# TIM-125/TIM-225, MOT II: Homework 6

# Safety Inventory

**Planning and Structured Problem Solving**: keep up the good habits you’ve developed!

**Readings:** (Please do readings in parallel with the homework problems): SCM, 4th Edition, Chapter 11 (Managing Uncertainties in a Supply Chain: Safety Inventory), Chapter 4 (Designing Distribution Networks…), Chapter 5 (Network Design in the SC); Chapter 13 (Transportation in a SC), and Chapter 14 (Sourcing).

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**Homework Problems** (**due Thursday, 28 February, 2019)**

## Quantitative Problems (Chapter 11: Managing Uncertainties in a Supply Chain: Safety Inventory):

1. Exercise 11.2
2. Exercise 11.3
3. Exercise 11.4
4. Exercise 11.5
5. **Case-Study:**

**McMaster-Carr:** Please read the slide presentation byDaniel Lifschitz on SCM at McMaster-Carr, available on the TIM125 website. (Additionally, this company is also discussed in the SCM text in several places.) Then answer the following questions:

* What is McMaster-Carr’s business model and supply chain strategy?
* How does SCM at McMaster-Carr differ from companies like Walmart or Office Depot?
* Explain how “aggregation” is important to the success of McM-C’s supply-chain business model.

1. **(TIM-225 only) Resource Allocation**: Read the “Aggregate Planning in a Supply Chain” chapter (4th Edition, Chapter 8), and summarize the key lessons.

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**Project Phase 4 (due Tuesday 3/5/2019):**

Complete as many of the following tasks as possible :

* Make sure that you complete all the tasks that we agreed upon during our Phases 2, 3 project meetings. “Benchmark” (calibrate/compare/contrast) your SCM approach and implementation against Plantronics (see Problem 6 in HW #5).
* Complete your implementation of cycle and safety inventory for your SC network.
* Two important new SCM drivers that you should now work on, while we are covering the material in class, are Facilities and Transportation Network (see “Readings” above).
* Work on implementing the software (Information) automation for your project using Excel and Visual Basic. For example, create and link demand forecasting module, product cycle and safety inventory modules, transportation module and facilities module.
* Attempt to simulate your product’s supply chain and examine various scenarios using your integrated software.
* Align and integrate your high-level strategies (from Phases 1, 2) with the detailed implementations of each driver.
* Develop the proper SC management guidelines for your team’s product, as well as a simple user’s manual for your software module.
* Project (Design) Review. Meet with the instructor on Tuesday (3/5/2019) to review your work on Phase 4. Each team member should create a one-page write-up of their individual contributions for the project review. This page needs to be included in the final report.
* Note: Final Project Report is due on Thursday, March 14, or Tuesday, March 19, or Thursday, March 21, 2019.