

FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL¹

UGPC APPROVAL _____
 UFS APPROVAL _____
 SCNS SUBMITTAL _____
 CONFIRMED _____
 BANNER POSTED _____
 CATALOG _____

DEPARTMENT: **MARKETING** COLLEGE: **BUSINESS**

RECOMMENDED COURSE IDENTIFICATION:
 PREFIX **MAR** COURSE NUMBER **7785** LAB CODE (L or C) _____
 (TO OBTAIN A COURSE NUMBER, CONTACT RSHMAN@FAU.EDU)
 COMPLETE COURSE TITLE: **SCIENTIFIC METHOD IN BUSINESS**

CREDITS: **3** TEXTBOOK INFORMATION: **CHALNERS, A.F., WHAT IS THIS THING CALLED SCIENCE? 3RD EDITION, INDIANAPOLIS/CAMBRIDGE HACKETT PUBLISHING Co., INC., 1999; SHADISH, W.R. COOK, T.D. AND CAMPBELL, D.T., EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR GENERALIZED CAUSAL INFERENCE, 2ND EDITION, CENGAGE LEARNING 2001**

GRADING (SELECT ONLY ONE GRADING OPTION): REGULAR **X** SATISFACTORY/UNSATISFACTORY _____

COURSE DESCRIPTION, NO MORE THAN THREE LINES: **THIS COURSE PROVIDES BUSINESS PH.D. STUDENTS WITH AN EXPOSURE TO THE MAJOR ISSUES AND DEBATES ON THE SCIENTIFIC METHOD IN BUSINESS, INCLUDING THE USE AND APPLICATIONS OF INSIGHTS FROM PHILOSOPHY OF SCIENCE AS IT PERTAINS TO THE BUSINESS DISCIPLINES AND AN INTRODUCTION TO RESEARCH DESIGN.**

PREREQUISITES*: ADMISSION TO COLLEGE OF BUSINESS DOCTORAL PROGRAM	COREQUISITES*:	REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:
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* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: **GRADUATE FACULTY MEMBER, PH.D.**

Faculty contact, email and complete phone number: Dr. Eric H. Shaw shaw@fau.edu (561) 297-2123	Please consult and list departments that might be affected by the new course and attach comments. ³
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Approved by: Department Chair: <u><i>James J. Gray</i></u> J. GRAY College Curriculum Chair: <u><i>Allen J. Scott</i></u> College Dean: <u><i>Paul Hall</i></u> UGPC Chair: _____ Graduate College Dean: _____ UFS President: _____ Provost: _____	Date: <u><i>22 Oct 2012</i></u> <u><i>11-18-2012</i></u> <u><i>1.7.2013</i></u>	1. Syllabus must be attached; see guidelines for requirements: www.fau.edu/provost/files/course_syllabus.2011.pdf 2. Review Provost Memorandum: Definition of a Credit Hour www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf 3. Consent from affected departments (attach if necessary)
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Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.
 FAUnewscourseGrad—Revised September 2012



Florida Atlantic University
COLLEGE OF BUSINESS

MAR 7785
Scientific Method In Business

MODEL SYLLABUS

Required Text and Materials

Chalmers, A.F., *What is This Thing Called Science?* 3rd edition, Indianapolis/Cambridge: Hackett Publishing Company, Inc., 1999 (ISBN: 978-0-87220-453-9).

Shadish, W.R., Cook, T.D. and Campbell, D.T., *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*, 2nd edition, Cengage Learning, 2001 (ISBN: 978-0-395-61556-0).

The above texts are supplemented with additional readings.

Course Description

This course provides business Ph.D. students with an exposure to the major issues and debates on the scientific method in business, including the use and applications of insights from philosophy of science as it pertains to the business disciplines and an introduction to research design.

Course Prerequisites and Credit Hours

Prerequisites: Admission to College of Business PhD program

Credit Hours: 3 credits

Supplemental Course Description

This course provides business Ph.D. students with an exposure to the major issues and debates on the scientific method in business, including the use and applications of insights from philosophy of science as it pertains to the business disciplines and an introduction to research design. Descriptive analysis on the nature of science will be complemented by normative and methodological perspectives on how scientific knowledge is created, accumulated and advanced in the business disciplines. The first half of the course will focus on the issues relating to science in business and the second half will cover research design issues in the pursuit of research questions in business.



