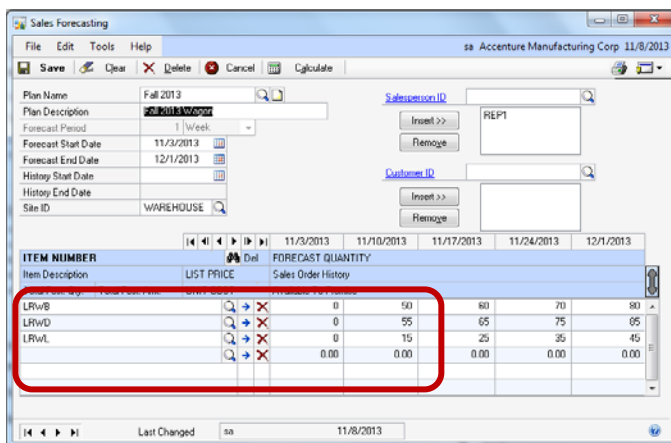
7. During purchasing transactions process from four vendors to procure parts requirement, make sure to include *freight [10% of the ‘Subtotal’ amount]* for all purchases for all items.
8. Students can follow the MOP processing flow chart as shown below:

MOP – Flow chart



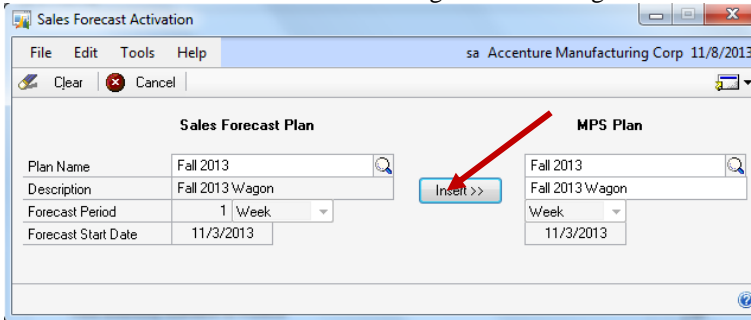
Create the sales forecast:

1. Go to Transactions >> Manufacturing >> Forecasting >> Sales Forecasting.
2. Open the Sales Forecasting window.
3. Enter a plan name and a brief description of the plan.
4. Enter the number of periods for the forecast.
5. Select a unit of time from the list.
6. Enter "Warehouse" for Issue to.
7. Select for the Sales Person ID and click 'Insert.'
8. In the first blank line in the scrolling window, select [LRWB, LRWD, and LRWL] by using the lookup icon as items in the forecast.
9. Enter the forecast quantities for each item .



Activate a sales forecast:

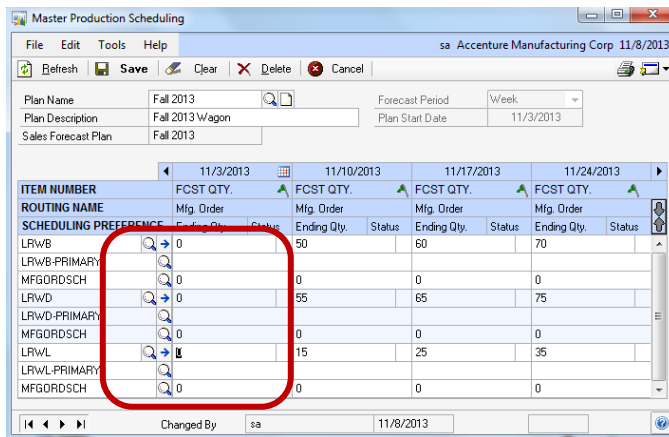
1. Go to Transactions >> Manufacturing >> Forecasting >> SF Activation.



2. In 'Plan Name' select the sales forecast plan name by using lookup icon.
3. Click Insert to transfer the sales forecast plan to the MPS forecast plan.

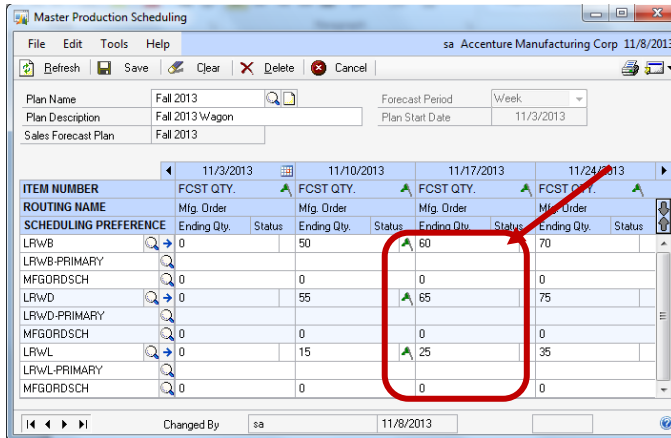
Create a master production scheduling plan:

1. Go to Transactions >> Manufacturing >> Forecasting >> MPS.
2. Open the Master Production Scheduling window and select the forecast plan by using the lookup icon.
3. In the MPS, make sure you have all forecast items listed and all default routing and scheduling preferences are listed for each item.
4. Select sites for 'Draw Inventory from site' [Warehouse] and 'Post finished goods to' [Warehouse]. The default sites will come from the scheduling preference you selected.
5. Accept the default BOM Type for each item [MFG BOM].
6. When you've finished, choose save and close the master production scheduling window.

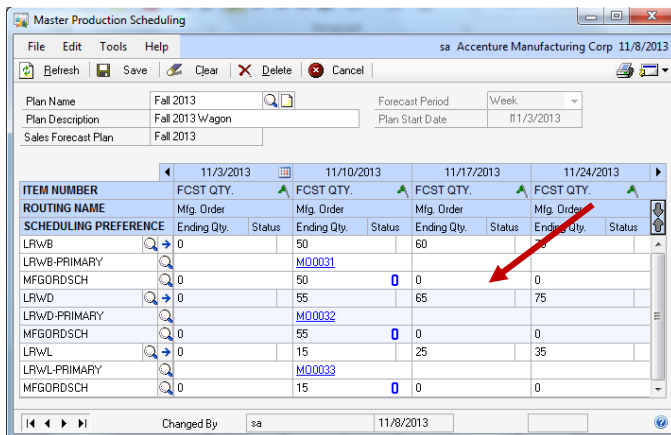


Create Manufacturing Order from MPS:

1. At the MPS, click the cell next to 'FCST QTY.'
2. If a manufacturing order can be created for that plan bucket, a green flag appears as shown below:



3. Click Save.
4. The MPS will convert the forecast to a MO (Manufacturing Order) for each flag and the MPS will be closed. Go back to the Master Production Scheduling window, select an MPS plan again.
5. Now, MOs [M031, M032, M033] will be listed for each item.
6. A blue O means that the manufacturing order has a status of 'Open.'



Students can open Manufacturing Order directly from the MO entry window to schedule production and to build the pick list:

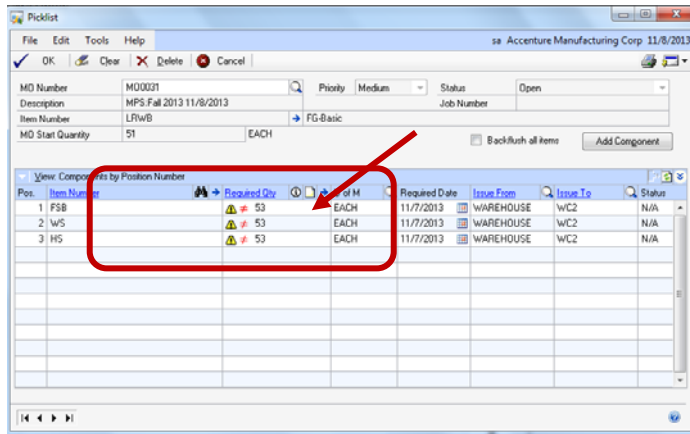
Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry

By using the lookup icon at the MO number, students can see three MOs are created with 'Open' status.

