

An Introduction to Scientific Research: Modeling with Maple

Doreen De Leon

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Abstract

This talk discusses my experience with a Research Experience for Undergraduates (REU) one-semester course. The main purpose of this course was to introduce students to scientific research using mathematical modeling, while teaching them some of the latest computer software tools. The idea was to lead the students through the steps of selecting a topic of interest, collecting the background information and data, and using tools such as Maple, LaTeX, and PowerPoint to analyze the data and present results. In order to illustrate the development of a mathematical model from first principles, material was presented showing the development of population models. Additionally, topics related to working with data sets and curve fitting was explored.