

2106. Malham, Simon J.A. Differential Equations and Linear Algebra. 95 pp.

<http://www.macs.hw.ac.uk/~simonm/linalg.pdf> . Accessed 9 March 2023.

This is a nice set of notes on which a course can be based. There is ample material on first and second order, linear systems, and Laplace Transform methods for setting up and solving differential equations. Some applications are offered and while most of the exercises are technique driven there are a few applications. The text is nicely hyperlinked as well.

Some of the examples included are coupled pendula with spring between the respective bobs, good explanations and illustrations of various damping types, great treatment of resonance and beats, with intuitive derivations based on the nature of the terms and their physical meaning.

At the end of most sections there is a summary of the solution strategies with step-by-step overview.