Tamkang University Academic Year 107, 2nd Semester Course Syllabus

Course Title	EVOLUTION OF TECHNOLOGIES	Instructor	LEE, MING-HSIEN
Course Class	TNUZB0B GLOBAL TECHNOLOGY REVOLUTION, 0B	Details	◆ Required ◆ One Semester ◆ 2 Credits

Academic Aim of Education

Students will understand recent development of modern science and technology and its impact on human society and global environment. Through the design of course students will also be familiar with broadly-based fundamental technical knowledge and improve.

Schoolwide essential virtues

A. A global perspective.

B. Information literacy.

C. A vision for the future.

D. Moral integrity.

E. Independent thinking.

F. A cheerful attitude and healthy lifestyle.

G. A spirit of teamwork and dedication.

H. A sense of aesthetic appreciation.

Course Introduction	Introduce the content and influence of quantum, computer and bio-molecular revolutions. This will help us understand and reflect our roles during the development of technologies related to matter, mind, and life.

The Relevance among Teaching Objectives, Objective Levels and Schoolwide essential virtues

I.Objective Levels (select applicable ones) :

(i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying, C4-Analyzing, C5-Evaluating, C6-Creating

(ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation, P4-Linked Operation, P5-Automation, P6-Origination

(iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing, A4-Organizing, A5-Charaterizing, A6-Implementing

II.The Relevance among Teaching Objectives, Objective Levels and Schoolwide essential virtues :

(i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.

(ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3,C5,and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)

(iii) Determine the Schoolwide essential virtues that correspond to each teaching objective. Each objective may correspond to one or more Schoolwide essential virtues at a time. (For example, if one objective corresponds to three Schoolwide essential virtues: A,AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Schoolwide essential virtues
1	Understand the scientific achievement of matter, mind, and life as well as how human master them.	C2	ABC
2	To know the future of science and technology	C4	ABC

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Understand the scientific achievement of matter, mind, and life as well as how human master them.	Lecture, Discussion	Written test, Report, Participation
2	To know the future of science and technology	Lecture, Discussion	Written test, Report, Participation

Course Schedule

Week	Date	Subject/Topics	Note
1	108/02/18 ~ 108/02/24	Introduction to the course	
2	108/02/25 ~ 108/03/03	Prolog -- Choreographer of Matter, Life and Intelligence	
3	108/03/04 ~ 108/03/10	Computer Revolution ; Visions 1 and Discussion	
4	108/03/11 ~ 108/03/17	Film watching and discussion : The 13th Floor	

5	108/03/18～ 108/03/24	Bio-molecular Revolution : Vision 2 and discussion	
6	108/03/25～ 108/03/31	DNA : (1) ; Genetic Code, Nuclear Acid and Proteins	
7	108/04/01～ 108/04/07	DNA (2) Cancer, (3) Personality	
8	108/04/08～ 108/04/14	DNA Sequencing ; DNA (3) Aging and Death	
9	108/04/15～ 108/04/21	DNA (5) The Origin of Mankind ; (6) The Future of DNA	
10	108/04/22～ 108/04/28	Midterm Exam Week	
11	108/04/29～ 108/05/05	Distribute mid-term exam papers and score correction	
12	108/05/06～ 108/05/12	Quantum Revolution ; Vision 3 and discussion	
13	108/05/13～ 108/05/19	Discovering Quanta : Photon, Atom, Energy and Materials, Laser and Superconductivity	
14	108/05/20～ 108/05/26	Nano-technology : Why and How	
15	108/05/27～ 108/06/02	Environmental Issues : Film watching	
16	108/06/03～ 108/06/09	Film Watching : Deep Impact	
17	108/06/10～ 108/06/16	Energy Crisis, Civilization, Search for a Planet and Future	
18	108/06/17～ 108/06/23	Final Exam Week	

Requirement	Course Website __ http://boson4.phys.tku.edu.tw
Teaching Facility	Computer, Projector, Other (Internet)
Textbook(s)	Visions, by M. Kaku (e-book is available from TKU library through campus IP)
Reference(s)	NEXT 20 Year and After（大塊文化）<Traditional Chinese Text>, more info on http://boson4.phys.tku.edu.tw
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： % ◆ Mark of Usual： % ◆ Midterm Exam： 50.0 % ◆ Final Exam： 50.0 % ◆ 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.**