Tamkang University Academic Year 112, 2nd Semester Course Syllabus

Course Title	EXPLORING THE UNIVERSE	Instructor	TSAO, CHING-TANG
Course Class	TNUUB0A NATURAL SCIENCES, 0A	Details	◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG4 Quality education		

Departmental Aim of Education

By exploring natural laws and studying scientific methods, to let students understand the impact of science and technology on human life, and to cultivate in them the ability to think independently, and to discover, analyse and solve problems. Also, throu.

Subject Schoolwide essential virtues

1. A global perspective. (ratio:10.00)
2. Information literacy. (ratio:30.00)
3. A vision for the future. (ratio:10.00)
4. Moral integrity. (ratio:5.00)
5. Independent thinking. (ratio:30.00)
6. A cheerful attitude and healthy lifestyle. (ratio:5.00)
7. A spirit of teamwork and dedication. (ratio:5.00)
8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	This course provides a basic introduction to the structure of the universe. We start with the solar system, including our Earth and other planets and satellites. The life and death of a star, with our Sun as an example, will come next. We shall then explore the evolution of the Milky Way and other galaxies, and how they constitute the large-scale structure of our universe. Finally, we shall also look at the Big Bang theory which describes how the universe began.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	1 Exploring the solar system 2 Understanding life and death of a star 3 Evolution of the galaxies 4 Large-scale structure of the universe 5 Big Bang theory	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1		12345678	Lecture, Discussion	Testing

Course Schedule

Week	Date	Course Contents	Note
1	113/02/19 ~ 113/02/25	Course introduction	
2	113/02/26 ~ 113/03/03	Night sky and legends (I)	
3	113/03/04 ~ 113/03/10	Night sky and legends (II)	
4	113/03/11 ~ 113/03/17	Terrestrial planets (I)	
5	113/03/18 ~ 113/03/24	Terrestrial planets (II)	
6	113/03/25 ~ 113/03/31	Jovian planets (I)	
7	113/04/01 ~ 113/04/07	Jovian planets (II)	
8	113/04/08 ~ 113/04/14	Small bodies in the Solar system (I)	
9	113/04/15 ~ 113/04/21	Midterm Exam Week	
10	113/04/22 ~ 113/04/28	Small bodies in the Solar system (II)	
11	113/04/29 ~ 113/05/05	The Sun	

12	113/05/06～ 113/05/12	Life and death of a star	
13	113/05/13～ 113/05/19	The Milky Way	
14	113/05/20～ 113/05/26	Galaxies	
15	113/05/27～ 113/06/02	Large-scale structure of the Universe	
16	113/06/03～ 113/06/09	The Big Bang	
17	113/06/10～ 113/06/16	Final Exam Week (Date:113/6/11-113/6/17)	
18	113/06/17～ 113/06/23	Flex week, learning activities should be arranged.	

Key capabilities	
Interdisciplinary	
Distinctive teaching	
Course Content	Logical Thinking
Requirement	
Textbooks and Teaching Materials	Self-made teaching materials:Handouts
References	1. "Cosmos" by Carl Sagan 2. "Cosmology" by Edward Harrison 3. "Foundation of Astronomy" by Michael Seeds
Grading Policy	◆ Attendance： % ◆ Mark of Usual： % ◆ Midterm Exam： 50.0 % ◆ Final Exam： 50.0 % ◆ Other〈 〉： %

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