Sample Syllabus

Here, we describe how our supplement might be used with two different elementary differential equations texts: **Elementary Differential Equations**, Ninth Edition, by Boyce & DiPrima (Wiley, 2008) and **Differential Equations and Boundary Value Problems,** Fourth Edition , by Edwards and Penney (Prentice-Hall, 2008).

The supplement contains enough material to address the topics in the nine chapters of Boyce & DiPrima or the first eight chapters of Edwards & Penney. This material is more than ample for one semester or two quarters of study. If the course is given in a 15-week semester, then it is likely that portions of these chapters would have to be omitted. For example, at the University of Maryland, College Park, we sometimes omit one or both or Chapters 5 or 6 of Boyce & DiPrima. Because of the emphasis in the supplement on the numerical ODE solver, it is imperative that numerical methods be treated early in the course.

The following schedules are for a typical semester. We assume a MWF schedule with 38 lectures and three days for exams.

Syllabus for Use with Boyce & DrPrima

B&D Sections	Material from this book Chapters	Prob. Sets	No. of Lectures
2.1-2.6	1-6	A,B	10
2.7, 8.1-8.3	7, 8	C	3
3.1-3.8	9 (10*)	D	10
4.1-4.2	12 (13*)	F	1
7.1-7.8	12 (13*)	F	7
9.1-9.5	13 (14*)	F	7

Syllabus for Use with Edwards & Penney

E&P Sections	Material from this book Chapters	Prob. Sets	No. of Lectures
1.1-1.6	1-6	A, B	7
2.1-2.6	7, 8	C	6
3.1-3.6	9 (10*)	D	8
4.1-4.3	12 (13*)	F	3
5.1-5.6	12 (13*)	F	8
6.1-6.5	13 (14*)	E	6

*These refer to the Matlab book only.

The following schedule indicates where exams and problem set due dates could be placed for the Boyce & DiPrima syllabus.

Item	Lecture Number
Problem Set A	5
Exam 1	11
Problem Set B	13
Problem Set C	20
Exam 2	25
Problem Set D	27
Exam 3	38
Problem Set F	40

Instructors have a great deal of flexibility in deciding how to integrate the material from the supplement into a course. By choosing among the ODE chapters (Chapters 5-7 and 9-13[1]), the instructor can decide which aspect of the course to emphasize. In order to emphasize numerical methods, you could stress Chapter 7 and Problem Set C. In order to emphasize symbolic computation, you could stress Chapters 5, 10 and 11[2] and problem Set E. In order to emphasize geometric methods, you could stress Chapters 6, 9, and 13[3] and Problem Sets B and D. Chapter 12[4] incorporates both symbolic and geometric methods.

By adjusting the number of problems assigned from each problem set, the instructor can adjust the level of intensity. For example, some of our colleagues spread the problems out in a more uniform way during a semester, instead of assigning several substantial problem sets; the material accommodates either mode.

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*1; 9-14 in the MATLAB book
*2; 5, 11 and 12 with the MATLAB book
*3; 6 10 and 14 in the MATLAB book
*4; 13 in the MATLAB book