VICTORIA UNIVERSITY OF WELLINGTON

Te Whare Wānanga o te Ūpoko o te Ika a Māui

School of Information Management

INFO 403 RESEARCH METHODS IN INFORMATION SYSTEMS

Trimester 1 2006

COURSE OUTLINE

Contact Details

Lecturer:

Joerg Evermann
Easterfield 214
04 463 6857
Joerg.Evermann@vuw.ac.nz

Class Times and Room Numbers

Seminar

Wednesdays, 10am to 1pm
KK 202

Tutorials

There will be weekly tutorials of 1 to 2 hours, place and time to be decided with class/dependent on availability of rooms & tutors.

Course Objectives

At the end of the course, the student should be able to
- Identify, describe, and determine the applicability of a selection of research methods to questions in Information Systems
- Decide on appropriate methods to investigate various fields of IS
- Formulate a research proposal in particular area
- Critique and discuss existing research in IS from a methodological perspective.

Course Content

The course will cover the following topics:

Week	Topic #	Class Topics	Tutorial Topic	Week
1		Course Introduction		1
2	1	Science & Theories		2
	2	Choice of Paradigms & Methodology		
3	3	Interpretivism & Hermeneutics		3
	4	Ethnography		
4	5	Grounded Theory		4
5	6	Action Research		5
6	7	Process Tracing		6
	8	Delphi		
7	9	Case Studies	Introduction to Statistics	7
8	10	Validity and Reliability	Introduction to Statistics	8
9	11	Scale and Instrument Development	Analysis of Variance	9
10	12	Survey Research	Factor Analysis	10
11	13	Experimental Research	Structural Equation Modeling	11
	14	Observational Data Collection		
12	15	Design Research		12
		Course Summary/Wrapup		

All students are encouraged but not required to attend the INFO 401 class on Thursday, 23 March, at 10:00am. In this class, INFO 401 students will present their literature review outlines and receive feedback.

Readings

All readings will be available at Student Notes.

The following reading list is structured by topic. Refer to the above schedule when each topic is to be discussed. ALL students must read in depth the indicated primary readings and be prepared to discuss and critique them. The presenting students for that week must also read the secondary literature in depth, and include these in their presentation.

The course readings and class discussions emphasize breadth over depth. It is expected that students employ the appropriate secondary and other literature for work on their main course assessment item, the research proposal (see Assessment section below).

While there are many books on each of the topics discussed in the course, the readings focus on journal articles specific to the IS or the wider managerial field. The interested student may consult the references in the articles for further reading.

Additional Background Literature

This is strongly recommended for those wanting a more in-depth look at the philosophical aspects of social science research. It will not be discussed in class, but is helpful to put you on a firm philosophical footing. Both books are very clearly written and easy reads.

- Kuhn, Thomas (1962). The Structure of Scientific Revolutions. Chicago University Press, Chicago, Ill.

  This classic is probably one of the most influential books on what science is. It's short, and an easy and fascinating read.

- Fay, Brian (1996). Contemporary Philosophy of Social Science. Blackwell Publishers, Oxford, UK.

  This is a very brief and easy to read introduction to the central questions that confront the study of human beings and human organizations. Targeted at advanced undergraduates, so very readable and pertinent.

Science (Week 2)

Primary Literature

- Casti, John L. (1989) Paradigms Lost. Avon Books, New York. Chapter 1: Faith, Hope, and Asperity. pp. 67ff.

Casti is a very basic introduction to what science is. Fundamental. For more on this topic, read the book by Thomas Kuhn, mentioned above, which is heavily referenced by Casti.

Theories (Week 2)

Primary Literature

- Bacharach, Samuel B. (1989) Organizational Theories: Some Criteria for Evaluation. The Academy of Management Review. Vol 14, No 4, pp. 496-515.

Bacharach delineates theories from other types of studies and offers some generic guidelines on what makes a good theory.

Secondary Literature

- Whetten, David A. (1989) What Constitutes a Theoretical Contribution? The Academy of Management Review. Vol 14, No 4, pp. 490-495.

Whetten's short paper gives another introduction to the elements of theories in management research. It goes on to suggest pragmatic criteria for good theory based research and how it is evaluated by journal reviewers.

Choice of Paradigm (Week 2)

Primary Literature

- Orlikowski, Wanda J. and Baroudi, Jack J. (1991) Studying Information Technology in Organizations: Research Approaches and Assumptions. Information Systems Research. Vol 2, No 1, pp. 1.

