SISP 1105 The Physics of Everyday Life

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 Yee Fai NG
Dr Ng is a Teaching Associate in Physics at HKUST. He received his PhD in Surface Physics from the University of Hong Kong. He is experienced in developing and teaching courses ranging from UG to MSc level, including large-scale Common Core courses (Physics and the Modern Society, Physics in Movies) and Experiential Learning courses (Teaching Science Using Innovative Teaching Tools). Besides teaching at university, he has been promoting science to secondary school students by teaching at the Center for the Development of the Gifted and Talented (Pre-stage Level Physics), the Summer Institute (Physics of Everyday Life), and the Physics Olympiad. Dr Ng also gives various talks on popular science for the public, secondary school students, and University staff (at the InnoCarnivals, the HKUST-John Hopkins Center for Talented Youth Family Academic Program, the Sidewalk Scientist on TVB; the JUPAS Inspiring Science Talks, the Summer Camp Sample Lectures, the Women in Science and Engineering Discovery Mini-lectures; the Common Core Peer Sharing, the One-day Schooling).