List of possible projects

Dynamical systems:

Biochemical switches:
Ex. 3.7.5 – p.90-91 refs Example 8.1.1 – p. 243-245

Laser model:
3.3 – pp.53-55, 3.3.1-3.3.2 – pp.81-82, 6.4.7 – p 185, 8.1.13 – p 286, 9.1.4 – p 342

Josephson junction arrays:
4.6.1 - 4.6.6 – pp 117-119, 6.6.3 – p. 167, 6.6.9 – p. 191, pp. 272-273, 8.7.4 – pp. 283-284

Fluid flow:
3.6.6 – p. 87, 6.6.8, 6.6.11 – p. 191, instability refs – p.252, turbulence, convection refs – p.311, convection experiments – p. 374-376 -refs.

Epidemic model: 3.7.6 - p.91-92 refs: Kermack-McKendrick model, 6.5.6 - p. 186

Iterated maps:

Computation of orbit diagram and Liapunov exponent: 10.2.3-8, 10.5.6
Decimal/Binary shift map: 10.3.7-9, 10.5.2, 11.1.6-7
Numerical estimation of universal parameters and investigation of route to chaos: 10.6.1, 10.7.5-7
Normalization 10.7.8-9

Fractals:

Random and fat fractals, sponges: 11.4.8-9, 11.3.10, 11.4.10, 11.3.9, 11.4.3, 11.4.5
Computation of correlation dimension: 11.5.1

Strange attractors:

Baker's map: 12.1.3-6
Horseshoe map: 12.1.7
Henon's map: 12.1.8, 12.2.4 - 12
Double-well oscillator: 12.5.1 - 12.5.5