Orlikowski and Baroudi provide a brief overview over the research paradigms that are applied in IS research (although this has changed somewhat), and, more importantly, briefly describe three possible paradigms or philosophies that the IS researcher can adopt.

- Weber, Ron (2004) The Rhetoric of Positivism vs. Interpretivism: A Personal View. MIS Quarterly. Vol 28, No 1, pp. iii-xii.

Ron Weber's easy to read opinion piece suggests that the differences between interpretivism and positivism are not as wide as they are made out to be.

Secondary Literature

- Lee, Allen S. (1991) Integrating Positivist and Interpretivist Approaches to Organizational Research. Organization Science. Vol 2, No 4, pp. 342.

Allen Lee discusses the premises of the both positivist and interpretivist paradigms and provides an example how they can be combined to offer greater insight into a phenomenon.

Literature Review & Good Research

This literature is important, but will not be discussed in class, due to time constraints. It is therefore secondary literature. You will likely see this discussed in more depth in INFO 401.

Secondary Literature

- Webster, Jane and Watson, Richard T. (2002) Analyzing the Past to Prepare for the Future: Writing a Literature Review. MIS Quarterly. Vol 26, No 2, pp. xiii-xxiii.

A brief intro on how to do a good lit review that not only demonstrates that you've read the literature, but also makes a contribution to the state of the field and is publishable.

- Straub, Detmar W., Ang, Soon, and Evaristo, Roberto (1994) Normative Standards for IS Research. ACM DATABASE, Feb 1994.

Straub et al. provide empirical results on what reviewers and editors look for when they evaluate research. This is interesting in conjunction with the following list of review questions compiled from various journals:

- http://business2.unisa.edu.au/cobar/documents/review-form2.pdf

Note that these standards will also be applied to your work in the Honours program and beyond.

- Smith, Alan Jay. (1990) The Task of the Referee. IEEE Computer. Vol 23, No 4, pp. 65-73

This is a description of the criteria of a good paper from the perspective of the referee. It's a valuable resource for authors.

Interpretivism & Hermeneutics (Week 3)

<u>Primary Literature</u>

- Myers, Michael D. (ed) (2004) Qualitative Research in Information Systems. http://www.isworld.org. Last access Sep 29, 2005.

While qualitative research is not necessarily interpretive, interpretive research is mostly qualitative. Myers provides a good overview over qualitative methods (and thus interpretive methods).

- Prasad, Anshuman (2002) The Contest over Meaning: Hermeneutics as an Interpretive Methodology for Understanding Texts. Organizational Research Methods. Vol 5, No 1, pp. 12-33.

Prasad offer an introduction to the technique of hermeneutic interpretation as well as guidelines and a brief example of the application of hermenutics in organizational research.

<u>Secondary Literature</u>

- Nandhakumar, Joe, and Jones, Matthew (1997) Too Close for Comfort? Distance and Engagement in Interpretive Information System Research. Information Systems Journal. Vol 7, pp. 109-131.

Nandhakumar and Jones discuss the issue of how close the researcher should be to the phenomenon under observation. They also offer a good discussion of the basic assumptions of interpretivism.

Ethnography (Week 3)

<u>Primary Literature (How-to)</u>

- Myers, Michael D. (1999) Investigating Information Systems with Ethnographic Research. Communications of the AIS. Vol 2, Article 23.

A very brief but practical overview of what Ethnography is, and how ethnographic research is conducted (in IS). Points out that there are multiple types of ethnographic research.

- Harvey, Lynda J. and Myers, Michael D. (1995) Scholarship and Practice: The Contribution of Ethnographic Research Methods to Bridging the Gap. Information Technology and People. Vol 8, No 3, pp. 13ff.

Another brief introduction to ethnography in IS research.

<u>Primary Literature (Example)</u>

- Schultze, Ulrike (2000) A Confessional Account of an Ethnography about Knowledge Work. MIS Quarterly. Vol 24, No 1, pp. 3-41.

This is an example of ethnographic research.

Grounded Theory (Week 4)

<u>Primary Literature (How-to)</u>

- Eisenhardt, Kathleen M. (1989) Building Theories from Case Study Research. The Academy of Management Review. Vol 14, No 4, pp. 532-550.

A very practical and detailed guide to grounded theory.

<u>Primary Literature (Example)</u>

- DeVreede, Gert-Jan, Jones, Noel, and Mgaya, Rabson J. (1999) Exploring the Application and Acceptance of Group Support Systems in Africa. Journal of Management Information Systems. Vol 15, No 3, pp. 197-234.