MO Number	Item Number	Item Description	Order Status	Order Priority
M00031	LRWB		Open	
M00032	LRWD		Open	
M00033	LRWL		Open	

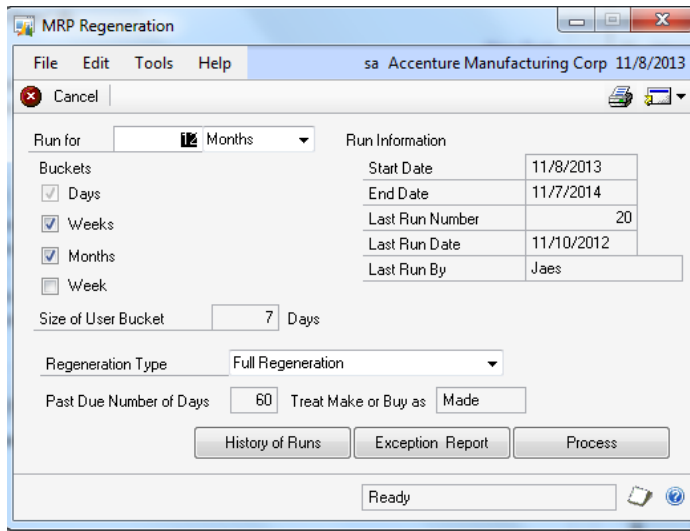
Once the MOs are created, students need to check parts availability / shortages, and back flushed for all items. To do that, students need to open the Pick list window.

1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Picklist
2. Are there any problems in any raw material availability?
3. If you see a yellow triangular mark under the 'Required Qty' column, it means that you have shortage for that item so that item must be either produced or purchased.



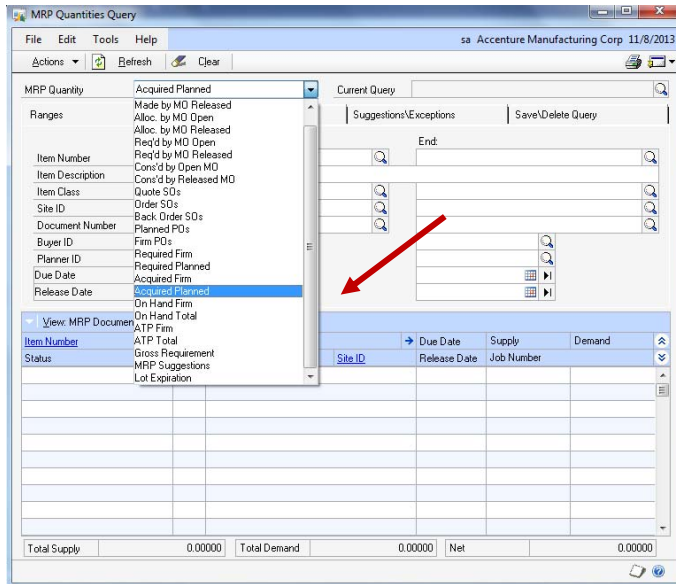
To create MMO and MPO for three MOs, students need to regenerate the MRP. For this task, they will need to first set up MRP Regeneration:

1. Go to Transactions >> Manufacturing >> MRP >> Regeneration.
2. Open the MRP Regeneration window.
3. In the Run for field, specify how far into the future MRP information should be calculated [12 months]
4. Choose buckets to determine how MRP information will be displayed.
5. Mark 'Days, Weeks, and Months'. The more options you mark will lengthen the time of the MRP process.
6. From the Regeneration Type list, select a type of MRP process [Full Regeneration].
7. Choose Process to begin the MRP regeneration process.

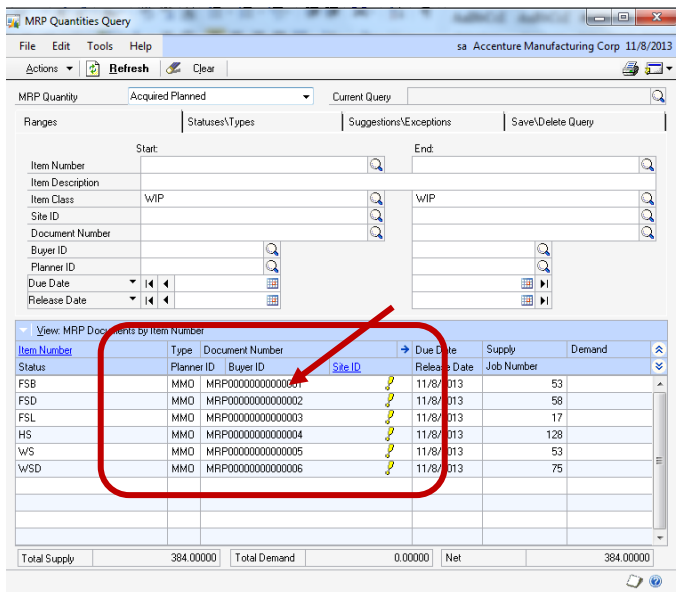


Use the 'Pegging process' to determine required MMOs and MPOs:

1. Go to Inquiry >> Manufacturing >> MRP >> Pegging inquiry.
2. In this process, students need to identify all required WIP components and all WIP MMOs [MRP Planned Manufacturing Order] in this pegging window.
3. Or, students also can check the MMOs by using MRP Quantities Query window.
4. Go to Inquiry >> Manufacturing >> MRP >> Quantities Query.
5. Choose [Acquired Planned] at the 'MRP Quantity' by using the drop down box.



6. Click the Ranges tab and select the ranges you want to include in your query.
7. At the Item Class, select the WIP for Start and End. Click 'Refresh'. Then, all MMOs will be populated as shown below:



If you click the one of the MMOs, the MRP planned orders window will open.

1. If you're working with an MRP-planned manufacturing order [MMO] from the WIP or FGOOD item class, click Transfer to MO button.
2. The Manufacturing Order Entry window will open.

All Order information, including the MO description, quantity, and due date will be transferred to a manufacturing order. If it is needed, students can make changes to the order, schedule the order, or build a picklist before saving it.

1. At the Manufacturing Order Entry window, click the "Schedule MO" button.
2. If the status of the manufacturing order is Open, the order will automatically be scheduled, and its picklist will be built.
3. Make sure a check mark has been marked for 'Order scheduled' and 'Picklist built.'
4. Save the order and close.
5. Repeat the above transfer process for all other WIP items with shortages in the pegging window.

Once transfer process for all MMOs are completed and created WIP MOs successfully, students will see a green flag for each MMO. Close the MRP Quantities Query window.

MRP Quantities Query

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MRP Quantity: Acquired Planned Current Query

Ranges: Start End

Item Number Item Description Item Class Site ID Document Number Buyer ID Planner ID Due Date Release Date

View: MRP Documents by Item Number

Item Number	Type	Document Number	Site ID	Release Date	Supply	Demand
FSB	MMO	MRP00000000000001		11/8/2013	53	
FSD	MMO	MRP00000000000002		11/8/2013	58	
FSL	MMO	MRP00000000000003		11/8/2013	17	
HS	MMO	MRP00000000000004		11/8/2013	128	
WS	MMO	MRP00000000000005		11/8/2013	53	
WSD	MMO	MRP00000000000006		11/8/2013	75	

Total Supply: 384.00000 Total Demand: 0.00000 Net: 384.00000

Students can open WIP Manufacturing Order directly from the MO entry window to check the MO number, the production schedule, and to build the pick list:
Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry.

