



## University of International Business and Economics International Summer School

### AST 110 Introduction to Astronomy

**Term: July 2 – August 2, 2018**

**Instructor: Assoc. Prof. Mike Bisset**

**Home Institution: Tsinghua University**

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**Class Hours: Monday through Thursday, 120 minutes each day**

**Office Hours: TBD**

**Discussion Session: 2 hours each week**

**Total Contact Hours: 66 contact hours (45 minutes each)**

**Credit: 4 units**

#### **Course Description & Goals:**

An introduction to Astronomy designed for students not in the physical sciences. No previous course-work is assumed. Broadly speaking, there are 3 main areas covered in introductory astronomy courses: (1) planets & the solar system, (2) stars, (3) galaxies & cosmology.

These sequentially represent examining the Universe in which we exist on larger and larger scales. The goal of this course is to provide a brief but substantive look into each of these subject areas, with time roughly balanced between them. Some of the physics aspects required either to understand the characteristics of these entities or to observe them will also be covered; however, the use of mathematical formula & tools will be kept minimal. Qualitative descriptions will be preferred.

#### **Required Textbook:**

The Cosmos: Astronomy in the New Millennium

By Jay M. Pasachoff & Alex Filippenko

#### **Grading Policy:**

Grades will be determined as follows:

3 Weekly Quizzes	45%
Homework	15%
Final Exam	40%
<b>Total</b>	<b>100%</b>

#### **Grading Scale:**

Assignments and examinations will be graded according to the following grade scale:

<b>A</b>	90-100	<b>C+</b>	72-74
<b>A-</b>	85-89	<b>C</b>	68-71
<b>B+</b>	82-84	<b>C-</b>	64-67
<b>B</b>	78-81	<b>D</b>	60-63
<b>B-</b>	75-77	<b>F</b>	below 60

### **Class Rules:**

Any academic misconduct of any type, especially cheating on an exam, will automatically trigger:

- (1) expulsion from the course;
- (2) the issuance of a failing grade for the course;
- (3) the issuance of a formal report about the student's misconduct to the student's home university;
- (4) any other disciplinary or administrative action deemed appropriate by Professor Bisset and the leaders of UIBE. Students are allowed to co-operate on, but not copy, homework exercises.

### **Attendance Policy:**

The attendance of every student at **all** class sessions is mandatory. There will be limited exceptions based on formal written permission of the professor.

### **Course Schedule:**

NOTE: the actual pace may vary somewhat from that indicated on this schedule. Instructor will try to maintain this schedule, but not at the expense of providing students with accurate explanations.

#### **WEEK ONE**

M: A Grand Tour of the Heavens

Tu: Light, Matter, and Energy: Powering the Universe

W: Light and Telescopes: Extending Our Senses

Th: Observing the Stars and Planets: Clockwork of the Universe

#### **WEEK TWO**

M: Gravitation and Motion: The Early History of Astronomy

Tu: The Terrestrial Planets: Earth, Moon, and Their Relatives

W: The Jovian Planets: Windswept Planets

Th: Pluto, Comets, and Space Debris

#### **WEEK THREE**

M: Our Solar System and Others

Tu: Our Star: The Sun

W: Stars: Distant Suns

Th: How the Stars Shine: Cosmic Furnaces



**WEEK FOUR:**

M: The Death of Stars: Recycling

Tu: Black Holes: The End of Space and Time

W: The Milky Way: Our Home in the Universe

Th: A Universe of Galaxies

**WEEK FIVE**

M: Quasars and Active Galaxies

Tu: Cosmology: The Birth and Life of the Cosmos

W: In the Beginning / Life in the Universe

Th: Final Exam