An application of Grounded Theory to GSS, leading to an extension of the technology acceptance model (TAM).

<u>Secondary Literature (How-to)</u>

- Douglas, David (2003) Grounded Theories of Management: A Methodological Review. Management Research News. Vol 26, No 5, pp. 44-52.

A brief review of the two different positions of how to conduct grounded theory research.

<u>Secondary Literature (Example)</u>

- Orlikowski, Wanda J. (1993) CASE Tools as Organizational Change: Investigating Incremental and Radical Changes in Systems Development. MIS Quarterly. Dec 1993, pp. 309-340.

Another example of grounded theory, applied to the adoption of CASE tools

Action Research (Week 5)

<u>Primary Literature (How-to)</u>

- Baskerville, Richard L. (1999). Investigating Information Systems with Action Research. Communications of the AIS. Vol 2, Article 19.

A brief and easy to read introduction to what Action Research is all about.

- Baskerville, Richard L. and Myers, Michael (2004). Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice - Foreword. MIS Quarterly. Vol 28, No 3, pp. 329-335.

This is the foreword to a special issue of MISQ on action research. It briefly discusses the principles of action research and then shows how the articles in that issue (see the primary literature examples) employ action research.

- Avison, David, Lau, Francis, Myers, Michael and Nielsen, Peter Axel (1999). Action Research. Communications of the ACM. Vol 42, No 1, pp. 94-97.

This is a really brief summary of what action research is.

Secondary Literature (How-to)

- Kock, Nereu F., McQueen, Robert J. and Scott, John L. (1997). Can Action Research be Made More Rigorous in a Positivist Sense? Journal of Systems and Information Technology. Vol 1, No 1, pp. 1-24.

This paper addresses some of the criticisms of action research and proposes a method to address them.

Primary Literature (Examples)

I have taken one article from the MISQ issue on action research. The others are in the secondary literature (Examples). All follow a similar format.

- Street, Christopher T. and Meister, Darren B. (2004). Small Business Growth and Internal Transparency: The Role of Information Systems. MIS Quarterly. Vol 28, No 3, pp. 473-506.

A good write-up of an action research project.

Process Tracing (Week 6)

Primary Literature (How-to)

- Todd, Peter and Benbasat, Izak (1987) Process Tracing Methods in Decision Support Systems Research: Exploring the Black Box. MIS Quarterly. Dec 1987, pp. 493-512.

Todd & Benbasat provide a good introduction into what process tracing is and why it is useful. They discuss it within the context of Decision Support Systems research.

- Cook, Gary J. and Swain, Monte R. (1993) A Computerized Approach to Decision Process Tracing for Decision Support System Design. Decision Sciences. Vol 24, No 5, pp. 931-952.

Cook & Swain also discuss the use of process tracing and suggest computerized tool support can play an important role in process tracing.

Primary Literature (Examples)

- Hungerford, Bruce C; Hevner, Alan R. and Collins, Rosann W. (2004) Reviewing Software Diagrams: A Cognitive Study. IEEE Transactions on Software Engineering. Vol 30, No 2, pp 82-96.

Secondary Literature (Examples)

- Mao, Ji-Ye and Benbasat, Izak (1998) Contextualized Access to Knowledge: Theoretical Perspectives and a Process-Tracing Study. Information Systems Journal. Vol 8, pp. 217-239.

There's a lot of discussion of KBS and contextualized explanation, but focus on the methodological aspects of the process tracing.

Delphi Method (Week 6)

Primary Literature (How-to)

- Schmidt, Roy C. (1997) Managing Delphi Surveys Using Nonparametric Statistical Techniques. Decision Sciences. Vol 28 No 3, pp 763-774

- Okoli, Chitu and Pawlowski, Suzanne D. (2004) The Delphi Method as a Research Tool: An Example, Design Considerations, and Applications. Information & Management. Vol 42, pp. 15-29.

This article is an introduction to the Delphi method, exemplified in an e-commerce research study. It offers a very detailed discussion of why Delphi might be chosen, differences to other survey studies, and how the Delphi study was executed.

Primary Literature (Example)

- Nevo D, Benbasat, I, and Wand, Y. (2003) Exploring Meta-Knowledge for Knowledge Management Systems - A Delphi Study. Proceedings of the 2003 AIS International Conference on Information Systems, Seattle, WA. December 2003.

