

Readings: Woodhouse - Special Relativity
Chapter 1 - Relativity in Classical Mechanics
Chapter 2 - Maxwell's Theory
Chapter 3 - Light Propagation

Present Ideas and Lead Discussion:

Chapter 1	__Margaret__
Chapter 2	__Eric__
Chapter 3	__Chris__

Present Problems:

1.1 - Isometries of Space	__Sam__
1.2 - Galilean Transformation	
1.3 - Persians and Greeks Passing	
2.1 - Duality Rotation	__Ben P__
2.2 - Field of Long Straight Wire	
3.3 - Poisson's Equation	__Robert__
3.4 - Complex Vector Solutions	
3.5 - Divergence of \vec{B}	__Emma__
3.6 - Source Free Solution	

EP1. __Erin__

A Newton-Galilean Problem - A seagull sits on the ground. The wind velocity is \vec{v} . How high can the gull rise without doing any work? The trick here is (i) to identify the most convenient reference frame, (ii) transform the problem to that frame, (iii) solve the problem, and (iv) transform the result back again so that it is expressed in the original frame.

EP2. __Ben G__

Use Lagrange equations to solve the problem of Kepler planetary orbits in a gravitational field. Work in 3 dimensions in spherical coordinates. Determine the orbital equation $r(\theta)$.

EP3. __Markus__

Use Lagrange equations to solve the problem of the double pendulum in a gravitational field. The double pendulum is a fixed pivot O, a light rigid rod OA of unit length at an angle α to the vertical, mass m at A, light rigid rod AB of unit length at an angle β to the vertical, mass m at B, constant gravitational field g downwards. Solve the equations in the small angle approximation.