Manufacturing Order Lookup

File Edit Tools Help sa Accenture Manufacturing Corp 11/8/2013

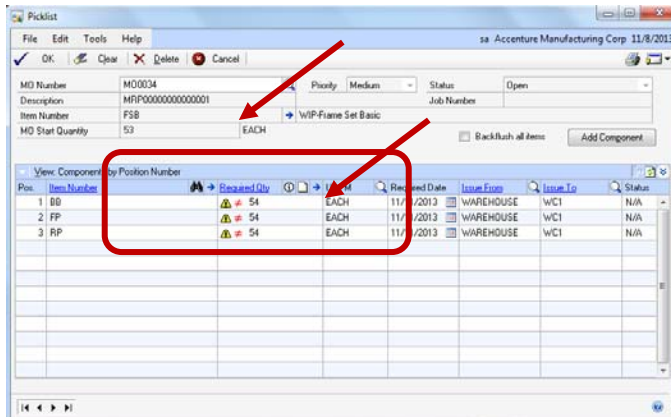
by MO Number MO Number

MO Number	Item Number	Order Status
MD0031	LRWB	Open
MD0032	LRWD	Open
MD0033	LRWL	Open
MD0034	FSB	Open
MD0035	FSD	Open
MD0036	FSL	Open
MD0037	HS	Open
MD0038	WS	Open
MD0039	WSD	Open

All All Redisplay Select Cancel

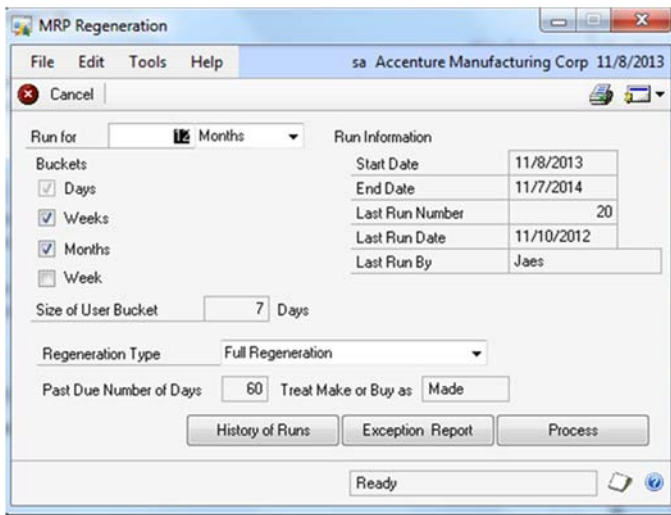
Check the Picklist for WIP MO

1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Picklist.
2. Now, students need to check part or components availability for all WIP MOs that they just transferred.
3. Make sure to select WIP item MO (FSB, FSL, FSD, HS, WS and WSD) one by one by using the lookup icon.
4. Open the Picklist window to check raw material shortages for WIP MOs.
5. If there are some shortages in several raw materials, you need to purchase these items before WIP MOs can be processed.
6. To purchase these shortages, you need to regenerate the MRP to plan purchases.



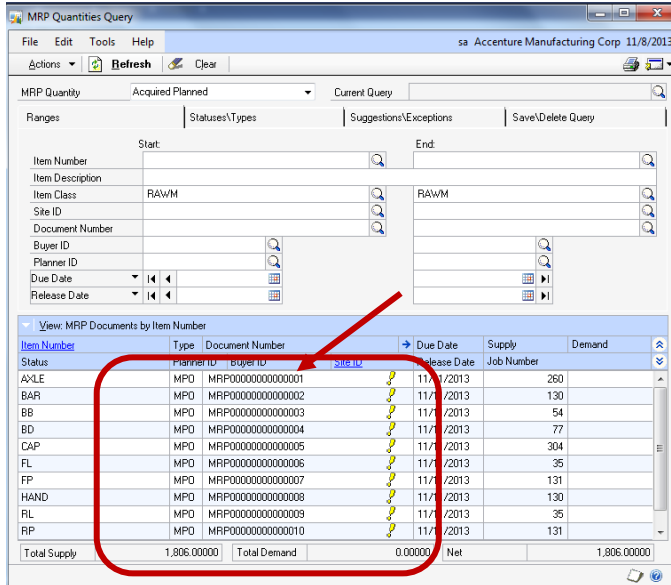
To regenerate MRP to calculate the quantity/time of the components that students need to purchase to produce all WIP MOs:

1. Go to Transactions >> Manufacturing >> MRP >> Regeneration.
2. Click 'Process'.
3. The regeneration process will create Planned Order Releases for all raw materials in the pegging window.
4. Close the MRP regeneration status window and MRP Regeneration window.

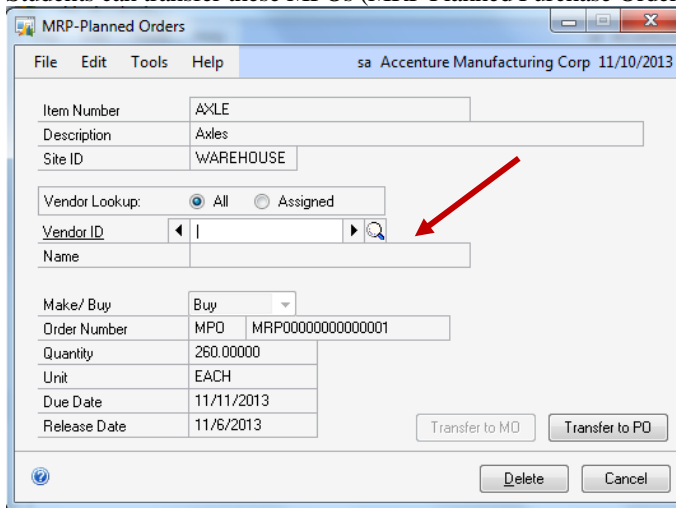


To open the MRP Quantities Query window for MPOs:

1. Go to Inquiry >> Manufacturing >> MRP >> Quantities Query.
2. Choose [Acquired Planned] at the 'MRP Quantity' by using the drop down box.
3. Click the Ranges tab and select the ranges you want to include in your query [Start: APR End: WSD].
4. Accept the default selections at the Statuses/Types tab.
5. Click the 'Refresh' button at the menu. The information displayed will be from the date of the last MRP regeneration.
6. All MPOs and MOPs will be displayed in the MRP Quantities Query window.
7. All MPOs for the following wagon components as shown below must be transferred to POs [Purchase Orders].

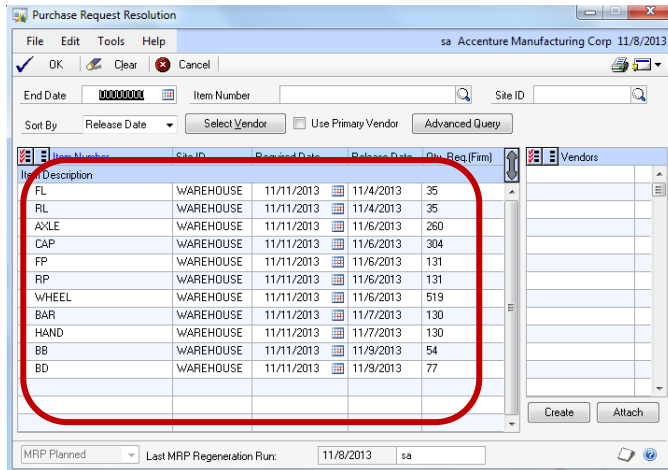


Students can transfer these MPOs (MRP Planned Purchase Order) to purchase order by clicking each item one by one.

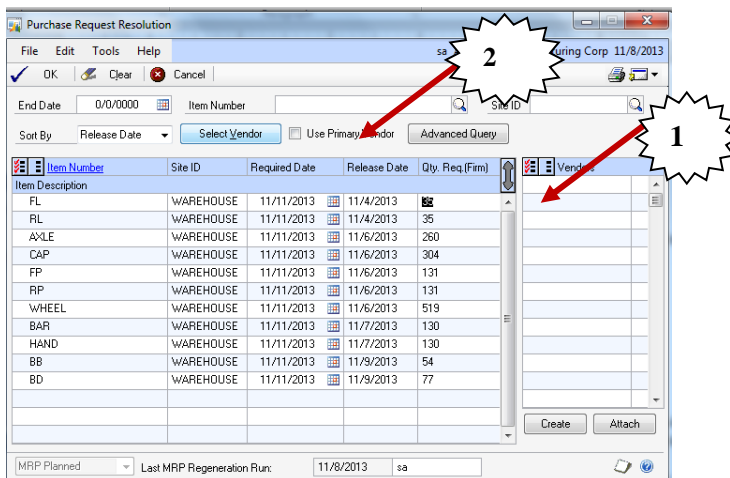


To avoid any tedious transferring activities, students can transfer all MPOs to POs per each vendor by using ‘Purchase Request Resolution’:

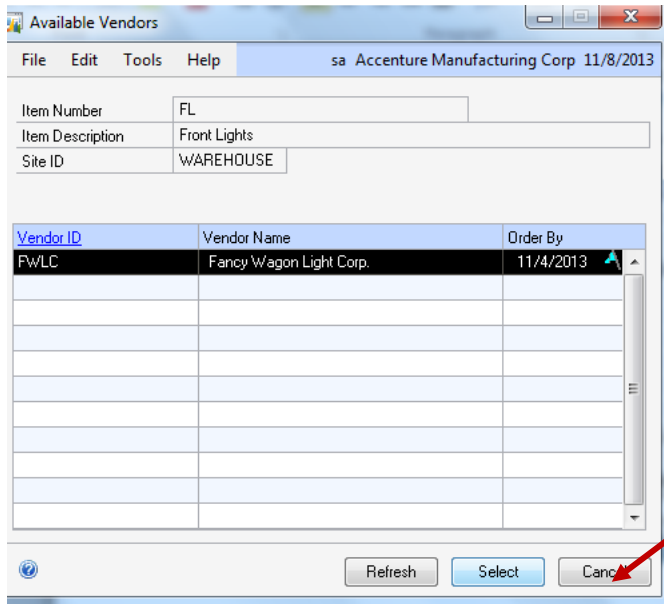
1. To create a purchase orders for a shortage -Go to Transaction >> Purchasing >> Request resolution.