This is a very thoroughly documented example of a Delphi study in knowledge management.

Case Studies (Week 7)

Case studies are a method used in both, the positivist and interpretivist, paradigm. However, the conduct and interpretation of results differs.

Primary Literature (How-to)

- Klein, Heinz K. and Myers, Michael D. (1999) A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. MIS Quarterly. Vol 23, No 1, pp 67-94.

Klein & Myers offer 7 principles for doing case study research in the interpretive paradigm.

- Pare, Guy (2004) Investigating Information Systems with Positivist Case Study Research. Communications of the AIS. Volume 13, pp 244-264.

Pare offers a very detailed and practical set of guidelines on planning, conducting, analysing and writing up positivist case studies.

Primary Literature (Example)

- Sarker, Suprateek and Lee, Allen S. (2002) Using a Positivist Case Research Methodology to Test Three Competing Theories-in-Use of Business Process Redesign. Journal of the AIS. Vol 2, Article 7.

This article shows that case study research is not only used to generate theories and hypotheses, but may also be used to test them.

Secondary Literature (How-to)

- Darke, Peta, Shanks, Graeme and Broadbent, Marianne (1998) Successfully Completing Case Study Research: Combining Rigour, Relevance and Pragmatism. Information Systems Journal. Vol 8, pp 273-289.

Darke et al. offer answers to frequent practical and pragmatic issues in case study research. Very practical.

- Lee, Allen S. (1989) A Scientific Methodology for MIS Case Studies. MIS Quarterly. March 1989, p. 33-50.

Allen Lee shows, using an early IS case study by Lynne Markus, how case study research can satisfy scientific principles usually associated with quantitative research.

- Benbasat, Izak, Goldstein, David K. and Mead, Melissa (1987) The Case Research Strategy in Studies of Information Systems. MIS Quarterly. Sep 1987, pp 369-386.

Benbasat et al. offer some practical guidelines on conducting case studies and an evaluation and critique of prior case study research.

- Dube, Line and Pare, Guy (2003) Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations. MIS Quarterly. Vol 27, No 4, pp 597-635.

Dube & Pare offer a survey of case study research in the recent IS literature, focussing on methodological rigor, such as data validation and triangulation (see Pare's CAIS article above).

Secondary Literature (Examples)

- Horner Reich, Blaize and Benbasat, Izak (2000) Factors that Influence the Social Dimensions of Alignment Between Business and Information Technology Objectives. MIS Quarterly. Vol 24, No 1. pp 81-113.

Validity and Reliability in Positivist Research (Week 8)

<u>Primary Literature</u>

- Straub, Detmar, Boudreau, Marie-Claude, and Gefen, David (2004) Validation Guidelines for IS Positivist Research. Communications of the AIS. Vol 13, Article 24.

This is another easy to read article in CAIS, offering an introduction to the concepts of validity and reliability, applicable to experimental and survey research.

- Cook, Thomas D., Campbell, Donald T. and Peracchio, Laura (1990) Quasi Experimentation. In: Dunnette, Marvin D. and Leaetta, M. Hough (eds.) Handbook of Industrial and Organizational Psychology. Consulting Psychologists Press, Palo Alto, CA. Pp. 491-516.

Focus on the discussion of the various validity and reliability concepts. Read up to page 516.

- Lynch, John G. (1982) On the External Validity of Experiments in Consumer Research. The Journal of Consumer Research. Vol 9, No 3, pp. 225-239.

While Straub et al. discuss mainly issues of internal validity, this article focuses on external validity, i.e. how to make sure that the results are generalizable.

Scale and Instrument Development (Week 9)

<u>Primary Literature (Scale Development How-To)</u>

- Churchill, Gilbert A. (1979) A Paradigm for Developing Better Measures of Marketing Constructs. Journal of Marketing Research. Vol 16, No 1, pp 64-73.

A practical introduction and step-by-step guide to scale development.

- Hinkin, Timothy R. (1998) A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires. Organizational Research Methods. Vol 1, No 1, pp. 104-121.

Another article on scale development with detailed process and guidelines.

- Hufnagel, Ellen M., and Conca, Christopher (1994) User Response Data: The Potential for Errors and Biases. Information Systems Research. Vol 5, No 1, pp. 48-73.

A good overview on what you should and should not expect of respondents when employing a survey instrument.

Primary Literature (Examples)

- Moore, Gary C., and Benbasat, Izak (1991) Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. Information Systems Research. Vol 2, No 3, pp. 192-222.

