Managing Complexity (MIS 382N.5)
Spring 2011 Syllabus and Course Schedule

Unique number: 03830
Meeting time: MW 8:00 – 9:15 a.m.
Meeting location: GSB 3.104

Professor: Reuben R. McDaniel, Jr.
Office: CBA 6.454
Office phone: 512.471.9451
Cell phone: 512.587.4862
Office fax: 512.471.0587
Email: reuben.mcdaniel@mccombs.utexas.edu
Office Hours: Tuesdays 9:00 a.m. - 12:00 noon

TA: TBA
Email: TBA

Description:

Modern organizations can be understood as complex adaptive systems. This understanding leads us to new insights about managing these systems, particularly the role of information and information systems in this task. The purpose of this course is to explore these new insights. We will discuss salient management implications of complex adaptive system theories with particular attention to specific prescriptions for information systems.

Basic characteristics presented to managers by the fact that organizations are complex adaptive systems include the fundamental unknowability and unpredictability of the world, the importance of nonlinear relationships in defining reality, and the role of self-organization, emergence, and co-evolution in organizational dynamics. We will emphasize sensemaking, learning, improvisation, thinking about the future, and designing and managing relationships as substitutes for traditional activities of command, control, prediction and planning when managing complex adaptive systems. We will also discuss the role of leadership in complex adaptive systems. Managerial strategies that depend on a fairly detailed knowledge of the present situation as well as the ability to make reasonable forecasts of a future situation are less useful than in the past. Fortunately, complexity science offers some ways of better understanding these uncertain situations.

The course is designed for advanced MBA students, particularly those interested in consulting and/or problem solving roles in complex organizations and for Ph.D. students who are exploring new frameworks for investigation of organizational phenomenon. There are no prerequisites other than graduate standing but this course is not recommended for first year master's degree students.

Course Expectations:

The primary source documents are a set of readings that enables us to explore basic concepts of complex adaptive systems theories and their usefulness in understanding organizations. Readings explore key managerial approaches suggested by these theories. Course readings are available from the University Duplicating Service in the GSB Distribution Center. Additional readings may be distributed during the semester.

Each student is required to complete a major paper. The paper may be on any topic of the student's choosing; however, it must demonstrate to the instructor that the student understands the material of the course. Class discussion and readings through the material on relationships should be covered in the final paper. In order to receive an A on this assignment, it should include some ideas about complex adaptive systems and their management that extend beyond the material covered in the course. The length of the paper is dependent upon the topic chosen and the student's writing skill. In the past, papers have been about 25-40 pages in length. The paper is due at the beginning of class on **Wednesday, May 4, 2011.** *The major paper will count for 50% of the final grade.*

Each student is required to prepare a written discussion of two articles – one from the first section of the course and one from the second. The papers should not summarize the article. Rather, they should show how the article relates to other articles assigned for this course and to other scholarly material the student may be familiar with. You may use information from your previous life experiences to enhance the discussion. The purpose of the discussion is to put the chosen article in a rich framework and to facilitate the understanding of the article. These discussion papers should be no more than 7 pages (doubled spaced) and should be emailed to the class and the instructor, using Blackboard, **24 hours before** the class period that the chosen article is assigned. The papers are graded on a scale of 8-13 and 1 point will be deducted from papers that are late. . *Discussion papers together will count for 25% of the final grade.*

Students will be assigned two readings from the readings listed in the syllabus - one from the set of readings marked "A" and one from the set of readings marked "B". In order to facilitate the assignment of readings, each student is asked to submit to the course TA a choice of two "A" papers and two "B" papers that they would like to review. Email these choices to course TA (email address to be provided) before midnight **Tuesday, January 25**. Every effort will be made to accommodate your choices. We plan to email assignments by the end of the day, Friday, January 28.

Class discussions will be based on the assigned readings and on the issues that students raise in written discussions of the readings. Attendance is required and you are expected to read all required readings before the class in which they are to be discussed. If you must miss a class, please be sure to notify the instructor by email before the class that you miss. Remember, when you miss a class, assigned work must be turned in before the class missed and your participation expectations for that day must be made up in subsequent classes. *Class participation will count for 25% of the final grade.*

McCombs Classroom Professionalism Policy

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas MBA experience hinges on this.

Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects.

