

Strategic Costing
Preliminary Syllabus
Spring 2006

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Overview of the Course

The general subject of the course is the use of information in a multi-person production process. Of particular interest is the question of how much aggregation of information should occur. For example, should two divisions' numbers be aggregated into one set of numbers; or should several income statement accounts be aggregated into one? Or, in the alternative, should all numbers be acquired and reported separately? The answer depends critically on the interactions in the production process, most notably on the effects of information on production.

An important purpose of the course is to use the careful analysis of an accounting problem to access some of the best thinking the University has to offer. To that purpose we will discuss how Nature processes information and study some topics in quantum physics, relating them to the accounting problem at hand.

The first topic is coding: error detecting and error correcting codes, as well as secret codes. Although an apparently odd place to start the discussion, secret codes, in particular, highlight the strategic emphasis of the course. The setting we are interested in is multi-person, and the strategic use of information is always in view. Also, the technology of secret codes is related, perhaps surprisingly, to the later discussion of synergy in organizations.

The careful study of strategic settings requires an understanding of individual decision making, particularly risk aversion and expected utility representation. It is hoped that this topic will be review for several people. Nonetheless, we will start with the basics.

The study of performance evaluation and control will be based on the agency model. Information in strategic settings is our concern, and the agency model has enough structure (but not too much) to allow meaningful questions to be asked and answered. Our particular interest is settings in which synergy is a first order effect. Briefly, synergy occurs when the (uncertain) productive output of a group exceeds (in expectation) the sum of the outputs if the individuals in the group worked separately.

We will relate synergy in productive processes to synergy in Nature, using some concepts from quantum physics to aid our analysis of aggregation issues in Accounting. Also, what we learn about quantum physics will enable us to investigate some of the concepts in modern encryption (coding) technology.

Course Requirements

There will be an in-class midterm and a final exam. The midterm is scheduled for the end of the fourth week of class. The final will be during finals week at the time scheduled by the University. The midterm counts for 40% of the course grade, the final 50%. The remaining 10% is based on contributions to the learning environment.

Tentative Course Schedule

The textbook referred to is by Joel Demski: *Managerial Uses of Accounting Information* published by Kluwer Academic Publishers. The rest of the readings are on the course website.

Topic	
Coding	Error detecting and error correcting codes, as well as some centuries old ideas in number theory which are the basis of modern secret codes. Reading: Coding notes.
Individual Decision Making	Uncertainty and information, risk aversion, and expected utility representation. Reading: Demski, chapter 4
Performance Evaluation and Control	The use of information in a production setting. Reading: Demski, chapters 18 and 19; chapter 20 is recommended.
Synergy and Control	Interactions in the production process, especially interactions involving information. Reading: Fellingham and Schroeder, “Synergy, Quantum Probabilities and Control” (not appendix), and Enron notes.
Coordination and Collusion	Emphasis on collusion in a synergistic environment. Reading: Demski, chapter 22, especially pp. 584-87.
Information and Physics	A little deeper discussion of how Nature processes information (some quantum physics). Reading: Fellingham and Schroeder, appendix 1, Teleportation notes.
Revisit synergy	Using a little more physics opens up some more questions about information aggregation and production including how to think about different amounts of synergy.
Revisit coding	Quantum ideas are the basis of the current (and next?) generation of secret codes.