Tamkang University Academic Year 110, 1st Semester Course Syllabus

Course Title	HISTORY OF MACHINES	Instructor	YANG LUNG-JIEH
Course Class	TNUZB0A GLOBAL TECHNOLOGY REVOLUTION, 0A	Details	◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG7 Affordable and clean energy SDG11 Sustainable cities and communities SDG13 Climate action		

Departmental 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.

Subject Schoolwide essential virtues

1. A global perspective. (ratio:70.00)
2. Information literacy. (ratio:10.00)
3. A vision for the future. (ratio:20.00)

Course Introduction	The course presents an introduction to the historical background and progressing aspects of the machine/manufacture technology. Highly welcome the students from non-engineering colleges to take. This is a partial-English course. A English-textbook is provided.

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	The students will "remember" the historical background, basic concepts, principles and applications of machine and manufacture technology, from Industry 1.0 to Industry 3.0, through the conventional lectures.	Cognitive
2	The students shall "imitate" the simple machine operation to participate the catapult competition in the final through hands-on practice.	Psychomotor
3	The students shall "receive" that the machine/manufacture industry is not a dirty job through the lecture and practice in this class.	Affective

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1		123	Lecture, Discussion	Testing, Study Assignments
2		123	Lecture, Discussion, Experience	Practicum, Report(including oral and written), Activity Participation
3		123	Discussion, Practicum, Experience	Practicum, Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	110/09/22 ~ 110/09/28	Introduction	
2	110/09/29 ~ 110/10/05	Anonymous Developments- Bio-mimicking machines	
3	110/10/06 ~ 110/10/12	Anonymous Developments- Artificial machines	
4	110/10/13 ~ 110/10/19	Chinese Inventions and Machines- Catapults	

5	110/10/20 ~ 110/10/26	Hands-on practice of Catapults and their manufacture	
6	110/10/27 ~ 110/11/02	Chinese Inventions and Machines- South-pointing chariot	
7	110/11/03 ~ 110/11/09	Water-powered machines in the middle age of Europe	
8	110/11/10 ~ 110/11/16	Machinery during the Industrial Revolution- Textile machines	
9	110/11/17 ~ 110/11/23	Midterm Exam Week	
10	110/11/24 ~ 110/11/30	Machinery during the Industrial Revolution- Steam engine	
11	110/12/01 ~ 110/12/07	When can we make our own power plant?	
12	110/12/08 ~ 110/12/14	Information Tech & Computers	
13	110/12/15 ~ 110/12/21	Semiconductor Industry	
14	110/12/22 ~ 110/12/28	MEMS and Nanotech	
15	110/12/29 ~ 111/01/04	Artificial Intelligence, Robotics, and IR 4.0	
16	111/01/05 ~ 111/01/11	Hand-in the final report	
17	111/01/12 ~ 111/01/18	Final Exam Week	
18	111/01/19 ~ 111/01/25	Supplementary: Introduction of Offshore Wind Power Generation	

Requirement	1.Attendance_10%. One time of absence: -2 scores. 2.Others_Final report(20%): Please select one type of machine introduced in this semester as your report topic. Hand-in at the final of the semester (16th week). 3.Mark of usual: 2 times of on-line quiz or Homeworks on ICLASS.
Teaching Facility	Computer
Textbooks and Teaching Materials	History of Machines, edited by Lung-Jieh Yang
References	Teaching materials on the Iclass
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：10.0 % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ Other〈Final report〉：20.0 %

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.**