Tamkang University Academic Year 113, 1st Semester Course Syllabus

Course Title	EXPLORING THE UNIVERSE	Instructor	SHANG YUNG WANG
Course Class	TNUUB0D NATURAL SCIENCES, 0D	Details	◆ General Course ◆ Required ◆ One Semester ◆ 2 Credits
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	Exploring the Universe is a general education course that provides an elementary introduction to modern physics, astronomy and cosmology for undergraduate students. Topics include Einstein and theory of relativity, Planck and quantum theory, elementary particles and fundamental interactions, sun and solar system, sky and constellations, stars and galaxies, cosmic expansion and big bang theory, and history and fate of the Universe.

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	Understanding scientific methods, rational thinking and critical thinking	Cognitive
2	Understanding the latest development in modern physics and cosmology	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
2		12345678	Lecture, Discussion	Testing

Course Schedule

Week	Date	Course Contents	Note
1	113/09/09 ~ 113/09/15	Einstein and Theory of Relativity (1)	
2	113/09/16 ~ 113/09/22	Einstein and Theory of Relativity (2)	
3	113/09/23 ~ 113/09/29	Einstein and Theory of Relativity (3)	
4	113/09/30 ~ 113/10/06	Planck and Quantum Theory (1)	
5	113/10/07 ~ 113/10/13	Planck and Quantum Theory (2)	
6	113/10/14 ~ 113/10/20	Elementary Particles and Fundamental Interactions (1)	
7	113/10/21 ~ 113/10/27	Elementary Particles and Fundamental Interactions (2)	
8	113/10/28 ~ 113/11/03	Elementary Particles and Fundamental Interactions (3)	
9	113/11/04 ~ 113/11/10	Midterm Exam Week	
10	113/11/11 ~ 113/11/17	Sky and Constellations	

11	113/11/18～ 113/11/24	Sun and Solar System (1)	
12	113/11/25～ 113/12/01	Sun and Solar System (2)	
13	113/12/02～ 113/12/08	Stellar Evolution (1)	
14	113/12/09～ 113/12/15	Stellar Evolution (2)	
15	113/12/16～ 113/12/22	Cosmic Expansion and Big Bang Theory (1)	
16	113/12/23～ 113/12/29	Cosmic Expansion and Big Bang Theory (2)	
17	113/12/30～ 114/01/05	Final Exam Week	
18	114/01/06～ 114/01/12	Flex week, learning activities should be arranged.	

Key capabilities	
Interdisciplinary	
Distinctive teaching	
Course Content	Logical Thinking
Requirement	1. This is an elective general education course with an emphasis on learning attitude. 2. Excerpts from previous Teaching Evaluation (in Chinese) <https://reurl.cc/ynyElD>.
Textbooks and Teaching Materials	Self-made teaching materials:Presentations Using teaching materials from other writers:Videos
Grading Policy	◆ Attendance： %　◆ Mark of Usual：20.0 %　◆ Midterm Exam： 40.0 % ◆ Final Exam： 40.0 % ◆ Other〈 〉： %

Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . **※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**