

## TEACHER VERSION <sup>1</sup>

### Name of Scenario

Full Name - First and Last

Department Affiliation

School or Corporate Affiliation

City ST Zip or Mail Code COUNTRY

Email Address

**Abstract:** Offer an abstract which describes what the students will do and learn, including technical descriptions of mathematics, area of application, and outcomes expected for the scenario. This should help the teacher decide if the material is suitable for a given class. This will appear in Teacher Version only.

**Keywords:** Enter all words that could be considered key, to include words as general as differential equations or as specific as kinetics. This list is to have no more than five keywords. These will serve as tags for colleagues to use in searching SIMIODE for location of material. The Editor may suggest/change/add/delete some for more refinement as necessary.

**Tags:** Here you can enter a wider set of words which serve as tags (as do keywords) in the SIMIODE web site. Keep this list to ten words. The Editor may suggest/change/add/delete some for more refinement as necessary.

### STATEMENT

This is the STATEMENT of the scenario for the student, with pointers to data sets, supplementary files, videos, etc. for student consumption. It should have clear statements, instructions, hints, necessary materials and possible reference to original source material, but not to material which “gives away” a solution. E.g., if there is historical material cited then that should be given in a set of references [1].

<sup>1</sup>DELETE THIS FOOTNOTE BEFORE SUBMISSION. In the T<sub>E</sub>X source code there is a toggle/option to produce a Teacher Version or a Student Version by “carving” out with `\teacher{}` that material which should only appear in the Teacher version. See the source code.

The convention in naming scenarios - x-y-NoSpacesInName-StudentVersion or x-y-NoSpacesInName-TeacherVersion - is found in Table 1. The x-y designators will be added by the Editor upon acceptance.

Audience	Name	Comment
Student	x-y-NameScenario-StudentVersion	x-y- stands for topic or unit (x) and number in that topic or unit (y). NameScenario is a short merged with no spaces two to four word descriptor extracted from the larger title.
Teacher	x-y-NameScenario-TeacherVersion	x-y- stands for topic or unit (x) and Number in that topic or unit (y).
Teacher	x-y-NameScenario-Mma-TeacherVersion	Here Mma is a three or four letter abbreviation, in this case for Mathematica file, as an example of supplementary material. Others would include Map for Maple, MatL for MatLab, EXC for EXCEL, etc.
Student	x-y-NameScenario-Data-StudentVersion	Here Data means this is a data file, in this case for Student, otherwise for Teacher

**Table 1.** This is the convention for naming scenarios. The topic or unit (x) will be assigned by the Editor as will the number (y) in that topic or unit.

x refers to the Chapter (x = 1 for One, x = 1a, for OneA, x = 2 for Two, x = 3 for Three, etc.) and y refers to the entry or sequence number (just a counter, no meaning) in the more or less Table of Contents of a traditional differential equation text as shown below.

Modeling One - First Order Differential Equations

Modeling OneA - Numerically Solving Differential Equations

Modeling Two - Limited Growth Models

Modeling Three - Second Order Homogeneous Differential Equation Models

Modeling Four - Second Order NonHomogeneous Differential Equation Models

Modeling Five - Linear Systems of Differential Equation Models

Modeling Six - NonLinear Systems of Differential Equation Models

Modeling Seven - Changing the Venue for Solution Success - Laplace Transforms

Modeling Eight - Representing Natural Phenomena with Sines and Cosines

Modeling Nine - Modeling with Differential Equations in Higher Dimensions

This STATEMENT section should be the first section in the Teacher Version and then followed by the COMMENTS section in which the teacher shares with colleagues issues and possible solution

strategies surrounding this modeling scenario.

### Submission Version

For submission to the manuscript management system, <https://simiode.expressacademic.org> authors should submit a Teacher Version with all author identifying information stripped out. This should be a pdf version of the material.

Authors may also submit supporting documents such as pdf's of code files, e.g., MatLab, Mathematica, Maple, SAGE, etc. and spreadsheets and data files.

Video files should be uploaded to YouTube and the author should refer to them by URL in material submitted for consideration. Upon acceptance, the YouTube video (perhaps modified per the referee/edit process) will be uploaded to the SIMIODE channel, <https://www.youtube.com/channel/UC141C-tyBGkDPmUnKMW3f3w>.

Below is a set of References which appears in the Student Version. Note, there is a second set of References one can use for the Teacher Version.

### REFERENCES

- [1] Hutchinson, G. Evelyn. 1978. *Introduction to Population Ecology*. New Haven CT: Yale University Press.

### COMMENTS

This is a set of COMMENTS about the scenario, for the teacher only. It might include a "solution" or a number of solution strategies. However, the main narrative should be about how to use the scenario in teaching, e.g., what are prerequisites, how long might one devote to it, what resources for students could be expected to be used, what issues which cause students difficult or ease should be expected to come up, discussion of technology use, pointers to other files, etc. This set of COMMENTS might have its own pointers to data sets, supplementary files, videos, etc. for student and teacher use, the material for students could be something the teacher might use with discretion. There could be an extended bibliography [1, 2] for additional teacher resources, analyses, data, etc.

### REFERENCES

- [1] Gause, G. F. 1971. *The Struggle for Existence*. New York: Dover Publications, Inc. First published in 1934 by The Williams & Wilkins Company and available completely on the world wide web at <http://www.ggause.com/Contgau.htm>. Accessed 31 March 2008.
- [2] Hutchinson, G. Evelyn. 1978. *Introduction to Population Ecology*. New Haven CT: Yale University Press.