



PHYSICS
Complementary
The Physics of Hollywood
203-BWT-03 section 01
Fall 2017

Teachers **Andrew Stewart** 7A.24, local 4024, anstewart@dawsoncollege.qc.ca

Pre-requisites None

Co-requisites None

Ponderation 3-0-3 (3 hours of lecture and 3 hours of work outside class per week)

Course objectives The objective of this course is to enable students to understand the general nature of current issues in

Reference materials

No required text book. Hand-outs will be distributed in class or posted online.

Reference texts:

1. Fantastic Voyages: Learning Science through Science Fiction Films (2nd ed.), Dubeck, Moshier & Boss, Springer-Verlag, 2004 (full text available on Google Books)
2. The Physics of Star Trek and Beyond Star Trek, L.M. Krauss, Harper, 1995 (partial text available on Google Books)
3. The Physics of Superheroes, J. Kakalios, Gotham Books, 2005
4. Physics for Poets (5th ed.), R. H. March, McGraw-Hill, 2003

Teaching methods

The material will be presented using a mix of active learning activities, lectures, in-class problem solving, laboratory experiments and demonstrations. Laboratory periods will be used for experiments as well as class tests and lectures.

**Course
content**

Movies and television shows sometimes take great liberties when it comes to the laws of physics or in portraying science, but they also get it right sometimes. When are they right and when are they wrong? Are they sometimes only partly right and partly wrong? This course will explore science and physics through movies and television shows. Both the qualitative and quantitative aspects of science and physics will be explored however, students are only expected to use basic math and simple calculations (advanced math is *not* required).

Most of the course material will be presented in themes with each lasting about two weeks and involving a specific topic. There will be approximately 5 or 6 themes explored in this course. Possible theme topics include: Energy, momentum and conservation; gravity, forces and motion; the stars and the universe (cosmology); modern physics; size and scaling. Your teacher will discuss the themes to be covered during the first full week of classes.

While there is no laboratory component in this course, experimental verification of physical reality is a key aspect of science and as such some class activities will occasionally involve experimental demonstrations and the analysis of data collected in the class or acquired from film clips. No lab reports will be required for this course.

**Questions
outside class**

All regular day program teachers will be available in their respective offices to their students during posted office hours. In the first week, your teacher will inform you of their schedule and will post it outside their office.

Room 7A.1 is the physics study room. At scheduled times, a teacher or peer tutor will be on duty there to answer your questions. The schedule of teachers and peer tutors will be posted outside of 7A.1 in the 2nd or 3rd week of term.