Mathematical models are used in the natural sciences (such as physics, biology, earth science, and meteorology), engineering disciplines (e.g., computer science, systems engineering, operations research, and industrial engineering), and in the social sciences (such as business, economics, psychology, sociology, political science, and social networks). Our goal is to offer competent, confident problem solvers for the twenty-first century. We suggest the books listed in the reference section to become familiar with many more modeling forms. 1.2 Background 1.2.1 Overview and Process of Mathematical Modeling Bender (2000, pp. 1â€“8) first introduced a process for modeling. He highlighted the following: formulate the model, outline the model, ask if it is useful, and test the model. The need for mathematical modeling (MM) courses and consideration of the educational impact of computer-based technology environments merit special attention. This book contains the proceeding of the NATO Advanced Research Workshop held on this theme in July 1993. We have left the industrial age behind and have entered the information age. Finite Element Method Fluid Flow Heat Transfer Mathematical Modelling algebraische Software engineering education mathematics mathematische Modellierung model modeling. Editors and affiliations. YaÅŸar Ersoy. Considering the significance of mathematical modelling in engineering design, we are committed to circulating the new developments in engineering science, and solve engineering problems with the most advanced mathematical and computer tools. Therefore, we welcome original papers from scientists, engineers and technicians around the world, which focus on the design and application of mathematical models for engineering problems in mechanics, energy, civil, electrical, material, computer and industrial engineering, to name but a few. The papers should further our understanding of the said subject.