

## Tamkang University Academic Year 111, 2nd Semester Course Syllabus

Course Title	ENERGY AND MATERIALS TECHNOLOGIES	Instructor	RODRIGUEZ JAN SEBASTIAN DOMINI
Course Class	TNUZB0A GLOBAL TECHNOLOGY REVOLUTION, 0A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Required</li> <li>◆ One Semester</li> </ul>
Relevance to SDGs	SDG3 Good health and well-being for people SDG7 Affordable and clean energy SDG13 Climate action		
<b>Departmental Aim of Education</b>			
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.			
<b>Subject Schoolwide essential virtues</b>			
<ol style="list-style-type: none"> <li>1. A global perspective. (ratio:20.00)</li> <li>2. Information literacy. (ratio:10.00)</li> <li>3. A vision for the future. (ratio:20.00)</li> <li>4. Moral integrity. (ratio:10.00)</li> <li>5. Independent thinking. (ratio:10.00)</li> <li>6. A cheerful attitude and healthy lifestyle. (ratio:10.00)</li> <li>7. A spirit of teamwork and dedication. (ratio:10.00)</li> <li>8. A sense of aesthetic appreciation. (ratio:10.00)</li> </ol>			
Course Introduction	This lecture will tackle the problems related to climate change, explore the methods to convert different types of energies, and the key materials involved in energy production and storage.		

**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	Students will learn about the methods and materials related to energy science, and the importance of the development of such systems	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	Discussion(including classroom and online), Report(including oral and written), Activity Participation

**Course Schedule**

Week	Date	Course Contents	Note
1	112/02/13 ~ 112/02/19	Introduction	
2	112/02/20 ~ 112/02/26	Sources of climate change and its impacts	
3	112/02/27 ~ 112/03/05	Sources of climate change and its impacts	
4	112/03/06 ~ 112/03/12	Sources of climate change and its impacts	
5	112/03/13 ~ 112/03/19	Non-renewable energy: Fossil fuels and natural gas	
6	112/03/20 ~ 112/03/26	Non-renewable energy: Fossil fuels and natural gas	
7	112/03/27 ~ 112/04/02	Non-renewable energy: Coal and oil	
8	112/04/03 ~ 112/04/09	Non-renewable energy: Nuclear power	
9	112/04/10 ~ 112/04/16	Non-renewable energy: Nuclear power	
10	112/04/17 ~ 112/04/23	Midterm Exam Week	

11	112/04/24 ~ 112/04/30	Alternatives to non-renewable sources and introduction to the Carbon Cycle	
12	112/05/01 ~ 112/05/07	Renewable energy: Solar and wind power	
13	112/05/08 ~ 112/05/14	Renewable energy: Hydroelectric and geo-thermal energy	
14	112/05/15 ~ 112/05/21	Renewable energy: Water splitting	
15	112/05/22 ~ 112/05/28	Renewable energy: Hydrogen gas	
16	112/05/29 ~ 112/06/04	Renewable energy: Hydrogen gas	
17	112/06/05 ~ 112/06/11	The Carbon Cycle	
18	112/06/12 ~ 112/06/18	Final Exam Week	
Requirement			
Teaching Facility	Computer, Projector		
Textbooks and Teaching Materials			
References			
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 10.0 %   ◆ Mark of Usual : 20.0 %   ◆ Midterm Exam : % ◆ Final Exam : % ◆ Other 〈Exercises and report〉 : 70.0 %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> . <b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b>		