Course Learning Objectives

This course provides Ph.D. students with knowledge on content and validity of scientific knowledge as well as the scientific processes and methods that could be used in research in their respective business disciplines. The learning objectives include:

1. Understand and evaluate various scientific approaches in the conduct of research
2. Evaluate the appropriateness of various scientific approaches within the student's specific discipline
3. Assess theoretical and methodological appropriateness of various research designs
4. Critique research in terms of theoretical and methodological issues
5. Apply research design insights to the development of actionable research plans

Grading Scale

	<u>Letter Grade</u>		<u>Letter Grade</u>		<u>Letter Grade</u>
90.0 or above	A	88.0 - 89.9	A-	85.0 - 87.9	B+
80.0 - 84.9	B	78.0 - 79.9	B-	75.0 - 78.0	C+
70.0 - 75.9	C	60.0 - 60.9	D	59.9 or below	F

Course Evaluation Method

The following table summarizes each component of your grade for this course.

<i>Component</i>	<i>Percent</i>
Class Discussion	20.0%
Discussion Leadership	20.0%
Research Critique and Related Presentation	30.0%
Exam(s)	<u>30.0%</u>
Total	100.0%

Class Discussion: Students will actively take part in the class proceedings by contributing to the discussion, raising interesting issues and posing relevant questions. This may also include short assignments addressing the topic being covered. The following guidelines for effective participation should be adhered to.

1. Regardless of your work and other pressures, please ensure that you do the required readings for the week prior to class and actively participate in all the course proceedings for the week.

2. The following tasks are required of you each week:
 - a. Reading the prescribed text material and assigned article(s)
 - b. Taking part in class discussions

Apart from the above, the following may be additional activities for some weeks:

1. Reading other relevant non-prescribed article(s)
2. Completing prescribed assignments

Discussion Leadership: Each student will lead the discussion on a specific class day and will be given 45 minutes to summarize the major themes and issues and raise further questions on the topic. The student will also be responsible for taking the lead in answering other specific questions that may arise in class.

Research Critique and Related Presentation: Each student will critique the theoretical and methodological issues in a current working or published research paper assigned by the instructor based on the student's specific disciplinary orientation. The student will then present the critique during the final weeks of the semester. Additional details are provided below in Appendix A.

Exam(s): One or two exams will be administered. Exam content will be consistent with what a student would expect on a comprehensive exam.

Additional Course Policies

Professional Conduct. To foster a more professional learning environment and to develop habits that lead to success in the business work, all participants must engage in professional behavior, including:

1. Taking responsibility for individual actions.
2. Attending each class session, including arriving promptly and leaving at the designated time. Attendance sign-in sheets may therefore be used and excess absences may impact the participation grade.
3. Being attentive and an active participant in group activities and class discussions.
4. Respecting diversity in the classroom and treating everyone involved in the class in a civil manner.
5. Planning outside activities to avoid conflicts with the activities outlined in the syllabus.
6. Meeting all deadlines in the course for assignments, projects, etc.
7. Acknowledging the importance of clarity of expression in written and oral communication



Missing Exams. Make-up exams will be given for valid reasons (medical emergency, family emergency, university-scheduled events, religious observation, or class conflicts) consistent with University policy and the professor's discretion. If you do not have a valid reason for missing an exam, a zero grade may be assigned. The professor also has the option of not providing a make-up exam and re-weighting the remaining exam(s) accordingly.

Late Assignments. Late assignments are accepted for valid reasons (medical emergency, family emergency, university-scheduled events, religious observation, or class conflicts) consistent with University policy and the professor's discretion.

Anti-plagiarism Software. Written components of any assignment or project may be submitted to anti-plagiarism software to evaluate the originality of the work. Any students found to be submitting work that is not their own will be deemed in violation of the University's honor code discussed above.

Electronic Communication. FAU email will be used in this course for content delivery, assignments, and other communications. Accordingly, it is the student's responsibility to check their FAU email account for announcements, etc.

Pictures. Photographs of each student may be taken / used in connection with the course.



Tentative Course Calendar

Wk	Date	Topic
1	T 8/21	Introduction to the Course Dominant Approaches In Business Research
2	T 8/28	Theory Construction and Knowledge Development Knowledge Dissemination
3	T 9/4	Falsificationism and Other Theories of Science
4	T 9/11	Relativism and Interpretive Approaches
5	T 9/18	Rigor and Relevance
6	T 9/25	Introduction to Research Design
7	T 10/2	Statistical and Internal Validity
8	T 10/9	Construct and External Validity
9	T 10/16	Quasi-experimental Design
10	T 10/23	Time-series and Randomization
11	T 10/30	Evaluation of Scientific Knowledge and Research
12	T 11/6	Research Ethics and IRB Process
13	T 11/13	Disciplinary Readings / Critiques
14	T 11/20	Disciplinary Readings / Critiques
15	T 11/27	Disciplinary Readings / Critiques
16	R 11/29	Exam 10:30 am – 1:00 pm



Tentative Reading List

Week 1

Chalmers, Chapter 1, 2 and 4

Week 2

Karl E. Weick, "Theory Construction as Disciplined Imagination," *Academy of Management Review*, 14 (October), 1989, 516-531.

