

Essential Physics for Global Leaders I

概要

Physics is a science that underlies all other natural sciences and many modern technologies. It is important to have a basic grasp of the field to understand the depth (or shallowness) of human knowledge regarding the Universe we inhabit, to appreciate the ingeniousness of various technological marvels we use in our everyday lives, and to be able to make informed decisions regarding various socio-economical issues that affect us all, e.g. whether nuclear power plants are really safe or not.

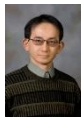
Since I cannot cover all of physics in one course, I will only be lecturing on a small selection of topics. The hope is that the student will pick up the basic methodology of the field and many of the jargon so that she will be able to study other topics on her own when/if the need arises.

Topics I plan to cover are :

- Classical Mechanics
- Electromagnetism
- Thermodynamics
- Atomic, Nuclear & Particle Physics
- Basics of Quantum Mechanics

This list is flexible. I will change the content depending on student preparation and also student demand.

講師



竹内 建

米、イェール大学にて博士号取得。

SLAC, Fermilab, CERNでのpostdocを経て、現在ヴァージニア工科大学理学部物理学科准教授。
専門は理論素粒子物理学。

スケジュール

※日程が一部変更になりました

日時	教室	講義テーマ
10月 16日 (木) 09:00~10:30 10:40~12:10	カンファレンスルーム (本館135)	Orientation, formation of groups and selection of articles for the course project Lecture (Classical Mechanics – Newton’s Laws)
10月 17日 (金) 09:00~10:30 10:40~12:10	共通講義棟 1号館 101	Lecture (Classical Mechanics – Conservation of Energy) Lecture (Classical Mechanics – Oscillations and Waves, Resonance)
10月 23日 (木) 09:00~10:30 10:40~12:10	カンファレンスルーム (本館135)	Lecture (Electromagnetism – Electric and Magnetic Fields) Lecture (Electromagnetism – Light as an electromagnetic wave)
10月 24日 (金) 09:00~10:30 10:40~12:10	共通講義棟 1号館 101	Lecture (Thermodynamics – Temperature and Heat) Lecture (Thermodynamics – Ideal Gas, Heat Engines, Refrigerators)
10月 30日 (木) 09:00~10:30 10:40~12:10	カンファレンスルーム (本館135)	Practice Presentation Practice Presentation
10月 31日 (金) 09:00~10:30 10:40~12:10	共通講義棟 1号館 101	Lecture (Atomic, Nuclear, and Particle Physics) Lecture (Atomic, Nuclear, and Particle Physics)
11月 6日 (木) 09:00~10:30 11月 13日 (木) 10:40~12:10	カンファレンスルーム (本館135)	Lecture (Basic Quantum Mechanics) Lecture (Basic Quantum Mechanics)
11月 20日 (木) 09:00~10:30	カンファレンスルーム (本館135)	Presentation, questions and answers

学生へのメッセージ

講義は原則全て英語で行いますが、難しい概念や用語は、日本語対訳を付けながら講義しますので、あまり緊張せずに参加してください。