The Texas MBA classroom experience is enhanced when:

- **Students arrive on time.** On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.
- **Students display their name cards.** This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions.
- **Students minimize unscheduled personal breaks.** The learning environment improves when disruptions are limited.
- **Students are fully prepared for each class.** Much of the learning in the Texas MBA program takes place during classroom discussions. When students are not prepared they cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.
- **Students respect the views and opinions of their colleagues.** Disagreement and debate are encouraged. Intolerance for the views of others is unacceptable.
- **Laptops are closed and put away.** When students are surfing the web, responding to e-mail, instant messaging each other, and otherwise not devoting their full attention to the topic at hand they are doing themselves and their peers a major disservice.
- **Phones and wireless devices are turned off.** We've all heard the annoying ringing in the middle of a meeting. Not only is it not professional, it cuts off the flow of discussion when the search for the offender begins. When a true need to communicate with someone outside of class exists (e.g., for some medical need) please inform the professor prior to class.

Academic Dishonesty

I have no tolerance for acts of academic dishonesty. Such acts damage the reputation of the school and the degree and demean the honest efforts of the majority of students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment.

The responsibilities for both students and faculty with regard to the Honor System are described on http://mba.mccombs.utexas.edu/students/academics/honor/index.asp. As the instructor for this course, I agree to observe all the faculty responsibilities described therein. During Orientation, you signed the Honor Code Pledge. In doing so, you agreed to observe all of the student responsibilities of the Honor Code. If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

Students with Disabilities

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. The office of Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at http://deanofstudents.utexas.edu/ssd/index.php. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

Class Schedule and Reading Assignments

You are required to read 2-4 articles for each class period. The readings should be done before the class assigned. For several of the articles, your classmates will have prepared a discussion paper which you should read before coming to class. Your goal should be to come to class prepared to discuss the topic with the required readings as a starting place for discussion. You are encouraged to use any material that you have access to in preparing for class discussion. There are numerous sources on the Internet for information about complexity theory. The reading packet is intended as a start, not as the end of insights into the topic. Use your imagination and your skills to enhance your sources of knowledge. Share your discoveries with the class so that we can all enjoy the fruits of your labor.

Wednesday, January 19, 2011

Introduction

- Mintzberg, Henry (1996). Ten ideas designed to rile everyone who cares about management. Harvard Business Review, 6, 61-97.
- Robbins, Stever (2006). Thinking outside your beliefs. Working Knowledge, found online at http://hbswk.hbs.edu/item.jhtml?id=5309&t=srobbins. April 24, 2006.

Monday, January 24, 2011

Overview of Complex Adaptive Systems

- McDaniel, Reuben R., Jr. (2004). Chaos and Complexity in a Bioterrorism Future. In John D. Blair, Myron D. Fottler, & Albert C. Zapantam (Eds.). Advances in Health Care Management, Vol. 4 (pp.119-139). Oxford, UK: Elsevier, Ltd.
- Arthur, W. Brian (1999). Complexity and the economy. Science, April '99, Vol. 284, 107-109.
- Binder, Philippe M. (2008). Theories of almost everything. Nature, 455(16), 884-885.

Wednesday, January 26, 2011

Complex Adaptive Systems

A. Allen, Peter M., Strathern, Mark, & Baldwin, James S. (2005). The evolutionary complexity of social economic systems: The inevitability of uncertainty and surprise. In Reuben R. McDaniel, Jr. & Dean J. Driebe (Eds.). Uncertainty and Surprise in Complex Systems (pp. 31-50). Springer-Verlag, Berlin.

- McDaniel, Reuben R., Jr. (2007). Management Strategies for Complex Adaptive Systems: Sensemaking, Learning, and Improvisation. In Performance Improvement Quarterly, Vol. 20 (pp.21-42).

Monday, January 31, 2011

The Science of Complexity

Presentation by Dr. Linda Reichl, Professor of Physics and Director of The Center for Complex Quantum Systems, The University of Texas at Austin.

A. Reichl, Linda E. (2005). Fundamental "uncertainty" in science. In Reuben R. McDaniel, Jr. & Dean J. Driebe (Eds.). Uncertainty and Surprise in Complex Systems (pp. 71-76). Springer-Verlag, Berlin.

- Prigogine, Ilya (1997). The rediscovery of value and the opening of economics. In Architecture and Design in America (pp. 1-7). The University of Texas Press, Austin.

Wednesday, February 2, 2011

Complex Adaptive Systems

A. Dahlin, K.B., Weingart, L.R., & Hinds, P.J. (2006). Team diversity and information use. Academy of Management Journal, 48(6), 1101-1123.

- Overman, Sam E. (1996). The new sciences of administration: Chaos and quantum theory. Public Administration Review, 56(3), 487-491.