Robert K. Merton, "Three Fragments from a Sociologists' Notebooks: Establishing the Phenomenon, Specified Ignorance, and Strategic Research Materials," *Annual Review of Sociology*, 13, 1987, 1-28.

Robert I. Sutton and Barry M. Staw, "What Theory is Not," *Administrative Science Quarterly*, 40 (September), 1995, 371-384.

Karl E. Weick, "What Theory is Not, Theorizing Is," *Administrative Science Quarterly*, 40 (September), 1995, 385-390.

Chamberlin, T.C., "The Method of Multiple Working Hypotheses," *Science*, Vol. 148, May 7, 1965, 754-759.

John R. Platt, "Strong Inference," *Science*, Vol. 146, October 16, 1964, 347-353.

Rajan Varadarajan, "Editorial: Reflections on Research and Publishing," *Journal of Marketing*, 60 (October), 1996, pp. 3-6.

Week 3

Chalmers, Chs. 5-10

Larry Laudan, "Dissecting the Holistic Picture of Scientific Change," in *Science and Values: The Aims of Science and Their Role in Scientific Debate*, University of California Press, 1984, pp.67-102.

Week 4

Ernest Gellner, "Relativism and the Universals," in *Relativism and the Social Sciences*, Cambridge University Press, 1985, pp. 83-100.

Laurel Anderson Hudson and Julie L. Ozanne, "Alternative Ways of Seeking Knowledge in Consumer Research," *Journal of Consumer Research*, 14 (March), 1988, 508-521.



Allen S. Lee, "Integrating Positivist and Interpretive Approaches to Organizational Research," *Organization Science*, 2 (November), 1991, 342-365.

Week 5

Paul Shrivastava, "Rigor and Practical Usefulness of Research in Strategic Management," *Strategic Management Journal*, 8 (Jan-Feb), 1987, pp. 77-92

Lynda M. Applegate, "Rigor and Relevance in MIS Research-Introduction," *MIS Quarterly*, 23 (March), 1999, pp. 1-2

Izak Benbasat and Robert W. Zmud, "Empirical Research in Information Systems: The Practice of Relevance," *MIS Quarterly*, 23 (March), 1999, pp. 3-16

Lynda M. Applegate and John L. King, "Rigor and Relevance: Careers on the Line," *MIS Quarterly*, 23 (March), 1999, pp. 17-18

Thomas H. Davenport and M. Lynne Markus, "Rigor vs. Relevance Revisited: Response to Benbasat and Zmud," *MIS Quarterly*, 23 (March), 1999, pp. 19-23

Kalle Lyytinen, "Empirical Research in Information Systems: On the Relevance of Practice in Thinking of IS Research," *MIS Quarterly*, 23 (March), 1999, pp. 25-27

Allen S. Lee, "Rigor and Relevance in MIS Research: Beyond the Approach of Positivism Alone," *MIS Quarterly*, 23 (March), 1999, pp. 29-33.

Leisering, J, and L. Johnson, "Accounting Research: On the Relevance of Research to Practice," *Accounting Horizons* 8 (December), 1994, 74-79.

Moehrle, S., K. Andersen, F. Ayers, C. Bolt-Lee, R. Debreceny, M. Dugan, C. Hogan, M. Maher, and E. Plummer, "The Impact of Academic Accounting Research on Professional Practice: An Analysis by the AAA Research Impact Task Force," *Accounting Horizons* 23 (4), 2009, 11-456.

P. Rajan Varadarajan, "Musings on Relevance and Rigor of Scholarly Research in Marketing," *Journal of the Academy of Marketing Science*, 31 (4), 2003, pp. 368-376.

Week 6

Chalmers, Ch. 4, Shadish, Cook and Campbell, Ch. 1, Ch. 8

John W. Creswell, "Five Qualitative Traditions of Inquiry," in *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*, Sage Publications, 1998, pp. 47-72.

