**COURSE: Experimental Design and Methodology**

**PROFESSOR: Barbara B. Flynn**

**DEPARTAMENT: POI**

FACULTY INFORMATION

Barbara B. Flynn received a D.B.A. in operations management from Indiana University, a M.B.A. from Marquette University and a B.A. in psychology from Ripon College. She is currently a visiting professor of operations management at Fundação Getulio Vargas and the Richard M. and Myra Louise Buskirk Professor of Manufacturing Management at Indiana University. Her previous academic appointments have been at Wake Forest University, Iowa State University and Louisiana State University. She is a Fellow of the Decision Sciences Institute and recipient of the Distinguished Service Award from the Decision Sciences Institute and the Distinguished Scholar Award from the Operations Management division of the Academy of Management. Professor Flynn has received over $1 million in research funding from the National Science Foundation, the U.S. Department of Education and the Center for Innovation Management Studies. She is director of the High Performance Manufacturing global research group, which studies the relationship between manufacturing practices and performance in various organizational and national cultures. Professor Flynn is Co-Editor-in-Chief of *Journal of Supply Chain Management,* former Editor-in-Chief and founding editor of *Decision Sciences Journal of Innovative Education*,and former Editor-in-Chief of *Quality Management Journal.* She is a past President of the Decision Sciences Institute and has held leadership positions within the Decision Sciences Institute, Academy of Management, Institute for Management Sciences (TIMS) and APICS.

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COURSE DESCRIPTION

This course will develop participants’ ability to plan, develop and publish empirical research in Operations Management and related areas, with a particular focus on designing, executing and analyzing scenario experiments. Participants will receive support and feedback for developing their own scenario experiment into publication quality materials. At the end of the course, each participant will present a proposal for a scenario experiment research project and receive feedback from the other participants, as well as submitting a written research project.

A typical class session will consist of discussing technical approaches to designing and applying scenario experiments to operations and supply chain problems, providing feedback on proposal sections previously developed and participating in a discussion that constructively critiques a published scenario experiment article. The course will also focus on success strategies for publishing empirical research of all types in high quality academic journals. Participants are encouraged to bring their own research-in-progress for discussion, advice and development.

The primary focus of the course will be development of a research paper that uses a scenario experiment. Participants will develop a scenario experiment on the thopc of their choice, focusing on one section every three weeks. They will receive “reviewers’ comments” on each section within a week and have the opportunity to revise the sections before submission of the final project at the end of the course. The final research paper should include a separate document outlining how all of the reviewers’ comments have been addressed.

Participants will turn in an article critique prior to the beginning of class each day. Please assess the assigned article to the best of your ability, striving especially to incorporate concepts that we have discussed during class. You will find Chapter 12 in the Huff book especially helpful as you do this. The critiques will be discussed during class.

The course is targeted at graduate students who are in the process of developing their own research projects. The typical student is developing his or her PhD. project. Advanced masters degree students with some familiarity with research methods are also encouraged to participate. Researchers that have already completed their PhDs, but would like to develop their ability to design and execute scenario experiment research to publish internationally will also benefit from this course.

GRADING AND EVALUATION

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| Method section | 10% |
| Results section | 10% |
| Discussion and literature reiew sections | 10% |
| Final research project | 20% |
| Article critiques | 10% |
| Class discussion | 20% |
| Final exam | 20% |

TEXTBOOKs

Huff, Anne S., 2009. *Designing Research for Publication.* Sage Publications, Inc. ISBN #1-4129-4015-3.

The following are all Sage “little green books,” very short, inexpensive books that provide excellent reference material on a specific methodological topic. They can be purchased directly from Sage using the following link: <http://srmo.sagepub.com/browse?doctype=qass&pageSize=20&sortorder=TITLE>.

* Auspurg, Katrin and Hinz, Thomas, 2015. *Factorial Survey Experiments.* Sage Publications, Inc., Quantitative Applications in the Social Sciences, #175. ISBN: 9781452274188.
* Lewin, Irwin P., 1999. *Relating Statistics and Experimental Design: An Introduction.* Sage Publications, Inc., Quantitative Applications in the Social Sciences, #125. ISBN: 0761914722.
* Spector, P.E., 1992. *Summated Rating Scale Construction: An Introduction*. Sage Publications, Inc., Quantitative Applications in the Social Sciences, #82. ISBN: 9780803943414.

Articles

*Background Articles:*

Aguinis, Herman and Bradley, Kyle J., 2014. Best practice recommendations for designing and implementing experimental vignette methodology studies. *Organizational Research Methods, 17*(4), 351-371.

Farh, Jiing-Lih, Cannella, Jr., Albert and Lee Cynthia, 2006. Approaches to scale development in Chinese management research. *Management and Organization Review, 2*(3),

Rungtusanatham, M., Wallin, Cynthia and Eckerd, Stephanie, 2011. The vignette in a scenario-based role-playing experiment. *Journal of Supply Chain Management, 47*(3), 9-16.

*Critique Articles:*

Hora, M. and Klassen, Robert D., 2013. Learning from others’ misfortune: Factors influencing knowledge acquisition to reduce operational risk. *Journal of Operations Management*, *31*, 52-61.

Huang, Xiaowen, Gattiker, Thomas F. and Schwarz, Joshua L., 2008. Interpersonal trust formation during the supplier selection process: the role of the communication channel. *Journal of Supply Chain Management*, *44*(3), 53-75.

Hui, M.K, Zhao, X., Fan, X. & Au, K., When does the service process matter? A test of two competing theories. *Journal of Consumer Research,* 2004, *31,* 465-475.

Mantel, S.P., Tatikonda, M.V. & Liao, Y., A behavioral study of supply managers’ decision-making: Factors influencing make versus buy evaluation. *Journal of Operations Management,* 2006, *24,* 822-838.

Thomas, Rodney, W., Fugate, Brian S. and Koukova, Nevena T., 2011. Coping with time pressure and knowledge sharing in buyer-supplier relationships. *Journal of Supply Chain Management, 47*(3), 22-42.

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| **Date** | **Topic** | **Preparation** | **Critique Article**  **(due prior to the start of class)** |
| 10/31 | Scenario Experiments | * Rungtusanatham, et al., 2011 * Aguinis & Bradley, 2014 * *Factorial Survey Experiments* * Huff, Chapters 1, 2 and 12 | Hora & Klassen, 2013 |
| 11/1 | Developing the Method Section | Huang, et al., 2008 |
| 11/16 | Developing the Results Section | * *Relating Statistics and Experimental Design* * Huff, Chapters 5, 6 and 9 | Hui, et al., 2004 |
| 12/12 | Developing the Discussion Section | * *Summared Rating Scale Construction: An Introduction* * Farh, et al., 2006 * Huff, Chapters 3, 8, 10 and 13 | Mantel, et al., 2006 |
| 12/13 | Developing the Literature Review and Introduction Sections | Thomas, et al., 2011 |
| 12/14 | Research Presentations and Final Exam |  |  |

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| **Research Project Section** | **Due Date** |
| Method | November 8 |
| Results | November 23 |
| Discussion | December 20 |
| Literature Review and Introduction | December 20 |
| Final Project | December 31 |