

Department of Information and Systems Management  
School of Business and Management  
Hong Kong University of Science and Technology

Seminar Announcement

***Building Enrollments in Management Science Courses by  
Teaching Advanced Excel***

by

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11:00 am – 12:30 pm  
Room 4379, ISMT Conference Room (L17/18)**

~~~~~ All interested are welcome ~~~~~

**Abstract**

One key to making MS/OR courses popular in a business school is to draw students wanting to become Excel power users, as well as students who want to learn management science. Another key is to use numerous financial examples in the class, since finance majors often are the largest group in the business school. The instructor should give numerous optimization and simulation examples (all using Excel as a delivery platform), each of which introduces new Excel features of gradually-increasing complexity.

Some students will think the course is primarily concerned with teaching advanced features of Excel, using management science to illustrate Excel's many features. Other students will think the course is teaching management science, using Excel to illustrate optimization modeling and simulation. In a sense they are both right. In a more important sense, it doesn't matter who's right, since the goal is to gain large enrollments in the course.

I give a detailed example of teaching management science and advanced excel, using Excel's "subtotals" feature to find the correct shipping coefficients for a linear programming transportation model. Given a large list of records of past shipping costs between various origin-destination pairs, I use subtotals to find the average cost of shipping one unit between each different origin-destination pair.

When subtotals are used, Excel automatically calculates subtotal and grand total values from a list and outlines the list so that you can display and hide the detail rows for each subtotal. When rows are hidden, I show how to copy and paste only the visible rows using Edit/Go To/Special/Visible Cells Only. After presenting the transportation LP model and the details of the subtotalling procedure, I give an additional financial application of subtotals. Thus, in addition to teaching the details and pitfalls of using subtotals, the example introduces the transportation LP.

I next give an example of pivot tables to calculate coefficients for a classic production planning LP. Given a list of records of processing times at various machines by various operations, I construct a pivot table to averages the processing times, excluding certain recently-hired operators. This illustrates advanced options of pivot tables and also introduces production planning LPs.