



PHYSICS
Complementary
The Physics of Hollywood
203-BWT-03 section 01
Fall 2018

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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 nature through its portrayal in popular culture. Students will learn how to characterize typical scientific thought processes and methods. Students will also use qualitative and quantitative analysis to separate science fact from science fiction. Links between science and technology, including the impact on society, will also be explored.

Course competencies At the conclusion of this course, students should understand the scientific method as well as an assortment of fundamental physical theories. Students should be able to associate an appropriate physical theory to an example taken from popular culture. Students should be able to critique a portrayal of nature using both qualitative and quantitative arguments. Finally, students should see the link between scientific discovery and technological innovation and be able to comment on the consequences and challenges these innovations may present.

Evaluation The Institutional Student Evaluation Policy (ISEP) is designed to promote equitable and effective evaluation of student learning and is therefore a crucial policy to read and understand. The policy describes the rights and obligations of students, faculty, departments, programs, and the College administration with regard to evaluation in all your courses, including grade reviews and resolution of academic grievance. ISEP is available on the Dawson website.

Quizzes ^y	30%
Class work	30%
Group assignment	10%
Term project	30%

^yYour teacher will provide a tentative test schedule during the first week of class.

Notes:

If the student receives a grade less than 60% in the term project, the maximum course grade they will be granted is 55%.

At the end of every theme (approx. 2 weeks) there will be a quiz on the material in that theme. Dates for the quizzes will be announced at least one week in advance.

On a regular basis, students will be asked to complete small in-class assignments and activities.

The due dates for the term project (including elements that may be required before the final project is due) will be specified by your teacher in the first full week of classes.

The student should be able to demonstrate a general understanding of the physical principles examined in each topic/theme, and to use this understanding to analyze the science portrayed in selected movies and television shows. Students will also produce one essay that is consistent with the level of a college student. In order to pass the course an average grade of 60% is required, calculated according to the evaluation scheme above. **Note: course work not submitted by the due date may be penalized at the teacher's discretion.**

**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.