# TIM 125/225, MOT II: Homework 4

# Adaptive Forecasting and Cycle Inventory

**Midterm:** will be handed to you in class on **Thursday 7 February, 2019**; completed midterm will be on Canvas at **11:59 PM on** **Monday, 11 February, 2019**.

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**Planning**: As before, create a time-schedule for doing the readings and for working on the problems and project. Submit this schedule with your solutions. Also, track how well you follow your schedule, and make notes obstacles and problems to being “on track”. Please use the SPSP on all quantitative problems.

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**Reading**: SCM Text, 4th Edition, Chapter 10 (Managing Economies of Scale), Sections1-4; Chapter 16 (Information Technology), Sections 1, 2; Chapter 17 (Coordination), Section 1 (Bullwhip Effect); Chapter 11 (Managing Uncertainty in a Supply Chain), Section 1, 2.

**Homework Problems** (**due** **Thursday, 7 February, 2019**). Homework must be turned-in on-time to be eligible for full credit.

**Problem Solving**: Please use your problem-solving template to solve each problem.

**Qualitative Problems:**

1. **Cycle Inventory:** SCM, 4th, D10.1, 10.2, D10.3

## Quantitative Problems:

1. **Tahoe Salt (Chapter 7 continued)** Forecast demand using the: Holt and Winter Adaptive Forecasting methods. Your solutions should match the solutions in the book.
2. **Hot Pizza,** Chapter 7,Exercise 2.
3. **Flower Wholesaler,** Chapter 7, Exercise 3
4. **ABC Corporation:** SCM, Chapter 7, Exercise 4 (Do “Winter’s Method” only.)
5. **Harley Davidson:** SCM, Chapter 10, Exercises 1, 2

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## Project Phase 2 due Tuesday, 5 February, 2019:

The items listed below are intended to serve as a **checklist** of the tasks you should be working and completing in Phase 2 (including any backlog from Phase I).

* During this phase of the project you should be actively working on SC Strategy, **demand forecasting,** and, if possible, inventory management for your product.
* Play the “MIT Beer Game”, and create (customize) a similar game for your own product.
* When estimating historical demand for your product, use (1) the product life-cycle model, (2) the market segmentation analysis (updated) from last quarter, and (3) cash-flow analysis (updated) fromlast quarter.
* The team should also be actively building the software platform or “architecture” (in Excel) to manage the supply chain, in particular the demand-forecasting module. You are expected to build on your **experience** and **expertise** in programming and product design from courses such as CS 12A, CS12B, CS 180/182, TIM 58, and TIM 105 when developing the software product to simulate and manage your supply chain.
* Meet with the instructor on 02/05/2019 to review your work.