- Watts, Duncan J. (2003). Innovation, adaptation, & recovery. In Six Degrees. W.W. Norton & Company, New York, New York, 253-289.

Monday, February 7, 2011

Complex Adaptive Systems

A. Brown, John S. & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. Organization Science, 2: 40-57.

- Lichtenstein, Benyamin M. Bergmann (2000). Emergence as a process of self-organizing. Journal of Organizational Change Management, 13(6), 526-544

Wednesday, February 9, 2011

Complex Adaptive Systems

A. Shelling, Thomas (2008). Sorting and mixing: Race and sex. In Mark A. Bedau, & Paul Humphreys (Eds.). Emergence: Contemporary Readings in Philosophy and Science (pp. 235-248). MIT Press, Cambridge, Massachusetts.

- Bedau, Mark A., & Humphreys, Paul (2008). Introduction. In Mark A. Bedau, & Paul Humphreys (Eds.). Emergence: Contemporary Readings in Philosophy and Science. MIT Press, Cambridge, Massachusetts.

Monday, February 14, 2011

Complex Adaptive Systems

A. Rivkin, J. W., & Siggelkow, N. (2002). Organizational sticking points on NK landscapes. Complexity, 7 (5), 31-43.

- Beinhocker, Eric D. (1999). Robust adaptive strategies. Sloan Management Review, 3, 95-106.

Wednesday, February 16, 2011

Complex Adaptive Systems

A. Levinthal, Daniel A., & Warglien, Massimo (1999). Landscape design: Designing for local action in complex worlds. Organization Science, 10(3), 342-357.

- Elena, Santiago F., & Sanjuan, Rafael (2003). Climb every mountain? Science, 302, 2074-2075.

- Gavetti, Giovanni, Levinthal, Daniel A., & Rivkin, Jan W. (2005). Strategy making in novel and complex worlds: The power or analogy. Strategic Management Journal, 26, 691-712.

Monday, February 21, 2011

Complex Adaptive Systems

A. Cilliers, P. (2001). Boundaries, hierarchies and networks in complex systems. International Journal of Innovation Management, 5(2), 135-147.

- Allen, Peter M. & Varga, Liz (2007). Complexity: The co-evolution of epistemology, axiology and ontology. Nonlinear Dynamics, Psychology, and Life Sciences, 11(1), 19-50.

Wednesday, February 23, 2011

A Model of Complex Adaptive Systems

Wynton Marsalis Video

- McDaniel, Reuben R., Jr., & Driebe, Dean J. (2001). Complexity science and health care management. Advances in Health Care Management, 2, 11-36.

Monday, February 28, 2011

Complex Adaptive Systems Theory in Action

Guest Speaker: TBA

- Macguire, Steve, McKelvey, Bill, Mirabeau, Laurent, & Öztas, Nail (2006). Complexity science and organization studies. In Stewart R. Clegg, et al., (Eds.). The SAGE Handbook of Organization Studies, 2nd edition, (pp. 165- 214). Sage Publication Ltd.: Thousand Oaks, California.

Wednesday, March 2, 2011

Sensemaking

Firestorm Video

B. Weick, Karl E. (1993). The collapse of sense making in organizations: The Mann Gulch Disaster. Administrative Science Quarterly, 12(38), 628-652.

Monday, March 7, 2011 (Plus week)

Sensemaking

B. Weick, Karl E., & Roberts, Karlene H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. Administrative Science Quarterly, 9(38), 357-381.

- Weick, Karl E. (1985). Cosmos vs. chaos: Sense and nonsense in electronic contexts. Organizational Dynamics, 14(2), 51-64.

- Thomas, James B. & McDaniel, Reuben R., Jr. (1990). Interpreting strategic issues: Effects of strategy and the information-processing structure of top management teams. The Academy of Management Journal, 33(2), 286-306.

Wednesday, March 9, 2011 (Plus week)

To Be Announced

Spring Break March 14 – March 18

Monday, March 21, 2011

Learning

B. March, James G., Sproull, Less S., & Tasmuz, Michal (1991). Learning from samples of one or fewer. Organization Science, 2(1), 1-13.

- Liebeskind, Julia Porter, Lumerman, A., Oliver, Lynne Zucker, & Brewer, Marilynn (1996). Social networks, learning and flexibility: Sourcing scientific knowledge in new biotechnology firms. Organization Science, 7(4), 428-443.

Wednesday, March 23, 2011

Learning

B. Tucker, Anita L., & Edmondson, Amy C. (2003). Why hospitals don't learn from failures: Organizational and psychological dynamics that inhibit system change. California Management Review, 45(2), 55-72.

