

# USING SPREADSHEET ENGINEERING TO DEVELOP TECHNICAL EXPERTISE AND ANALYTICAL ABILITY IN BUSINESS UNDERGRADUATES

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## ABSTRACT

Information technologies (IT) such as spreadsheets, databases, and web-based applications are fundamental to modern business operations. Further, the ability to access and extract value from data is increasingly important to all areas of business [2]. Future managers must have both the technical expertise and analytical ability to leverage these technologies for effective decision making and communication. Thus, development of analytical thinking skills and the ability to employ current IT to solve business and management problems is a primary objective of undergraduate business education [1].

The author will present a case study describing the redesign of the introductory information systems course in Penn State's Smeal College of Business undertaken in the summer of 2014. The goal of the redesign was to ensure consistency of content across sections, to elevate the spreadsheet (Microsoft Excel) skills of our undergraduates to a level competitive with peer institutions, and to develop students' analytical skills. The presentation will explore the pedagogical and instructional challenges of the redesign; the methods, tools and techniques we developed or incorporated to address these challenges; the benefits of the course redesign and ongoing opportunities for improvement and further development. Examples of some of the pedagogical challenges addressed in the redesign include:

- Developing content for a student population with highly variant preexisting knowledge and skills.
- Using applied assessments structured around a real-world problem to assess students' mastery of the material.
- Developing instructional strategies for teaching the content in large section classes.

This presentation will be of interest to faculty from both business and other fields seeking ways to deliver application-centric learning with an emphasis on problem solving and analytical thinking at their own institutions.

## REFERENCES

- [1] AACSB International. *Eligibility Procedures and Accreditation Standards for Business Accreditation*. 2013 [cited 2015 9/1/2015]; Available from: <http://www.aacsb.edu/~media/AACSB/Docs/Accreditation/Standards/2013-bus-standards-update-jan2015.ashx>.
- [2] Shah, S., A. Horne, and J. Capellá, *Good Data Won't Guarantee Good Decisions*. *Harvard Business Review*, 2012. 90(4), 23-25.