

Project	Prerequisite	Technology needed
Dives with Stops and Tissue k -values	Section 2.3	Calculator
Testing Torricelli's Law	Section 2.3	CAS Starter <i>Mathematica</i> notebook provided.
Orthogonal Families	Section 2.8	CAS Starter <i>Mathematica</i> notebook provided.
The Catenary	Section 4.1	CAS and Power Point Starter <i>Mathematica</i> notebook provided.
High-pass and Low-pass Filters	Section 5.4	Optional CAS or graphing calculator
The Tautochrone Problem	Section 6.6	CAS Starter <i>Mathematica</i> notebook provided.
Legendre's Equation	Section 7.3	Optional CAS or graphing calculator
Transmissibility of COVID-19 outside China	Exercise 22 in Section 8.1	CAS Starter <i>Mathematica</i> notebook provided.
An SIQR model for COVID-19	Exercise 22 in Section 8.1	CAS Starter <i>Mathematica</i> notebook provided.
Vaccination and COVID-19	Exercise 22 in Section 8.1	CAS Starter <i>Mathematica</i> notebook provided.
Competition for Space and Habitat Destruction	Section 10.4	CAS Starter <i>Mathematica</i> notebook provided.
Solitons and the KdV Equation	Section 11.4	CAS Starter <i>Mathematica</i> notebook provided.
Schrödinger's Equation and an "Electron in a Box"	Section 11.6	CAS Starter <i>Mathematica</i> notebook provided.
Making Pancakes	Section 11.7	CAS Starter <i>Mathematica</i> notebook provided.