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

# Safety Inventory

--------------------------------------------------------------------------------------------------------------------------------------------

**TIM-125/225 Course website: https://tim125-winter16-01.courses.soe.ucsc.edu/**

--------------------------------------------------------------------------------------------------------------------------------------------

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

**Reading:** (Please do readings in parallel with the homework problems): SCM, 4th Edition, Chapter 4, Chapter 11 (Safety Inventory), Chapter 13 (Transportation), and Chapter 14 (Sourcing).

--------------------------------------------------------------------------------------------------------------------------------------------

**Homework Problems** (**due Thursday, 25 February, 2016)**

## Quantitative Problems (Chapter 11 Safety Inventory):

1. Exercise 11.2
2. Exercise 11.3
3. Exercise 11.4
4. Exercise 11.5

**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.

--------------------------------------------------------------------------------------------------------------------------------------------

**Project Phase 4 (due Tuesday 3/8/2016):**

This phase of your project is due on **Tuesday 3/8/2016**; and should include the following:

* Make sure that you complete all the tasks that we agreed upon during our Phases 3, 4 project meetings. “Benchmark” (calibrate/compare/contrast) your SCM approach and implementation against Plantronics (see Problem 9 in HW #5).
* In addition to cycle and safety inventory, two important new elements (SCM “drivers”) of your project are designing/implementing Facilities and Transportation Network.
* Work on implementing the software (Information) framework for your project using Excel and Visual Basic. For example, create and link demand forecasting, product safety inventory module, and transportation module and facilities modules.
* Simulate your product’s supply chain and examine various scenarios using your integrated software.
* Align and integrate your high-level strategies with the detailed implementations of each driver.
* Develop the proper SC management guidelines for your firm’s products, as well as a user’s manual for your software module.
* **Project (Design) Review**. Meet with the instructor on Tuesday (**3/8/2016**) to review your work on **Phase 4** and **Phase 5** (final phase). Each team member is expected to spend a few minutes clearly explaining her/his “aggregated” contribution to the project over the course of the quarter, in particular, but not limited to, the following issues: high-level objectives of your particular part of the project, your work-plan/work-process; implementation details; results; conclusions; connection to other parts of the project. This explanation will be an important part of your project grade. (Each team member should create a one-page write-up to facilitate her/his explanation during the project review. This page needs to be included in the final report.)
* Note: Final Project Report is due on Thursday, March 10, or Tuesday, March 15, or Thursday, March 17, 2016.