Course Description

This course discusses many examples where simple and basic physics theories are used to understand everyday phenomena. Topics include inertia, formation of typhoons, tidal force and tides, energy crisis, greenhouse effect, sound waves and the physics of hearing, light waves and the physics of vision, formation of rainbows, etc.

Topics

1. Mass and Weight
2. Circular Motion and Fictitious Forces
3. What causes tides? How do typhoons form?
4. Heat, energy, energy crisis, and greenhouse effect
5. The physics of music and hearing
6. The physics of vision – Why is the sky blue and sunset red?
7. How do rainbows form?

Grading Scheme

- In-class quizzes (30%)
- Final examination (70%)

[Topics and grading schemes are subject to change as deemed appropriate. Students will receive information and guidelines in class on how they will be assessed for the course.]

Instructor

Dr. T.W. CHEN

Dr. Chen has extensive knowledge in physics and has taught credit-bearing courses across different levels at HKUST including Astronomy for Beginners, General Physics I with Calculus, and Numerical Modeling in Physics. Dr. Chen is also experienced in training secondary school students to represent Hong Kong in international competitions. In 2010, Dr. Chen led the Hong Kong Team of Secondary 4 to 6 students to the 41st International Physics Olympiad (IPhO) in Croatia, achieving brilliant results with one gold, one silver and three bronze medals. In 2012, Dr. Chen led another team of secondary school students to the 13th Asian Physics Olympiad (APhO) in India, returning proudly with one gold medal, two bronze medals and three honorable mentions. Dr. Chen has been teaching SISP 1105 for HKUST Summer Institute since 2011. He consistently receives high ratings every summer for his teaching evaluated by Summer Institute participants.