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Morteza Shafii-Mousavi* (mshafii@iusb.edu), Mathematical Sciences, Indiana University South Bend, P. O. Box 7111, South Bend, IN 46634-7111. *Spreadsheet-based Modeling and Applications*.

The paper describes Spreadsheet Modeling and Software demos used in teaching Mathematical Modeling courses offered for math, science, and education majors. Courses teach the concepts and methods of mathematics as aids to understanding and solving problems arising in the life, social sciences, and business. Throughout each course, I use software and adopt a spreadsheet-based approach to the modeling as tools to facilitate the study, implementation, and evaluation of models. Student projects are significant parts of the courses. Each project is a realistic case of a complex situation. Spreadsheet modeling demos allows students to think through complex problems, identify decision variables, write constraint equations, analyze large data sets, utilize math and statistical functions, perform tedious computations, write reports, and prepare presentation materials. The paper emphasizes how I teach by examples and adopt a practical spreadsheet-based approach to the modeling of a wide variety of problems from finance, optimization, and operations; how it fits into the courses; the affect it has had on student attitudes toward mathematics; how it puts the entire problem solving approach within the capability of all students; and a summary of assessment techniques employed in the courses. (Received July 24, 2007)