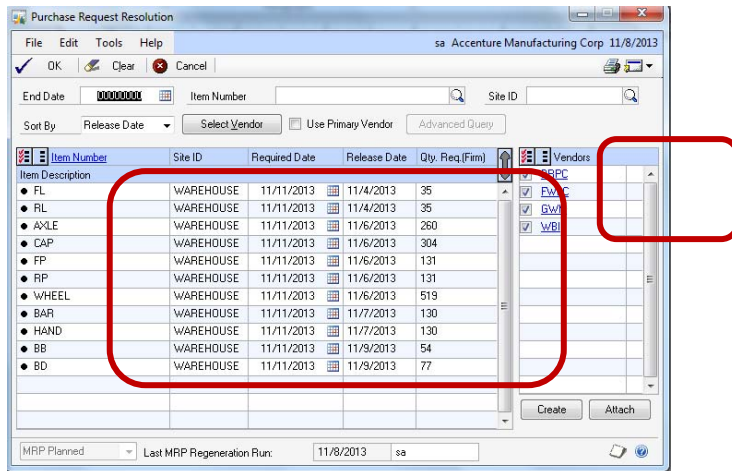
2. Once the “Purchase Request Resolution” window opens, click the cell under the ‘Qty. Req (Firm)’ column from the top.
3. Once the item is highlighted, click the ‘Select Vendor’ button.



4. The ‘Available Vendor’ window will open.
5. Click ‘Select.’
6. Click ‘Yes’ to the popup of ‘This vendor’s typical lead time is too long to meet the deadline for arrival of this child part. Do you still want to use this vendor?’

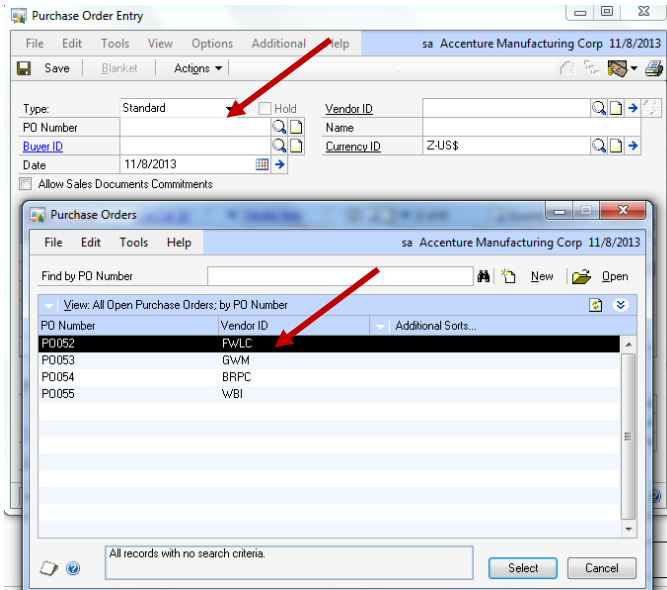


7. Back to the “Purchase Request Resolution” window, ensure that the item number is marked with a black dot at the left side of the table and the primary vendor ID check box is marked at the right side of the table.
8. Repeat the above steps to ensure all shortage items have black dots and all vendor ID check box are marked.
9. Choose Create. All check marks of all vendor ID check box should have disappeared.
10. Choose OK to save your work and to reserve the purchase order number. No purchase order will be created until you choose the OK button at the top left side of the window.

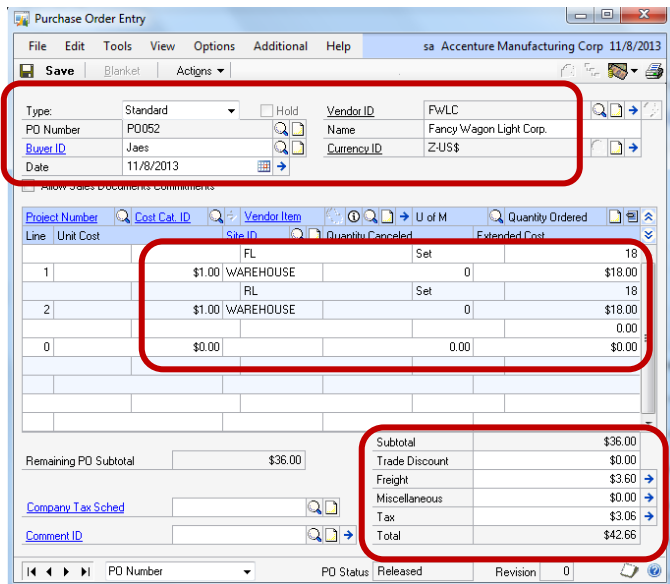


- Go back to the PO entry window and enter the freight amount to each PO.
Go to Transactions >> Purchasing >> Purchase Order Entry
- By using the lookup icon at the ‘PO number’ field, locate PO numbers that you wish to release.
- There should be 4 POs as shown below:

Display PO 52 ~ PO 55



PO for Fancy Wagon Lights Corp:



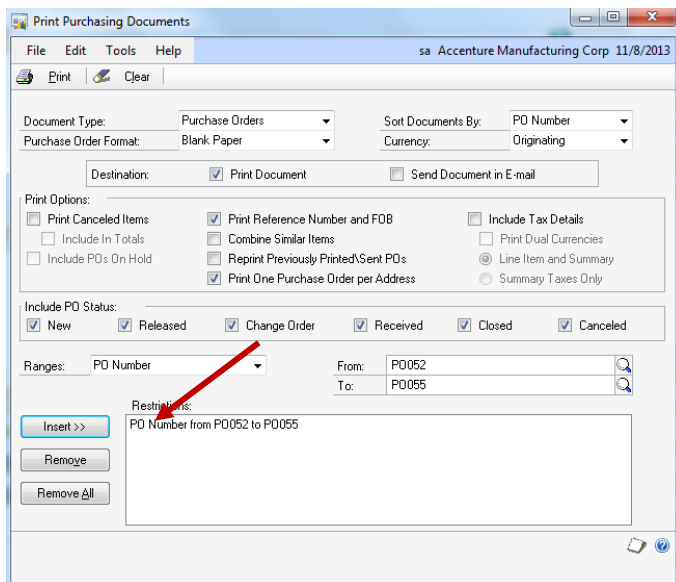
Each PO must be processed by using the flow chart shown below:

POP – Flow chart



Instead of releasing each PO one by one, students can use ‘Mass release’ option to release all POs once.

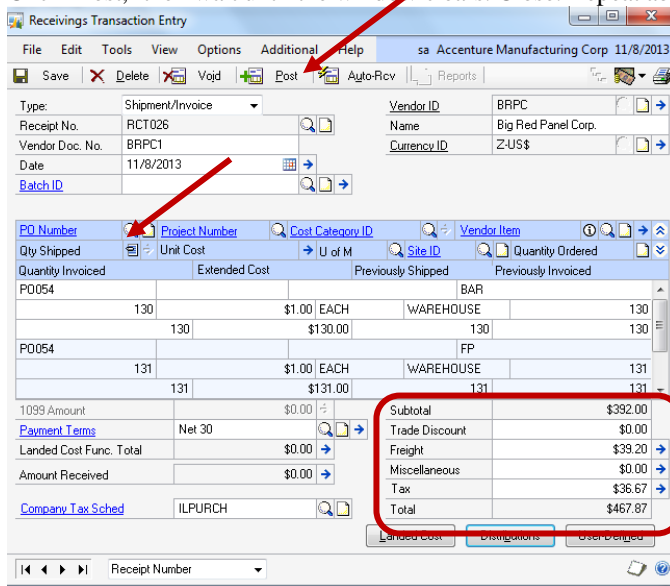
1. Go to Transactions >> Purchasing >> Print Purchase Documents.
2. Select the POs that need to be released by using ‘From’ and ‘To’ and click ‘Insert.’
3. Click ‘Print.’ All POs that were part of the release will print out the actual POs as shown below.



