The course “Principles of Scientific Inquiry in Business” is required for all PhD students in the School of Business. Its purpose is to provide support to each student in his or her own development of an understanding of the basic principles of science pertinent to business-school research. This course examines “science” construed as positivism, interpretivism, action research, and design science. A common theme across these diverse notions of science is how the perspective of the university-based researcher is distinct from the perspective of the everyday people (managers, analysts, executives, clerical staff) whom the researcher observes, where the former perspective is not better or worse than the latter but strives to “add value” through the different goals that it seeks to achieve.

One emphasis in the course is the philosophical foundations of scientific inquiry. Scientific research that employs statistical methods can be scientific, but it is not the statistical methods that make the research scientific. One may judge a specific instance of qualitative research to be scientific or unscientific; however, in the latter case, it is not the lack of mathematical, statistical, or quantitative elements that renders the research unscientific. A grasp of the philosophical foundations of scientific inquiry will help one to determine if a given research study (including one’s own) is scientific or not, regardless of its outward appearance.

Another focus in the course is qualitative methods, which MGMT 701 (the second course in this sequence) complements with an emphasis on quantitative research. The quantitative-qualitative distinction is actually less important than the underlying principles of science, which cut across any quantitative-qualitative boundaries.

The weekly seminar format consists of collegial discussions. Usually, a student is required to write a paper just every other week. Each week, three students (out of the total of six students in INFO 700 this semester) will write papers answering questions designated for them and will e-mail their papers to allenslee@alum.mit.edu so that the papers will be received by noon of the day preceding the seminar. By 2pm, these papers will be forwarded to the entire class. All students are expected to read these papers as well as the assigned readings.

Because all the students in the course in this semester are information systems students, the readings will focus on information systems research.

The VCU Honor System applies to all students at VCU. A statement of it is available at <http://www.vcu.edu/provost/univ_policies/honor.htm>. It defines plagiarism as
“[r]epresenting orally or in writing, in any academic assignment or exercise, the words, ideas, or works of another as one’s own without customary and proper acknowledgment of the source.” It also defines and describes other violations of the VCU Honor System.

A student’s grade for the course will depend on class participation (25%) and the six paper grades (12.5% each). After being graded, no paper may be revised for a higher grade. There will be no exams. There will be no projects.

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**WEEKLY SEMINAR TOPICS AND READINGS**

**1 1 September 2004**

**An Introduction to the Course**

**An Introduction to the Research Publication Process**


The statistical notion of generalizability, which associates generalizability with a large sample size, is only a subset of, in turn, just one of four types of generalizability. Lee and Baskerville’s analysis of generalizability also conveniently provides us with an introduction to some basic philosophical concepts in scientific inquiry.

Documents related to the publication process of “Generalizing Generalizability in Information Systems Research.”

Doing good research is one thing; publishing it is quite another. These documents provide a detailed, and painful, account of the events involved in the actual publication of a paper.

**2 8 September 2004**

**Induction and Deduction in the Logic of Science**


Lee walks the reader through basic philosophical concepts in scientific inquiry and points out the difference they make in the context of information systems research.


Popper provides good, easy-to-understand examples of research that is not empirically testable (“falsifiable”), where the examples pertain to the research of Marx, of Freud, and of Adler.


Copi’s textbook on formal logic provides a succinct characterization of the logic of empirical science.
POSITIVIST RESEARCH

3 15 September 2004

Positivist Research: Laboratory Experiments and Statistical Experiments


4 22 September 2004

Hands-on work with electronic research databases

5 29 September 2004

Positivist Research: Natural Experiments and Case Studies

Rosabeth Moss Kanter, *Men and Women of the Corporation*, New York: Basic Books, 1977. Try to read the entire book, but be sure to cover the following parts: “Introduction” (pp. 3-11), “Secretaries” (pages 69-103), “Contributions to Theory: Structural Determinants of Behavior in Organizations” (pp. 245-265), and “Appendix I: Field Study Methodology and Sources of Data” (pp. 331-338). Women students with corporate experience who have taken this course agree that Kanter’s study on the status and situation of women in corporations, published in 1977, remains timely. It is also an example of beautifully executed field research. It has both positivist and interpretive elements.