John W. Creswell, "Philosophical and Theoretical Frameworks," in *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*, Sage Publications, 1998, pp. 73-91.



Harris Cooper, "Introduction" (pp. 1-11) and "Problem Formulation Stage" (pp.12-39) in *Synthesizing Research: A Guide for Literature Reviews*, 3rd ed. Thousand Oaks, CA: SAGE Publications, 1998.

Week 7

Shadish, Cook and Campbell, Ch. 2

David Brinberg and Joseph E. McGrath, "Introduction," in *Validity and the Research Process*. Newbury Park, CA: SAGE Publications, 1985, pp. 13-28.

Anthony G. Greenwald, "Consequences of Prejudice Against the Null Hypothesis," *Psychological Bulletin*, 82 (1), 1975, 1-20.

Drew Western and Robert Rosenthal, "Quantifying Construct Validity: Two Simple Measures," *Journal of Personality and Social Psychology*, 84 (3), 2003, 608-618.

Paul W. Holland, "Statistics and Causal Inference," *Journal of the American Statistical Association*, 81 (December), 1986, 945-960.

Donald B. Rubin, "Statistics and Causal Inference: Comment: Which Ifs Have Causal Answers," *Journal of the American Statistical Association*, 81 (December), 1986, 945-960.

D. R. Cox, "Statistics and Causal Inference: Comment," *Journal of the American Statistical Association*, 81 (December), 1986, 963-964.

Clark Glymour, "Statistics and Causal Inference: Comment: Statistics and Metaphysics," *Journal of the American Statistical Association*, 81 (December), 1986, 964-966.

Clive Granger, "Statistics and Causal Inference: Comment," *Journal of the American Statistical Association*, 81 (December), 1986, 967-968.

Paul W. Holland, "Statistics and Causal Inference: Rejoinder," *Journal of the American Statistical Association*, 81 (December), 1986, 968-970.

Week 8

Shadish, Cook and Campbell, Ch. 3

Leonard Berkowitz and Edward Donnerstein, "External Validity is More Than Skin Deep: Some Answers to Criticisms of Laboratory Experiments," *American Psychologist*, 37 (March), 1982, 245-257.

Gail A. Fontenelle, Amanda Peek Phillips and David M. Lane, "Generalizing Across Stimuli as well as Subjects," *Journal of Applied Psychology*, 70 (1), 1985, 101-107.



Seymour Sudman, Monroe G. Sirken and Charles D. Cowan, "Sampling Rare and Elusive Populations," *Science*, 240 (May 20), 1988, 991-996.

Week 9

Shadish, Cook and Campbell, Chs. 4, 5

Harsha, P.D. and M.C. Knapp. 1990. The Use of Within- and Between-Subjects Experimental Design in Behavioral Accounting Research: A Methodological Note. *Behavioral Research in Accounting*

Week 10

Shadish, Cook and Campbell, Chs. 6, 8

Week 11

Shadish, Cook and Campbell, Chs. 9 (pp 292-311), 14

Anthony G. Greenwald, Anthony R. Pratkanis, Michael R. Leippe and Michael H. Baumgardner, "Under What Conditions Does Theory Obstruct Research Progress?" *Psychological Review*, 93 (2), 1986, 216-229.

Jeff Greenberg, Sheldon Solomon, Tom Pyszczynski and Lynne Steinberg, "A Reaction to Greenwald, Pratkanis, Leippe and Baumgardner: "Under What Conditions Does Theory Obstruct Research Progress?"" *Psychological Review*, 95 (4), 1988, 566-571.

Klaus Moser, Volker Gadenne and Jürgen Schröder, "Under What Conditions Does Confirmation Seeking Obstruct Scientific Progress?" *Psychological Review*, 95 (4), 1988, 572-574.

Anthony G. Greenwald and Anthony R. Pratkanis, "On the Use of "Theory" and the Usefulness of Theory," *Psychological Review*, 95 (4), 1988, 575-579.

William H. Cooper and Alan J. Richardson, "Unfair Comparisons," *Journal of Applied Psychology*, 71 (2), 1986, 179-184.

Week 12

Shadish, Cook and Campbell, Ch. 9 (pp 280-291)

Joan E. Sieber and Barbara Stanley, "Ethical and Professional Dimensions of Socially Sensitive Research," *American Psychologist*, 43 (1), 1988, 49-55.



Daniel R. Ilgen and Bradford S. Bell, "Informed Consent and Dual Purpose Research," *American Psychologist*, 56 (December), 2001, 1177.