Moore & Benbasat discuss at length the process and issues in instrument validation and offer a thorough example of instrument development.

- Goodhue, Dale L. (1998) Development and Measurement Validity of a Task-Technology Fit Instrument for User Evaluations of Information Systems. Decision Sciences. Vol 29, no 1, pp. 105-138.

A more recent example, again with a thorough discussion of how the instrument was developed and validated.

Secondary Literature (Scale Development How-To and Issues)

- Cortina, Jose M. (1993) What is Coefficient Alpha? An Examination of Theory and Applications. Journal of Applied Psychology. Vol 78, NO 1, pp. 98-104.

A discussion of what Cronbach's Alpha does and does not indicate and when to employ it in instrument design.

- Straub, Detmar W. (1989) Validating Instruments in MIS Research. MIS Quarterly. June 1989, pp. 147-169.

Straub offers guidelines and an example for developing valid instruments. A lot of these ideas are also reflected in Straub et al. (2004) above).

- Drury, D.H. and Farhoomand, A. (1997) Improving Management Information Systems Research: Question Order Effects in Surveys. Information Systems Journal. Vol 7, pp. 241-251.

A simple experiment that shows that the order in which questions are presented on a questionnaire influences the responses. However, no theory is given to account for this, and consequently, only limited recommendations are given.

- Keller, Tiffany and Danserau, Fred (2001) The Effect of Adding Items to Scales: An Illustrative Case of LMX. Organizational Research Methods. Vol 4, No 2, pp. 131-143.

Keller & Danserau examine in detail the effects of adding items to an existing instrument. The results show that this requires careful analysis and re-validation that goes beyond face validity and internal consistency.

- Boudreau, Marie-Claude, Gefen, David, and Straub, Detmar W. (2001) Validation in Information Systems Research: A State-of-the-Art Assessment. MIS Quarterly. Vol 25, No 1, pp. 1-16.

A survey of the recent literature with respect to instrument validation techniques employed by the researchers.

Survey Research (Week 10)

<u>Primary Literature (Survey Research)</u>

- Pinsonneault, Alain and Kraemer, Kenneth L. (1993) Survey Research Methodology in Management Information Systems: An Assessment. Journal of Management Information Systems. Vol 10, No 2, pp 75-105.

A good discussion of some methodological issues beyond scale reliability and validity. Offers an analysis of the MIS literature and identifies weaknesses in research design. Although this article is a bit older, many of the issues could probably be identified even today.

- Grover, Varun (2004) A Tutorial on Survey Research: From Constructs to Theory. Working Paper. http://dmsweb.badm.sc.edu/grover/survey/MIS-SUVY.html. Access on Dec 22nd, 2004.

Grover presents criteria for the conduct of survey research. These go beyond the validity and reliability of the instrument itself.

<u>Secondary Literature (Survey Research)</u>

- Simsek, Zeki and Veiga, John F. (2001) A Primer on Internet Organizational Surveys. Organizational Research Methods. Vol 4, No 3, pp. 218-235.

Simsek & Veiga compare e-mail questionnaires with mail-in and telephone questionnaires in terms of response rate, bias, and other factors.

- Simsek, Zeki and Veiga, John F. (2000) The Electronic Survey Technique: An Integration and Assessment. Organizational Research Methods. Vol 3, No 1, pp. 93-115.

This article focuses on web-based questionnaires, and potential pitfalls and issues.

Experimental Research (Week 11)

<u>Primary Literature (How-to)</u>

- Benbasat, Izak (1990) Laboratory Experiments in Information Systems Studies with a Focus on Invidivuals: A Critical Appraisal. In: Benbasat, Izak (ed.) The Information Systems Research Challenge: Experimental Research Methods. Harvard Business School. 1990. Boston, MA.

- Zmud, Robert W., Olson, Margrethe H. and Hauser, Richard (1990) Field Experimentation in MIS Research. In: Benbasat, Izak (ed.) The Information Systems Research Challenge: Experimental Research Methods. Harvard Business School. 1990. Boston, MA.

The above two articles are taken from an edited volume on experimental research in the IS field. They introduce two types of experiments, a more controlled lab experiment, and a more realistic field experiment.

- Rosenthal, Robert (1966) Experimenter Effects in Behavioural Research. Meredith Publishing Company. New York, NY. Chapter 24.

This chapter is a discussion of how the (laboratory) experimenter can unknowingly influence the results of the study.