Allen S. Lee, “Case Studies as Natural Experiments,” *Human Relations* (42:2), 1989, pp. 117-137. There are many forms of experiments, such as laboratory experiments, statistical experiments, and natural experiments. Nagel’s characterization of experiments pertains to them all. Lee reconstructs Kanter’s field study as a natural experiment.

Markus’ classic article in information systems research continues to be highly cited.


Lee provides an overview of the main features of what positivist researchers would consider to be scientific research. Lee reconstructs Markus’s field study as a scientifically conducted case study.

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6 6 October 2004

**Positivist Research – Yin’s Case Study Method**


Practically all information systems researchers consider this to be a “must read” book, including those who do not do qualitative research.

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**INTERPRETIVE RESEARCH**

7 13 October 2004

**Interpretive Research – Social Construction of Reality**


Lee describes positivist research and interpretive research, including how they differ from each other.


Many published information systems research articles use the terms “socially constructed” as if it were a synonym for “subjective”; however, according to Berger and Luckmann (whose book popularized this and similar terms), socially constructed realities are also objective.


On pages 149, 150, and 151, Lee offers a succinct characterization of what a socially constructed reality is.


Most doctoral students consider this article dense and difficult to read. Making the article worthwhile are two important distinctions that Schutz makes: “first level constructs” vs. “second level constructs” and the “natural attitude of everyday life” vs. the “scientific attitude.”
8 & 9  20 & 27 October 2004

Interpretive Research – Ethnography


Gearing’s short and nifty book conveys the essential features of ethnographic research.


Schwartzman provides us with one of those books that captures, all in one place, most of the essentials you need to know about an important topic (in this case, ethnography).


This is a well executed and highly cited ethnographic study in the information systems field.

Rosabeth Moss Kanter, *Men and Women of the Corporation*, New York: Basic Books, 1977. Try to read the entire book, but be sure to cover the following parts: “Introduction” (pp. 3-11), “Secretaries” (pages 69-103), “Contributions to Theory: Structural Determinants of Behavior in Organizations” (pp. 245-265), and “Appendix I: Field Study Methodology and Sources of Data” (pp. 331-338).

Previously assigned, week 5.

10  3 November 2004

Interpretive Research – Hermeneutics


Boland shows that accounting data – just numbers in a report – can open up the entire world of a socially constructed reality. His study also provides excellent material for the enduring question about the difference between data and information.


Lee illustrates the concept of the hermeneutic circle. Much, but not all, of the material in this paper appears in the next reading.


Without mentioning hermeneutics, Ngwenyama and Lee do a hermeneutic interpretation from a critical perspective.

Assigned previously, in week 7.

11 10 November 2004

**Interpretive Research – Grounded Theory**


DESIGN SCIENCE & ACTION RESEARCH: DOING, NOT JUST OBSERVING

12 17 November 2004

**Design Science**

Herbert Simon, *Sciences of the Artificial*, Cambridge, MA: MIT Press, 1981 or 1996. This is another classic book that all doctoral students, but especially information systems doctoral students, should be familiar with.


The field of architecture does not neatly fit categories such as natural science, social science, engineering, art, and so forth. Lee argues the same for the field of (management) information systems, and shows how architecture and information systems both share design as a core and defining feature of what they are.

13  24 November 2004

Thanksgiving holiday. Every year, classes after 12pm on the Wednesday before Thanksgiving turn out to be canceled.

14  1 December 2004

Action Research


Baskerville conveys the essentials of action research.


Mårtensson and Lee propose a very specific form of action research.

THE ROOTS OF SCIENTIFIC OBJECTIVITY IN THE SCIENTIFIC COMMUNITY

15  8 December 2004


All scholars in the natural and social sciences ought to read this book, and many (maybe most) have. Kuhn’s book can be credited, or blamed, for popularizing the term “paradigm.”
Every student should read all the assigned books, articles, and chapters, but priority should be given to those readings assigned in the weeks for which the student must write papers.