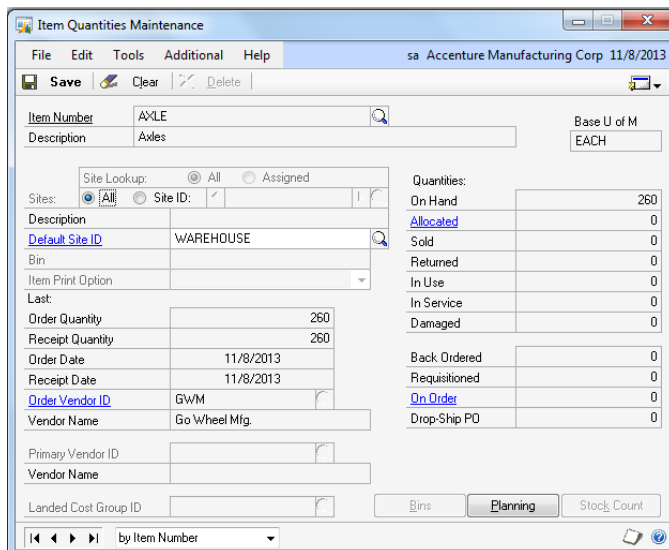
PO Receive shipment and issue invoice:

1. Go to Transactions >> Purchasing >> Receiving Transaction Entry.
2. Select ‘Shipment/Invoice’ as the document type for the transaction.
3. Click the ‘Receipt No’ field to generate default receipt number.
4. Enter a vendor document number. Enter a receipt date and select a vendor name by using the lookup icon.
5. Enter or select a currency ID [Z-US\$].
6. By using the lookup icon at the PO number[s], select the POs that you’re receiving a shipment/invoice for.

- Click 'Post,' then wait until the window clears. Close. Repeat above steps for all other vendors.

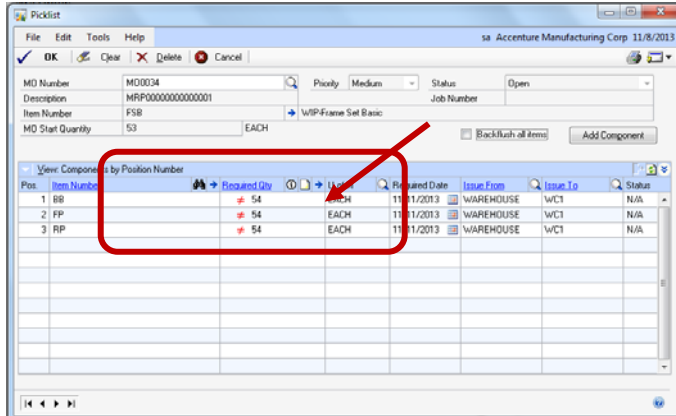


Once all POs completed receiving shipment and issuing invoice processes, students can check inventory at the warehouse to ensure there are no shortages in parts for WIP production: Go to Cards<<Inventory<<Quantities/Sites.



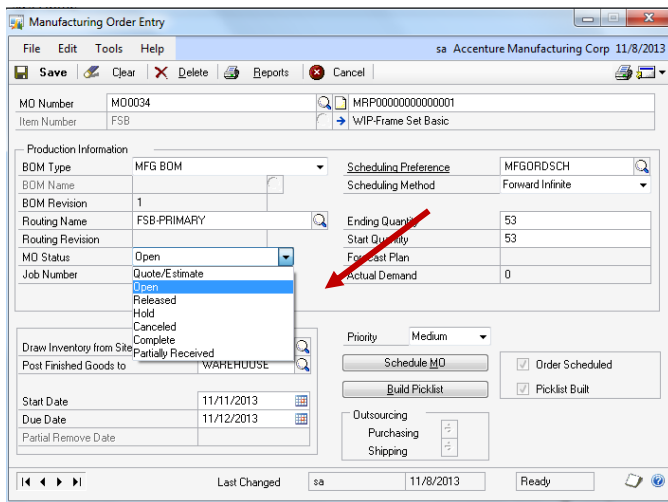
Check the Picklist for WIP MO:

- Go to Transactions >> Manufacturing >> Manufacturing Orders >> Picklist
- Now, students need to check part or components availability for all WIP MOs that they just transferred.
- Make sure to select WIP item MO (FSB, FSL, FSD, HS, WS and WSD) one by one by using the lookup icon.
- Open the Picklist window to check the raw material shortages for WIP MOs.
- Because there are no shortages for all WIP MOs, students now can release all WIP MOs.



To release all WIP MOs:

1. Go to Transactions >>> Manufacturing >> Manufacturing Orders >> Entry.
2. Select the WIP MO one by one by using the lookup icon of the 'MO Number' field.
3. Make sure to select your item ONLY (FSB, FSL, FSD, HS, WS and WSD).
4. Change all WIP MO statuses from 'Open' to 'Released.'



5. Choose Save. Do this one WIP MO at a time.

Manufacturing Order Entry

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Save Clear Delete Reports Cancel

MRP00000000000001
WIP-Frame Set Basic

Production Information

BOM Type: MFG BOM
BOM Name: FSB-PRIMARY
BOM Revision: 1
Routing Name: FSB-PRIMARY
Routing Revision: [blank]
MO Status: Released
Job Number: [blank]

Scheduling Preference: MFGORDSCH
Scheduling Method: Forward Infinite

Ending Quantity: 53
Start Quantity: 53
Forecast Plan: [blank]
Actual Demand: 0

Draw Inventory from Site: WAREHOUSE
Post Finished Goods to: WAREHOUSE

Start Date: 11/11/2013
Due Date: 11/12/2013
Partial Remove Date: [blank]

Priority: Medium

Schedule MO [checked] Order Scheduled [checked]
Build Picklist [checked] Picklist Built [checked]

Outsourcing: Purchasing [blank], Shipping [blank]

Last Changed: sa 11/8/2013 Ready

6. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry.
7. Click lookup icon at the MO Number field to ensure all WIP MOs are in 'Released' status.

Manufacturing Order Lookup

File Edit Tools Help sa Accenture Manufacturing Corp 11/8/2013

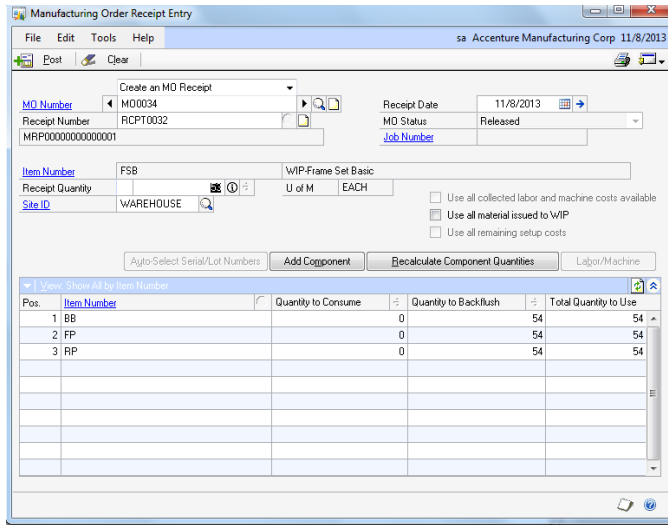
by MO Number MO Number

MO Number	Item Number	Order Status	Order Priority
MO0031	LRWB	Open	
MO0032	LRWD	Open	
MO0033	LRWB	Open	
MO0034	FSB	Released	
MO0035	FSD	Released	
MO0036	FSL	Released	
MO0037	HS	Released	
MO0038	WS	Released	
MO0039	WSD	Released	

