

Lecture timetable

1. 17 Oct 2013 – *Equilibrium of a solid body I*
The vector nature of forces, addition of forces
2. 22 Oct 2013 – *Equilibrium of a solid body II*
Friction
3. 24 Oct 2013 – *Equilibrium of a solid body III*
Moment of a force (torque)
4. 29 Oct 2013 – *Centre of mass*
Discrete sets of particles, continuous distribution of matter
5. 31 Oct 2013 – *Kinematics of a single particle*
Position, velocity, acceleration
6. 5 Nov 2013 – *Newton's laws*
Newton's laws of motion, Newton's second law, examples
7. 7 Nov 2013 – *Energy I*
Kinetic and potential energies, conservation of energy
8. 12 Nov 2013 – *Energy II*
Examples
9. 14 Nov 2013 – *Momentum*
Definition, conservation of momentum, collisions
10. 19 Nov 2013 – *Impulse*
Impulse, example of oblique impact
11. 21 Nov 2013 – *Simple harmonic motion*
Definition, elastic springs and strings (Hooke's law)
12. 26 Nov 2013 – *Circular motion I*
Derivation of constant acceleration
13. 28 Nov 2013 – *Circular motion II*
Examples including motion of particle sliding on a cylinder
14. 3 Dec 2013 – *Particle on a light hoop*
This example uses many of the ideas discussed earlier

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Course website: <http://www.damtp.cam.ac.uk/user/wingate/Mechanics>

Version of 9 Oct 2013. Check website for updates.