Meyer, M., and D. McMahon, "An Examination of Ethical Research Conduct by Experienced and Novice Accounting Academics," *Issues in Accounting Education* 19 (4), 2004, 413-442.

Bailey, C., J. Hasselback, and J. Karcher. 2001. Research Misconduct in Accounting Literature: A Survey of the Most Prolific Researchers' Actions and Beliefs. *Abacus* 37: 26-54.

Enroll in IRBNET.org.

Go to http://www.fau.edu/research/researchint/citi_training.php#human

Complete the CITI training for the social and behavioral research investigators. This takes about 2-3 hours to complete. Bring a copy of your completion certificate to class.



Florida Atlantic University COLLEGE OF BUSINESS

Selected University and College Policies

School of Accounting Policy. You are responsible for School of Accounting policies at <http://business.fau.edu/departments/accounting/school-of-accounting-policies/index.aspx>. ***These policies are considered to be an integral part of this syllabus.***

Code of Academic Integrity Policy Statement. Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

Disability Policy Statement. In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) – in Boca Raton, SU 133, (561) 297-3880; in Davie, MOD 1, (954) 236-1222; in Jupiter, SR 117, (561) 799-8585; or, at the Treasure Coast, CO 128, (772) 873-3305 – and follow all OSD procedures.

Religious Accommodation Policy Statement. In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments. For further information, please see Academic Policies and Regulations.

University Approved Absence Policy Statement. In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is the student's responsibility to notify the course instructor at least one week prior to missing any course assignment.

College of Business Minimum Grade Policy Statement. The minimum grade for College of Business requirements is a "C". This includes all courses that are a part of the pre-business foundation, business core, and major program. In addition, courses that are used to satisfy the university's Writing Across the Curriculum and Gordon Rule math requirements also have a minimum grade requirement of a "C". Course syllabi give individualized information about grading as it pertains to the individual classes.



Incomplete Grade Policy Statement. A student who is passing a course, but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete ("I"). The assignment of the "I" grade is at the discretion of the instructor, but is allowed only if the student is passing the course.

The specific time required to make up an incomplete grade is at the discretion of the instructor. However, the College of Business policy on the resolution of incomplete grades requires that all work required to satisfy an incomplete ("I") grade must be completed within a period of time not exceeding one calendar year from the assignment of the incomplete grade. After one calendar year, the incomplete grade automatically becomes a failing ("F") grade.

Withdrawals. Any student who decides to drop is responsible for completing the proper paper work required to withdraw from the course.

Grade Appeal Process. A student may request a review of the final course grade when s/he believes that one of the following conditions apply:

- There was a computational or recording error in the grading.
- Non-academic criteria were applied in the grading process.
- There was a gross violation of the instructor's own grading system.

The procedures for a grade appeal may be found in Chapter 4 of the University Regulations.

Disruptive Behavior Policy Statement Disruptive behavior is defined in the FAU Student Code of Conduct as "... activities which interfere with the educational mission within classroom." Students who behave in the classroom such that the educational experiences of other students and/or the instructor's course objectives are disrupted are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include, but is not limited to: non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.

Faculty Rights and Responsibilities

Florida Atlantic University respects the right of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions which do not impede their exercise. To ensure these rights, faculty members have the prerogative:

- To establish and implement academic standards



Florida Atlantic University
COLLEGE OF BUSINESS

- To establish and enforce reasonable behavior standards in each class
- To refer disciplinary action to those students whose behavior may be judged to be disruptive under the Student Code of Conduct

Appendix A
Research Critique and Related Presentation

For the assigned article:

- (1) Identify the main research question and summarize the paper's main findings.
- (2) Prepare visual presentations of the research using both Libby boxes and X's and O's
- (3) Elaborate on the academic and practical significance of studying the specific phenomenon or problem, including (a) what can be gained from additional knowledge, (b) who are the constituencies that would benefit from such knowledge, and (c) how would these constituencies benefit from such knowledge. In other words, what is the research's contribution?
- (4) Identify and discuss the theoretical explanations offered in the literature as cited by the author(s) to explain and/or predict the phenomenon or problem? Elaborate on any alternative explanations.
- (5) Critique the conceptual model explicit or implicit in the paper in terms of how it extends prior research and the theory or theoretical frameworks underpinning the research.
- (6) Critique the research design and method used in the paper in terms of its appropriateness, validity issues and how they were addressed, and validity issues that remain in the paper.
- (7) If you were to conduct this research, what would you do different? That is, what would be your research design?