

Solid Mechanics					
Week	Subject	Lecture Slides	Tutorial Questions	Example Solutions	Self-Assessment Test
Week 1	Force, Area and Stress	Lecture 1	Tutorial 1	Example 1	~
Week 2	Axial Deformation	Lecture 2	Tutorial 2	Example 2	
Week 3	Stress on an inclined plane	Lecture 3	Tutorial 3	Example 3	
Week 4	Plane Stress and plane Strain	Lecture 4	Tutorial 4	Example 4	
Week 5	Strain Energy	Lecture 5	Tutorial 5	Example 5	
Week 6	~	~	~	~	Mid-term
Week 7	Beam Bending	Lecture 6	Tutorial 6	Example 6	~
Week 8	Stress Concentration	Lecture 7	Tutorial 7	Example 7	
Week 9	Torsion	Lecture 8	Tutorial 8	Example 8	
Week 10	Power Transmission in Torsion	Lecture 9	Tutorial 9	Example 9	
Week 11	Elastoplastic analysis	Lecture 10	Tutorial 10	Example 10	
Week 12	~	Lecture 11 (Recap)	~	Example 11	~

Modelling of Engineering Systems					
Week	Subject	Lecture Notes	Lecture Slides	Tutorials	Python Simulations
Week 1	Introduction & Python Installation	~	Lecture 1	~	~
Week 2	Mechanical and Electrical systems	Lecture 2	Lecture 2	Tutorial 1	Mass Spring Dampener
Week 3	Linearisation and Laplace 1	Lecture 3	Lecture 3	Tutorial 2	Mass Spring Dampener System
Week 4	Laplace 2 and Transfer Function	Lecture 4	Lecture 4	Tutorial 3	Mass-Dampener System
Week 5	State space and Time Responses 1	Lecture 5	Lecture 5	Tutorial 4	Statespace
Week 6	~	~	~	~	~
Week 7	Time Responses 2 and Simultaneous Linear Equations 1	Lecture 6	Lecture 6	Tutorial 5	Mass-Spring Dampener
Week 8	Simultaneous Linear Equations 2 and 3	Lecture 7	Lecture 7	Tutorial 6	Gauss Elim
Week 9	Numerical methods 2 and simulation	Lecture 8	Lecture 8	Tutorial 7	~
Week 10	Finite Difference Method and Shooting Method	Lecture 9	Lecture 9	Tutorial 8	Q4 Solution
		Lecture 10 (1)			
Week 11	ODEs and PDEs	Lecture 10 (2)	Lecture 10	Tutorial 10	~

Fluid Dynamics					
Week	Subject	Lectures	Tutorial Questions	Additional Videos	Activities
Week 1	Introduction	Lecture 1.1 Lecture 1.2 Lecture 1.3	~	Non-Newtonian Fluid Demonstration Flyboard Conservation of Momentum	~
Week 2	Pipe Flow	Lecture 2.1 Lecture 2.2		~	Heat Transfer
Week 3	Energy Losses	Lecture 3.1 Lecture 3.1b Lecture 3.2	Tutorial 2	Reynolds' Dye Experiment Laminar and Turbulent flow Moody chart	Activity 1 Activity 2
Week 4	Pumps	Lecture 4.1 Lecture 4.2 Lecture 4.3	Tutorial 3	~	Activity 1 Activity 2
Week 5	Dimensionless Numbers	Lecture 5.1 Lecture 5.2	Tutorial 4		Activity 1