

Tamkang University Academic Year 2012, 2nd Semester
Course Syllabus

Course Title	Global Science & Technology Revolution		Instructor	Yang, Lung-Jieh	
Department/Year/Class		Course Details			
International Business/2012/1B		<input checked="" type="checkbox"/> Required <input type="checkbox"/> Selective	<input checked="" type="checkbox"/> 0 (One Semester) <input type="checkbox"/> 1 (1st Semester) <input type="checkbox"/> 2 (2nd Semester) <input type="checkbox"/> 3 (3rd Semester)	Credits	2 Credits
Aim of Education			Core Competences		
<p>The purpose of this course is to provide introduction to students in Tamkang the future trends of the four major categories of modern technologies, namely "environment and energy resources", "bio-technology", "information technology" and "nano-technology". Underlining the important issues in global technology developments with a globalization view points, we will guide students to acquire both technology and humanity capacity, so that in this fast ever changing world of today, they can think ahead and act positively to take advantage of all impact of the breakthrough and innovation on our ways of living, while in the mean time be aware of the importance of eco-balance and sustainability, so they will become highly adaptive and competitive in our future-oriented society.</p>			<p>A. global perspectives B. a vision for the future C. information literacy D. ethical and moral principles E. effective teamwork</p>		
<p>Course Introduction (50 to 100 words)</p>	<p>The course presents an introduction to the historical background and general aspects of the global technological revolutions in quantum, information and biochemical technologies. The potential impacts of these technologies, including micro-system technology and nanotechnology, on the future will be of special interest; the points of our discussion include environmental and energy problems.</p>				

The Relevance among Teaching Objectives, Objective Levels and Core Competences

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 Core Competences :

- (I) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objectives. 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 core competences that correspond to each teaching objective. Each objective may correspond to one or more core competences at a time. (For example, if one objective corresponds to three core competences: A, AD, and BEF, list all of the three in the box.)

Teaching objectives	Relevance	
	Objective Levels	Core Competences
1. The students will be able to understand the historical background, basic concepts, principles of application and future perspectives of global technologies, and realize its influences and potential impacts on energy and high tech, such as nanotechnology and biomedical technology, etc.	C2	ABCDE
2. The students shall be aware of the development, status and future trends of the major areas of technology.	C4	ABCDE
3. The students shall be able to recognize that many of the social and environmental changes are due to the evolution of technology; then, they may reasonably address kinds of issues, either occurring or potential, in social, ethical, environmental or energy, etc. aspects.	A1	ABCDE
4.		
5.		
6.		

Teaching Objectives, Teaching Methods and Assessment

Teaching Objectives	Teaching Methods	Assessment
1. The students will be able to understand the historical background, basic concepts, principles of application and future perspectives of global technologies, and realize its influences and potential impacts on energy and high tech, such as nanotechnology and biomedical technology, etc.	Lecture and discussion	Tests, report, absence

2. The students shall be aware of the development, status and future trends of the major areas of technology.	Lecture and discussion	Tests, report, absence
3. The students shall be able to recognize that many of the social and environmental changes are due to the evolution of technology; then, they may reasonably address kinds of issues, either occurring or potential, in social, ethical, environmental or energy, etc. aspects.	Lecture and discussion	Tests, report, absence

This course has been designed to cultivate the following essential qualities in TKU students.

Essential Qualities of TKU Students	Description
<input checked="" type="checkbox"/> global perspectives	
<input checked="" type="checkbox"/> a vision for the future	
<input checked="" type="checkbox"/> information literacy	
<input checked="" type="checkbox"/> ethical and moral principles	
<input type="checkbox"/> independent thinking	
<input type="checkbox"/> an awareness of healthy living	
<input checked="" type="checkbox"/> effective teamwork	
<input type="checkbox"/> an appreciation of the arts	

Course Schedule

Week	Date	Subject/Topics	Note
1		Quantum tech revolution-1	
2		Quantum tech revolution -2	
3		ICT tech revolution -1	
4		ICT tech revolution -2	
5		Bio tech revolution -1	
6		Bio tech revolution -2	
7		Cosmology-1	
8		Field trip	
9		Cosmology-2	
10		Midterm Exam Week	
11		Environmental issues & presentation of group 1	
12		Energy issues & presentation of group 2	
13		Impact of gene tech & presentation of group 3	
14		Impact of bio tech & presentation of group 4	
15		Impact of ICT & presentation of group 5	
16		Impact of MEMS & presentation of group 6	

17		Impact of nano tech & presentation of group 7	
18		Final Exam Week	
Requirement	<p>1. According to the rule of Tamkang University, one who is absent beyond 1/3 of the whole class time is not allowed for attending the final exam. One time of absence at any roll call will lose you 2 scores.</p> <p>2. All students in this class are divided into 7 groups (assigned in the 2nd week.) Each group is scheduled to give an oral presentation of 30 min (3 min for each person) and they should hand in one integrated paper report. The title and the content of the presentation should be relevant to this course. The presentation score of each group is determined by the audience and Prof. Yang by 50%-50% weighting ratio. Additionally, each student should clearly mention his/her contribution to his/her group in the final term report.</p> <p>3. The questions of the mid-term test and the final test are designed by "all students in this class". Each group should figure out the class content of each topic and try to design their ideal exam questions. The leaders of the 7 groups are responsible for giving their proposed questions to Prof. Yang two weeks before the exams. These proposed questions of the mid-term will be opened to all students.</p>		
Teaching Facility	<input checked="" type="checkbox"/> Computer <input checked="" type="checkbox"/> Overhead Projector <input type="checkbox"/> Other (_____)		
Textbook(s)	The Global Science & Technology Revolution, Tamkang Press		
Suggested Readings	No English textbook but you can download all the PPT files at the website- -> http://tsp.ec.tku.edu.tw/QuickPlace/ljyang/PageLibrary4825705A002F9E0F.nsf/h_To/c/6a38bf61084516b24825705a002feb75/?OpenDocument		
Number of Assignment(s)	0 (Filled in only for those courses that apply)		
Grading Policy	<ul style="list-style-type: none"> ◆ Class attending : 10.0 % ◆ Q&A : 10.0 % ◆ Midterm exam : 30.0 % ◆ Final exam : 30.0 % ◆ Team presentation : 20.0 % 		
Note	<p>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/index.asp.</p> <p>※Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>		

Form No. : ATRX-Q03-001-FM201-05