Primary Literature (Examples)

- Todd, Peter and Benbasat, Izak (1999) Evaluating the Impact of DSS, Cognitive Effort, and Incentives on Strategy Selection. Information Systems Research. Vol 10, No 4, pp. 356-374.

Todd & Benbasat describe an experimental study, from model development through a discussion of experimental setup to a thorough discussion of results.

Secondary Literature (How-to)

- Hughes, Cary T. and Gibson, Michael Lucas (1991) Students as Surrogates for Managers in a Decision-making Environment: An Experimental Study. Journal of Management Information Systems. Vol 8, No 2, pp. 153-166.

Hughes & Gibson discuss the fact that students are often used as convenience subjects when the target population is managers. They find empirical evidence that this is problematic, at least in some circumstances.

- Jarvenpaa, Sirkka L., Dickson, Gary W. and DeSanctis Gerardine (1985) Methodological Issues in Experimental IS Research: Experiences and Recommendations. MIS Quarterly. June 1985, pp. 141-158.

Jarvenpaa et al. offer a critical review of the experimental research method in information presentation studies. A number of recommendations are offered, and an experimental study is presented which applies these recommendations.

- Venkataram, N. and Zaheer, Akbar (1990) Elelctronic Integration and Strategic Advantage: A Quasi-Experimental Study in the Insurance Industry. Information Systems Research, Vol 1, No 4, pp 377-393.

Venkataram & Zaheer offer some discussion and an example of the field experiment method in IS research.

Observational Data Collection (Week 11)

Primary Literature

- Weingart, Laurie R (1997) How did they do that? The Ways and Means of Studying Group Processes. Research in Organizational Behaviour. Vol 19, pp. 189-239.

Observing group processes and coding the observational data. Coding design guidelines for valid measures.

- Nyerges, Timothy et al. (1998) Developing and Using Interaction Coding Systems for Studying Groupware Use. Human-Computer Interaction. Vol 13, pp 127-165.

Design Research (Week 12)

<u>Primary Literature</u>

- AIS (2004). Design Research in Information Systems. http://www.isworld.org. Last access December 21, 2004.

This is the Design Research page on ISWorld. It offers a good introduction to what Design Research is.

- Nunamaker, Jay F., Chen, Minder and Purdin, Titus D.M. (1991). Systems Development in Information Systems Research. Journal of Management Information Systems. Vol 7, No 3, pp. 89-106.

This article by Nunamker et al. shows that Design Research is not a recent phenomenon, it goes back quite a while. This article discusses the role that Design Research can play and how to conduct it, i.e. to ensure that you're doing research, not just building systems.

- Hevner, Alan R., March, Salvatore T., Park, Jinsoo and Ram, Sudha (2004). Design Science in Information Systems Research. MIS Quarterly. Vol 28, No 1, pp. 75-105.

Hevner et al. present a more recent discussion of the place of Design Science in IS research. They provide 7 guidelines to good Design Science and offer some examples as well.

<u>Secondary Literature</u>

- March, Salvatore T. and Smith, Gerald F. (1995). Design and Natural Science Research on Information Technology. Decision Support Systems. Vol 15, pp. 251-266.

This article offers a framework of research activities and outputs and discusses Design Research within this framework.

- Gregg, Dawn G., Kulkarny, Uday R. and Vinze, Ajay S. (2001). Understanding the Philosophical Underpinnings of Software Engineering Research in Information Systems. Information Systems Frontiers. Vol 3, No 2, pp. 169-183.

Offers a methodology and framework for software engineering research, i.e. Design Research.

Materials and Equipment

A set of readings will be distributed to students.

Assessment Requirements

Assessment will be based on the following deliverables. Students must attain at least 50% in each assessment to pass the course.

For students taking INFO 401 concurrently:

#	Deliverable	Marks%	Due Date
1	Initial Research Question	5%	Week 2 (beginning of class)
2	Annotated Bibliography (as per INFO 401) and literature review outline.	Assessed in INFO 401	Week 4 (beginning of class)
3	Essay on chosen research method	10%	Week 7 (beginning of class)
4	Final Research Proposal (includes INFO 401 final final deliverable)	45%	June 8th, 14:00
5	In-class presentation on assigned or chosen topic (x1)	15%	To be determined with student
5a	Initial slides and suggested papers for #4		One week prior to #5
6a	Class and Tutorial Participation	15%	All Lectures
6b	Reading summaries and discussion	10%	All Lectures

Deliverable #1 is a proposal for a research question to be investigated. It contains AT MOST 500 words and MUST include AT LEAST 3 references to the relevant journal literature. It should describe the research topic, the research question, and why it is important to investigate the question.