- Weick, Karl E. & Sutcliffe, Kathleen M. (2003). Hospitals as cultures of entrapment: A re-analysis of the Bristol Royal Infirmary. California Management Review, 45(2), 73-85

Monday, March 28, 2011

Learning

B. Edmondson, Amy C. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. Journal of Management Studies, 40(6), 1419-1452.

- Tucker, Anita L., Nembhard, Ingrid M., & Edmondson, Amy C. (2007). Implementing new practices: An empirical study of organizational learning in hospital intensive care units. Management Science, 53(6), 894-907.

Wednesday, March 30, 2011

Improvising

B. Barrett, Frank J. (1998). Creativity and improvisation in jazz and organizations: implications for organizational learning. Organizational Science, 9(5), 605-622.

- Weick, Karl E. (1998). Improvisation as a mindset for organizational analysis. Organizational Science, 9(5), 543-555.

Monday, April 4, 2011

Improvising

B. Crossan, Mary M., White, Roderick, Lane, Henry W., & Klus, Leo (1996). The improvising organization: Where planning meets opportunity. Organizational Dynamics, 2, 20-35.

- Orlikowski, Wanda J. (1996). Improvising organizational transformation over time: A situated change perspective. Information Systems Research, 7(1), 63-92.

Wednesday, April 6, 2011

Thinking about the Future

Lecture on Formal Planning and Formal Control

B. Eisenhardt, Kathleen M. (1990). Speed and strategic choice: How managers accelerate decision making. California Management Review, 2, 39-54.

- McDaniel, Reuben R., Jr., Jordan, Michelle E., & Fleeman, Bridgette F. (2003). Surprise, surprise, surprise! A complexity science view of the unexpected. Health Care Management Review, 28(3), 266-278.

Monday, April 11, 2011

Thinking about the Future

B. Stone, Melissa Middleton, & Brush, Candida Greer (1996). Planning in ambiguous contexts: The dilemma of meeting needs for commitment and demands for legitimacy. Strategic Management Journal, 17, 633-652.

- Hedberg, Bo, & Jonsson, Sten (1978). Designing semi-confusing information systems for organizations in changing environments. Accounting, Organizations and Society, 3(3), 47-64.

- Cilliers, Paul (2006). On the importance of a certain slowness. E:CO 8(3), 105-112.

Wednesday, April 13, 2011

Designing

B. Pfeffer, Jeffrey (1994). Competitive advantage through people. California Management Review, 1(5).

- Simon, Herbert A. (1987). Making management decisions: the role of intuition and emotion. Academy of Management Executive, 57-64.

Monday, April 18, 2011

Designing

B. Brown, Shona L., & Eisenhardt, Kathleen M. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. Administrative Science Quarterly, 42, 1-34.

- McDaniel, Reuben R., & Walls, Michelle E. (1997). Diversity as a management strategy for organizations: A view through the lenses of chaos and quantum theories. Journal of Management Inquiry, 6(4), 371-383.

Wednesday, April 20, 2011

Relationships

B. Ashmos, Donde P., Huonker, John W., & McDaniel, Jr., Reuben R. (1998). Participation as a complicating mechanism: The effect of clinical professional and middle manager participation on hospital performance. Health Care Management Review, 23(4), 7-20.

1. Jordan, Michelle E., Lanham, Holly J., Crabtree, Benjamin F. et al. (2009). The role of conversation in health care interventions: Enabling sensemaking and learning. Implementation Science, 4(15).

Monday, April 25, 2011

Relationships

B. Lanham, H.J., McDaniel, R.R. Jr., Crabtree, B.F., Miller, W.L., Stange, K.C., Tallia, A.F., & Nutting, P.A. (2009). How improving practice relationships among clinicians and nonclinicians can improve quality in primary care. Joint Commission Journal on Quality and Patient Safety, in press. *To be distributed during the semester*.

- Gratton, Lynda (2006). Connections and conversations provide the fuel for innovation. Financial Times, March 30, 2006.

- Kelleher, Herb (1997). A culture of commitment. Leader to Leader, 2, 20-24.

Wednesday, April 27, 2011

Leadership

- Weick, Karl E. (2001). Leadership as the legitimation of doubt. In W. Bennis, (Ed.). The Future of Leadership. San Francisco: Jossey-Bass.

- Lichtenstein, Benjamin B. et al. (2006). Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. E:CO, 8(4), 2-12.

Monday, May 2, 2011

Review

Wednesday, May 4, 2011

Review

*****Paper Due*****