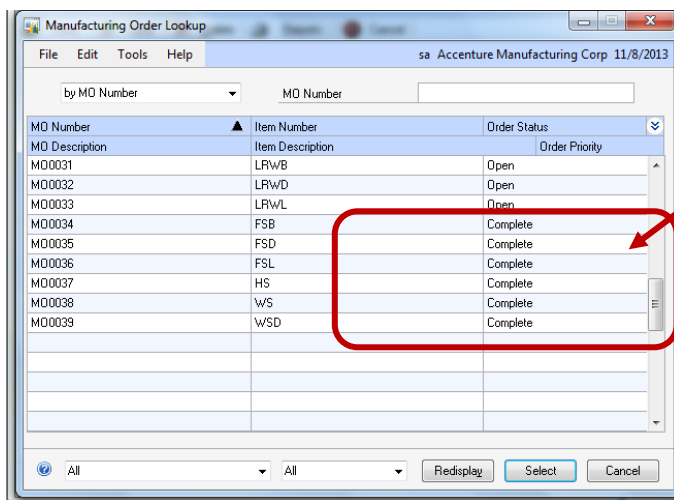
All All Redisplay Select Cancel

To receive all WIP MOs:

1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> MO Receipt Entry.
2. Select a WIP MO [not FGOOD MOs] with Released status in the 'MO Number field.'
3. Make sure to select each item one by one ONLY (FSB, FSL, FSD, HS, WS and WSD) by using the lookup icon.
4. Accept the default receipt date and default receipt number.
5. Accept the default receipt quantity for the finished item. You shouldn't have to change the receipt quantity.
6. Accept the default site [WAREHOUSE]. The site is the one to which the finished goods will be added.
7. Accept the default Quantity to Consume and the default Quantity to Backflush for each of the components.
8. Choose Post. Wait until all inventory transactions are completed.

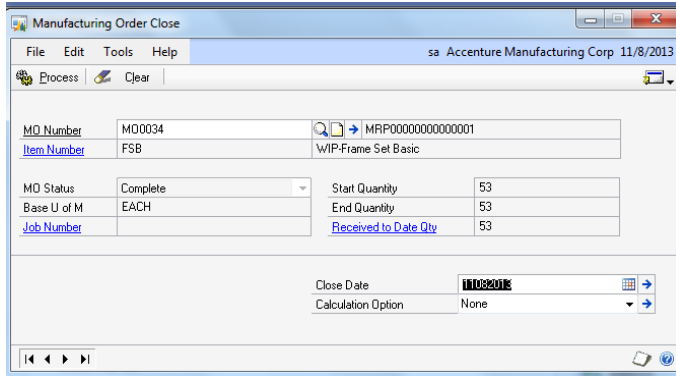


9. When processing is complete, all MOs order statuses will be changed from 'Released' to 'Complete' in Manufacturing Order lookup window.
10. Close the window.
11. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry.
12. Click lookup icon at the MO Number field to ensure all WIP MOs are in 'Complete' status.

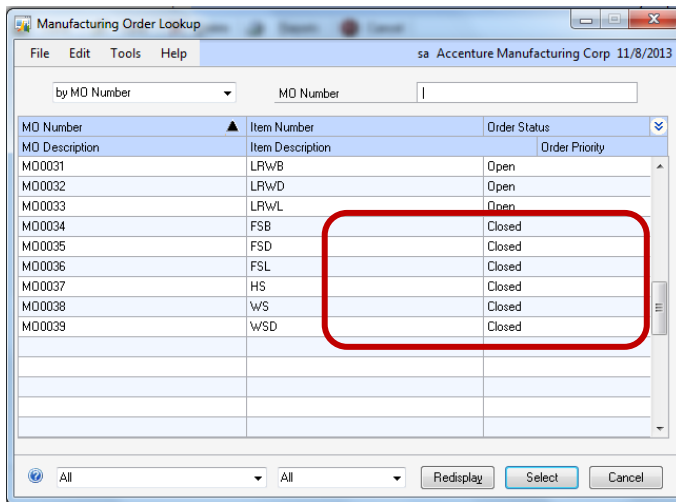


To close all WIP MOs:

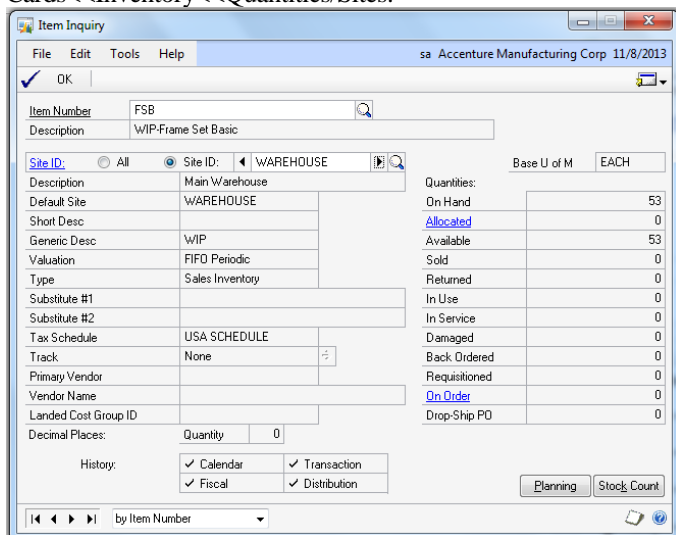
1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> MO Close.
2. Select a WIP MO with 'Complete' status by using lookup icon at the MO number field.
3. Make sure to select your item ONLY (FSB, FSL, FSD, HS, WS and WSD) one by one by using the lookup icon.
4. If everything is ok, click Process. When you've finished, close the window.



5. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry.
6. Click lookup icon at the MO Number field to ensure all WIP MOs are in 'Closed' status.

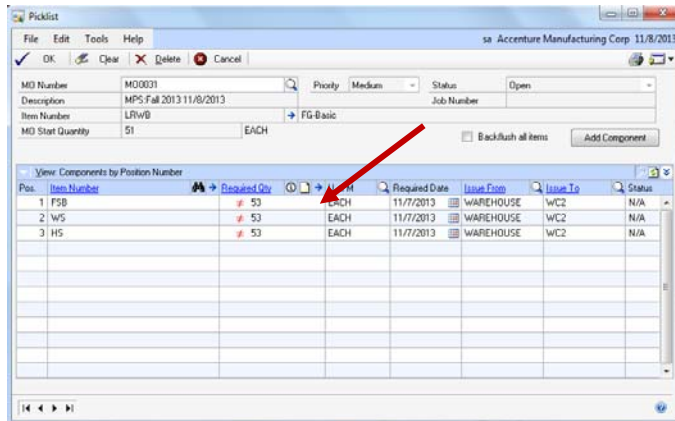


Once all WIP MOs are completed with 'Closed' status, students can check inventory at the warehouse to ensure there are no shortages in parts for FGOOD production: Go to Cards<<Inventory<<Quantities/Sites.



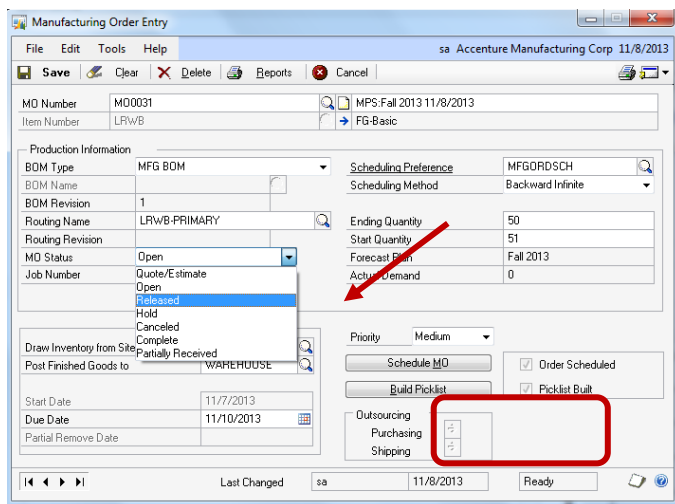
Check Picklist for all FGOOD MOs:

1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Picklist
2. Open Picklist to check the availability of all WIP components to complete FGOOD MOs.
3. If all FGOOD MOs have the required WIP items, you can close the picklist.
4. If you still have WIP item shortages for any of the FGOOD MO, students need to repeat pegging process to manufacture enough WIP items.