Deliverable #2 builds on deliverable #1. It includes an annotated bibliography and literature review outline as per INFO 401 requirements. It will not be assessed in this course but must be delivered on time.

Deliverable #3 is an essay on a chosen research method. The chosen method must be different from those chosen for deliverable #5. The essay should describe the history of the method, its use in IS and a critical discussion of it, including but not limited to its appropriateness, benefits and drawbacks, controversies etc.. It contains AT MOST 7500 words, and MUST INCLUDE at least 20 references to the relevant literature. 50% of the references must be to journal articles. No more than 10% of the references may be to internet sites.

Deliverable #4 builds on deliverable #2 and the INFO 401 final deliverable. It includes a review of existing literature, a description of the chosen research method and a detailed plan for carrying out the research. The literature review must support and be focussed on the research question and should allow you to identify the main concepts/constructs of the research. It addresses potential limitations, usefulness and contribution of the research. It contains AT MOST 12500 words (including those of the final INFO 401 deliverable, you will have to cut that down if necessary), and MUST INCLUDE at least 20 references to the relevant literature. 50% of the references must be to journal articles. No more than 10% of the references may be to internet sites.

Deliverable #5 is an in-class presentation. This presentation is to last about 45 minutes with subsequent or interspersed 45 minutes of discussion time. The presentation is to be on a research method to be chosen in consultation with the lecturer, from one of the topics on p. of this course outline). Students will also be required to lead the discussion on the topic. Students will be required to suggest two papers (article/chapter/conference paper) in the literature that contain good or bad examples/application of the research method or are in other ways related (e.g. a more in-depth discussion). The presentations should focus on the secondary literature and the two additional articles/chapters. Initial draft of slides and paper suggestions are due one week before the presentation. Evaluation criteria include content, presentation, discussion, among others.

Students are required to attend ALL classes and ALL tutorials. For preparation and discussion, you MUST submit a typed two-page summary and discussion of the week's readings. You must submit this at least 24 hours before the class. Bring up points that seem particularly salient, fundamental, intriguing, troublesome, or perhaps debatable of confusing. What were the most important insights you obtained from the article? A simple SUMMARY of the articles is NOT ENOUGH.

For students NOT taking INFO 401 concurrently:

#	Deliverable	Marks%	Due Date
1	Initial Research Question	5%	Week 2 (beginning of class)
2	Interim Research Proposal	10%	Week 6 (beginning of class)
3	Final Research Proposal	45%	June 8th, 14:00
4	In-class presentation on assigned or chosen topic (x1)	15%	To be determined with student
4a	Initial slides and suggested papers for #4		One week prior to #5
5a	Class and Tutorial Participation	15%	All Lectures
5b	Reading summaries and discussion	10%	All Lectures

Deliverable #1 is a proposal for a research question to be investigated. It contains AT MOST 500 words and MUST include AT LEAST 3 references to the relevant journal literature. It should describe the research topic, the research question, and why it is important to investigate the question.

Deliverable #2 builds on deliverable #1. It includes a review of existing literature, and an initial description of the chosen research method. It should contain AT MOST 5000 words, and MUST INCLUDE at least 20 references to the relevant literature.

Deliverable #3 builds on deliverable #2. It includes a review of existing literature, a description of the chosen research method and a detailed plan for carrying out the research. It addresses potential limitations, usefulness and contribution of the research. It CONTAINS AT MOST 10000 words, and MUST INCLUDE at least 20 references to the relevant literature. 50% of the references must be to journal articles. No more than 10% of the references may be to internet sites.

Deliverable #4 is an in-class presentation. This presentation is to last about 45 minutes with subsequent 45 minutes of discussion time. The presentation is to be on a research method to be chosen in consultation with the lecturer, from one of the topics on p. of this course outline).

Students will also be required to lead the discussion on the topic. Students will be <u>required to suggest two papers (article/chapter/conference paper) in the literature</u> that contain good or bad examples/application of the research method or are in other ways related (e.g. a more in-depth discussion). The presentations should focus on the secondary literature and the two additional articles/chapters. Initial draft of slides and paper suggestions are due one week before the presentation. Evaluation criteria include content, presentation, discussion, among others.

