**SPH 4U INDEPENDENT STUDY UNIT – STATICS**

One of the most important skills a university student can have when entering their first year is the ability to “teach themselves”, particularly in sciences and mathematics. This independent study unit gives you the opportunity to practice this skill while learning about statics – an important topic that first year physics courses assume you understand, but is not a separate unit in this course. The topic of statics has wide ranging applications not only in pure physics, but also in all aspects of engineering and the health sciences.

The Independent Study is divided into 3 sections:

1. Section 1: p. 128 to 148 in the Irwin textbook
* Centre of Mass
* Balancing Forces
* Balancing Torques
* Static Equilibrium: Balancing Forces and Torques
* **Assignment 🡪 Choose 3 from each section: p. 175 # 3, 4, 5, 9; p. 176 # 23, 29, 32, 41; Due: April 16, 2014**
1. Section 2: p. 148 to 171 in the Irwin textbook
* Static Equilibrium and the Human Body
* Stability and Equilibrium
* Elasticity: Hooke’s Law
* Stress and Strain: Cause and Effect
* Stress and Strain in Construction
* **Assignment🡪 Choose 3 from each section: p. 175 # 9, 12, 15, 18; p. 176 # 46, 50, 53, 56, 59, 60; Due: May 31, 2014**

The Independent Study will not be included in the final exam. In the past, the Independent Study has raised students’ marks.