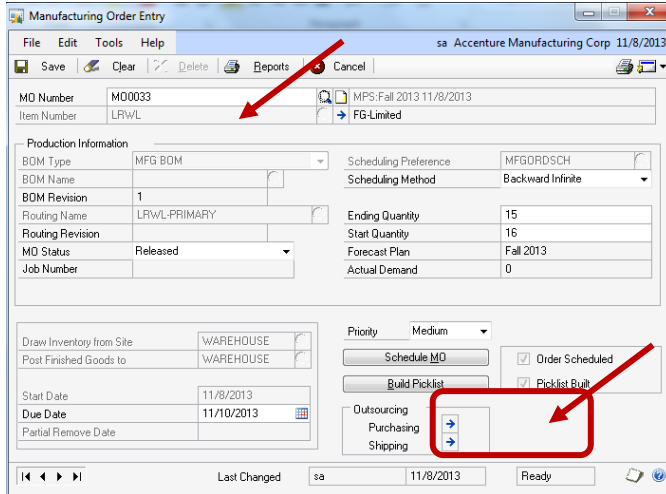
To release FGOOD MOs:

- Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry.
- Select the Wagon MO (LRWB, LRWD and LRWL) one by one by using the lookup icon of the 'MO Number' field.
- Change the order status of all FGOOD MOs from 'Open' to 'Released.'
- Save and do this one MO at a time.

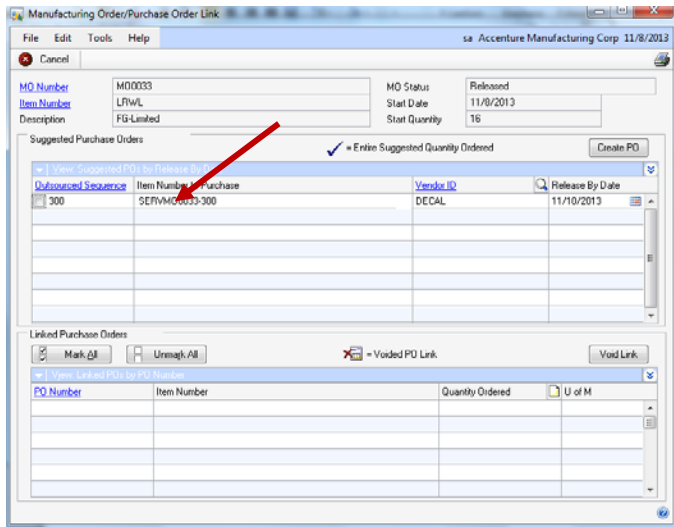


If students are processing LRWL that requires an outsourcing process, the following outsourcing sequence should be followed:

1. Create PO for outsourcing.
2. Go to Transactions >> Manufacturing >> Manufacturing Orders >> Entry.
3. Select the MOs for LRWL model by using lookup icon in 'MO Number.'
4. Make sure the order's MO status shows as 'Released.'
5. Click the blue arrow button next to Purchasing in the Outsourcing section.



6. Students will be in the 'Manufacturing Order / Purchase Order link' window.
7. Review the MO Number and Item Number for accuracy.



8. Mark the sequence 300 under the 'Outsourced sequence' column and click "Create PO" button on right hand side of the window.
9. Click "Continue" if you get a popup of: "The suggested PO has a release by date..."
10. The Purchase Order Entry window appears as shown below:

Manufacturing Order/Purchase Order Link

sa Accenture Manufacturing Corp 11/8/2013

Cancel

MO Number: MO0033
 Item Number: LRWL
 Description: FG-Limited

MO Status: Released
 Start Date: 11/8/2013
 Start Quantity: 16

Suggested Purchase Orders = Entire Suggested Quantity Ordered

Item Number to Purchase	Vendor ID	Release By Date
300	DECAL	11/10/2013

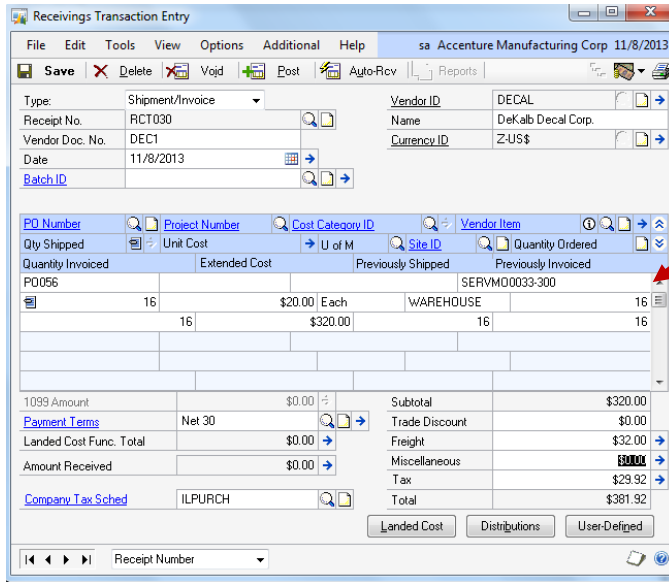
Linked Purchase Orders = Voided PO Link

PO Number	Item Number	Quantity Ordered	U of M
PO056	SERVM00033-300	16	Each

11. Number of the vendor item you're purchasing. [SERV****], U of M = Each
12. Accept the default item quantity and check the following data.
13. Default site = Warehouse Shipping method = UPS ground Site tax schedule ID = ILPURCH.
14. Choose Save and close the PO entry window. Back to the MO/PO link window.
15. Now you will see the PO number in the bottom half of the MO/PO link window.
16. Close the MO/PO link window. [DO NOT CLOSE the MO Entry window yet]
17. Print the PO and check the print out for accuracy.

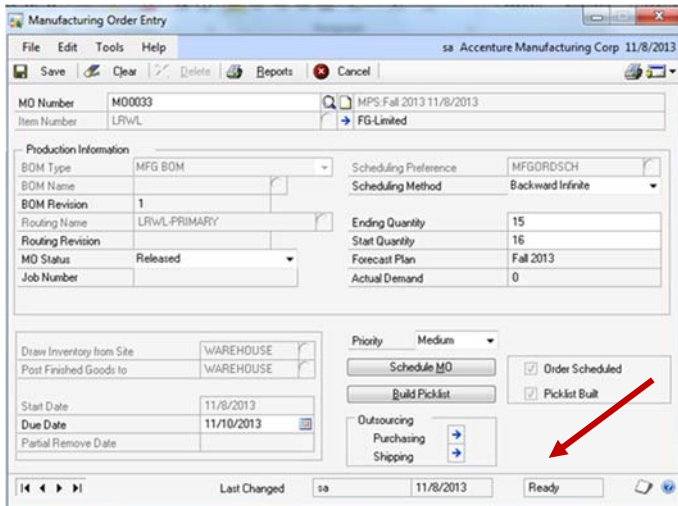
PO Receive outsourcing service and issue invoice:

1. Go to Transactions >> Purchasing >> Receiving Transaction Entry.
2. Select "Shipment/Invoice" as the document type for the transaction.
3. Click the Receipt No field to generate default receipt number.
4. Enter a vendor document number. [Your name initial + any number] You cannot use same one twice.
5. Enter a receipt date. [Today's date] and select a vendor name by using the lookup icon.
6. Enter or select a currency ID. [Z-US\$].
7. By using the lookup icon at the PO number[s] [blue link at the first column, middle window], select the POs which you're receiving a shipment/invoice for. You can receive items from multiple purchase orders from the same vendor by entering or selecting a different purchase order number in a new row.
8. Click Post and then wait until window clears. Close.

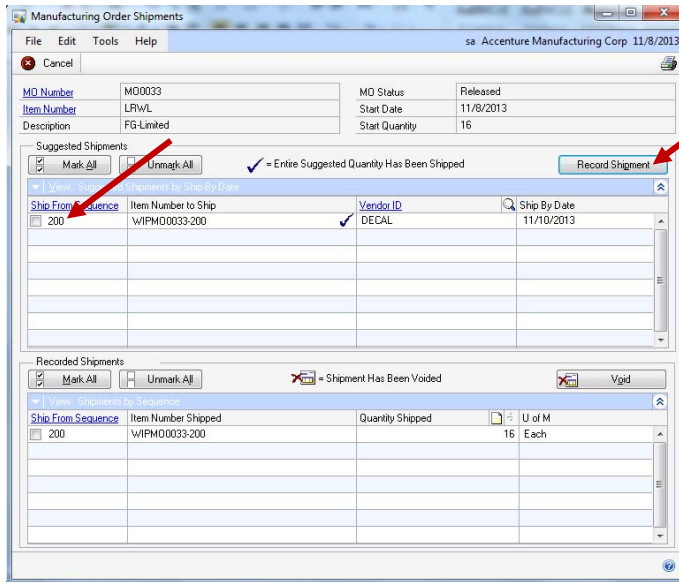


Back to the MO of LRWL, students now need to process their Shipping order for outsourcing. This process allows a company to ship WIP to the outsourcing vendor for further processing.