Students are required to attend ALL classes and ALL tutorials. For preparation and discussion, you MUST submit a typed two-page summary and <u>discussion</u> of the week's readings. You must submit this at least 24 hours before the class. Bring up points that seem particularly salient, fundamental, intriguing, troublesome, or perhaps debatable of confusing. What were the most important insights you obtained from the article? A simple SUMMARY of the articles is NOT ENOUGH.

Workload

There is a 2-hour class per week plus an hour or two of tutorials. You should expect to spend between 2 to 4 hours per week on preparation for the class. You should also expect to spend another 5 to 7 hours per week in the library to work on your research proposal and in-class presentation.

Penalties

Work submitted after the deadline will incur a 5% penalty for each day late (including weekends and holidays). No work will be accepted that is more than a week late, leading to failure of the course. Mitigating circumstances such as illness etc. will be taken into account only with written documentation.

Plagiarism (see below) on any assessment item will at least lead to failure of the assessment item, and consequently failure of the course. Additionally, other penalties may be determined to be appropriate (see below).

Mandatory Course Requirements

Students must attend and participate in ALL classes and ALL tutorials. Failure to attend ALL classes and ALL tutorials will result in failure of the course with a Q standing. Mitigating circumstances such as illness etc. will be taken into account only with written documentation.

Students must attain at least 50% of the marks on each assessment item. Failure to achieve 50% on any one assessment item will lead to failure of the course with a Q standing.

Communication of Additional Information
Additional information will be communicated by email and Blackboard. Students are expected to check their VUW student email account, as well as Blackboard at least every 2 days.

General University Policies and Statutes
Students should familiarise themselves with the University's policies and statutes, particularly those regarding assessment and course of study requirements, and formal academic grievance procedures.

Student Conduct and Staff Conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps can be taken if there is a complaint. For queries about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor. This Statute is available in the Faculty Student Administration Office or on the website at: www.vuw.ac.nz/policy/StudentConduct.

The policy on Staff Conduct can be found on the VUW website at: www.vuw.ac.nz/policy/StaffConduct.

Academic Grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned or, if you are not satisfied with the result of that meeting, see the Head of School or the Associate Dean (Students) of your Faculty. Class representatives are available to assist you with this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievances Policy which is published on the VUW website: www.vuw.ac.nz/policy/AcademicGrievances.

Academic Integrity and Plagiarism

Academic integrity is about honesty – put simply it means **no cheating**. All members of the University community are responsible for upholding academic integrity, which means staff and students are expected to behave honestly, fairly and with respect for others at all times.

Plagiarism is a form of cheating which undermines academic integrity. Plagiarism is **prohibited** at Victoria.

The University defines plagiarism as follows:
> Plagiarism is presenting someone else's work as if it were your own, whether you mean to or not.

'Someone else's work' means anything *that is not your own idea, even if it is presented in your own style. It includes material from books, journals or any other printed source, the work of other students or staff, information from the Internet, software programmes and other electronic material, designs and ideas. It also includes the organization or structuring of any such material.*

Plagiarism is not worth the risk.

Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct *(*www.vuw.ac.nz/policy/studentconduct) and may be penalized severely. Consequences of being found guilty of plagiarism can include:
- an oral or written warning
- suspension from class or university
- cancellation of your mark for an assessment or a fail grade for the course.

Find out more about plagiarism and how to avoid it, on the University's website at:
www.vuw.ac.nz/home/studying/plagiarism.html.

Students with Disabilities
The University has a policy of reasonable accommodation of the needs of students with disabilities. The policy aims to give students with disabilities an equal opportunity with all other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, then please contact the Course Coordinator as early in the course as possible. Alternatively you may wish to approach a Student Adviser from Disability Support Services to confidentially discuss your individual needs and the options and support that are available. Disability Support Services are located on Level 1, Robert Stout Building, or phoning 463-6070, email: disability@vuw.ac.nz. The name of your School's Disability Liaison Person can be obtained from the Administrative Assistant or the School Prospectus.

Student Support
Staff at Victoria want students' learning experiences at the University to be positive. If your academic progress is causing you concern, please contact the relevant Course Co-ordinator, or Associate Dean who will either help you directly or put you in contact with someone who can.

The Student Services Group is also available to provide a variety of support and services. Find out more at www.vuw.ac.nz/st_services/ or email student-services@vuw.ac.nz.

VUWSA employs two Education Coordinators who deal with academic problems and provide support, advice and advocacy services, as well as organising class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building, phone 463 6983 or 463 6984, email education@vuwsa.org.nz.