# TIM-125/TIM-225, MOT II: Homework 7

# Facilities, Network, and Transportation Design

**Reading:** (Please do readings in parallel with the homework problems): SCM, 4th Edition, Chapter 4 (Designing Distribution Networks…), Chapter 5 (Network Design in a SC), Chapter 13 (Transportation in a SC) and Chapter 14 (Sourcing Decisions…).

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**Homework Problems:**

Due: **Thursday, 14 March, 2019**

**Qualitative Problems** (do require quantitative reasoning as appropriate)**:**

1. **Transportation in a SC:** D12.2, D13.5
2. **Network Design in a SC**: D5.1, D5.4, D5.6

## Quantitative Problems:

1. **Safety Inventory:** Exercise 11.5 (re-assigned from HW #6)
2. **Safety Inventory (Aggregation):** Exercises 11.7, 11.8
3. **SC Facilities/Network Optimization for SunOil:** Work through the SunOil Case Study in Chapter 5 (4th Edition) using Excel and Solver
4. **Facilities Design for Dry Ice, Inc.:** Exercise 5.2
5. **Transportation for Books-on-Line:** Exercise 13.2 (Books-on-Line)
6. **(TIM-225 only) Aggregate Planning.** (Before starting this problem, read and complete Problem 4 in HW # 6.) Attempt to formulate, and then solve, using Excel Solver, the aggregate planning problem for the “Red Tomato Company”. This problem is developed and solved in the chapter titled “Aggregate Planning in a SC.”

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## Project: SCM Integration and Final Report

* 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.
* Create an outline of the final report, and then compile the final report. The final report should include a table of contents, a 1-2 page meaningful executive summary up-front, an introduction, and a conclusion/lessons learned section at the end. The final report should also include the project activity sheets for all the team meetings on each phase of the project.
* Each team member must create a very specific 1-2 page “write-up” **for the final report** 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 work on 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 the individual’s project grade.
* Final Project Report is due on **Thursday, March 14, or Tuesday, March 19, or Thursday, March 21, 2019.**