1. At the manufacturing order entry window for the LRWL model, click the blue arrow button next to Shipping in the Outsourcing section.



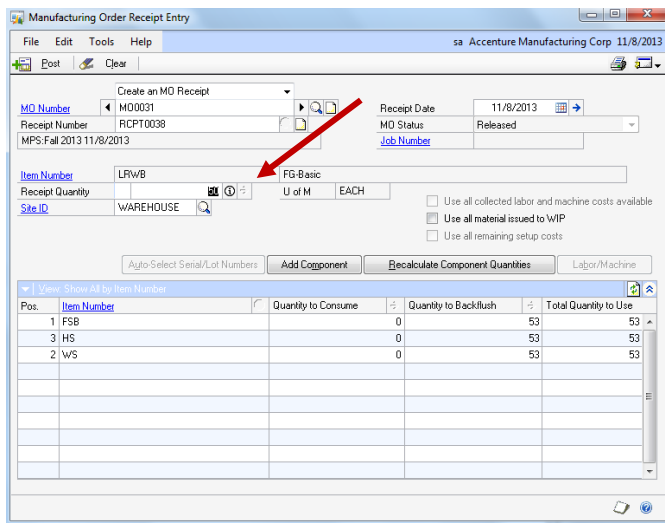
2. You will be in the Manufacturing order shipments window.
3. Mark the sequence 200 under the 'Shipment from sequence' column.
4. Click the "Record Shipment" button on right hand side of the window.
5. Close the window.



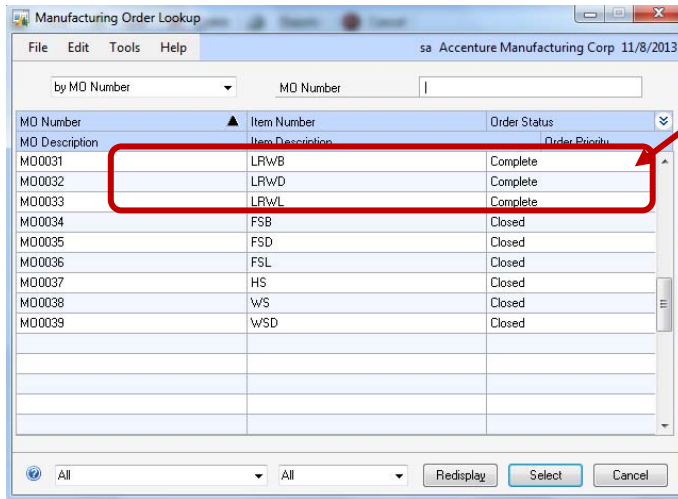
6. Print the manufacturing Shipping report and check the screen print out for accuracy.

FGOOD MO Receipt entry:

1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> MO Receipt Entry.
2. Select a manufacturing order with Released status.
3. Make sure to select the MO that produces your items ONLY (LRWB and LRWD) by using the lookup icon. Do this one by one.
4. Accept the default receipt date and receipt quantity for the finished item.
5. Accept the default site [WAREHOUSE]. The site is the one to which the finished goods will be added.
6. Choose Post.

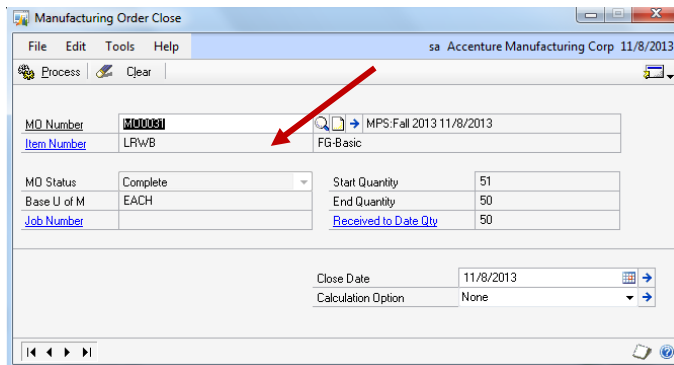


7. When processing is complete, all FGOOD MOs order statuses will be changed from “Released” to “Complete” in Manufacturing Order lookup window.
8. Close the window.

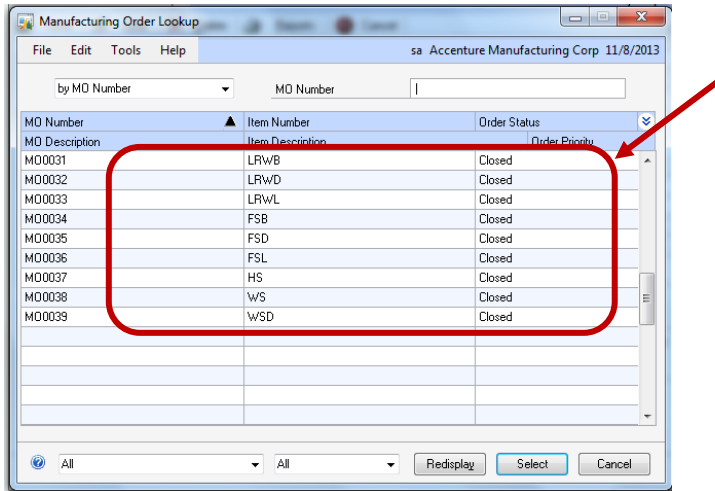


To close FGOOD MO:

1. Go to Transactions >> Manufacturing >> Manufacturing Orders >> MO Close.
2. Select a manufacturing order with 'Complete' status by using the lookup icon.
3. The manufacturing order you select can have no pending component transactions, and its status must be Released, Partially Received, or Complete.
4. If everything is ok, click Process. When you've finished, close the window.

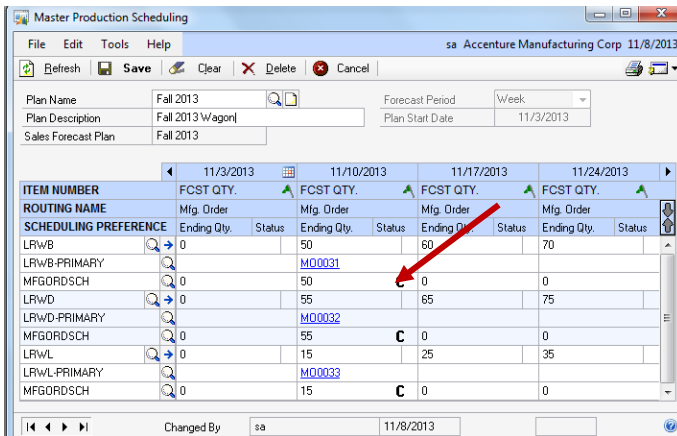


5. When closing processing is complete, all FGOOD MOs order statuses will be changed from "Complete" to "Closed" in Manufacturing Order lookup window.
6. Close the window.



Students can check the master production scheduling plan to ensure all three MOs are completed with a ‘Closed’ status.

1. Go to Transactions >> Manufacturing >> Forecasting >> MPS.
2. Open the Master Production Scheduling window.



Students also can check availability of wagon inventory at the warehouse before committing any sales to customers: Go to Cards<<Inventory<<Quantities/Sites.

Note to Instructors

Each week, instructor can expand coverage of the weekly exercise by adding other process activities from Human Resources, Accounting, and Finance departments. Although this case handles a limited number of products, vendors, and customers, students can learn what processes are necessary for completion and how these processes are integrated into the business firm. Because of the integrated design of this curriculum, it would be suitable to teach this in a capstone course at the undergraduate senior level for Operations Management majors, or at the beginning of the MBA curriculum. Lastly, this Dynamics GP course can be used in other areas within the College of Business if the instructor chooses to teach only the marketing, accounting, or finance modules.

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