

Tamkang University Academic Year 111, 1st Semester Course Syllabus

Course Title	HISTORY OF MACHINES	Instructor	
Course Class	TNUZB0A GLOBAL TECHNOLOGY REVOLUTION, 0A	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG4 Quality education SDG9 Industry, Innovation, and Infrastructure SDG11 Sustainable cities and communities SDG12 Responsible consumption and production		
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			
<ol style="list-style-type: none"> 1. A global perspective. (ratio:20.00) 2. Information literacy. (ratio:10.00) 3. A vision for the future. (ratio:20.00) 4. Moral integrity. (ratio:10.00) 5. Independent thinking. (ratio:10.00) 6. A cheerful attitude and healthy lifestyle. (ratio:10.00) 7. A spirit of teamwork and dedication. (ratio:10.00) 8. A sense of aesthetic appreciation. (ratio:10.00) 			
Course Introduction	The course presents an introduction to the historical background and progressing aspects of machine/manufacturing technology. It highly welcomes students from non-engineering colleges to take. This is an English taught 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 the machine and manufacturing 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 in the catapult competition in the final through hands-on practice.	Affective
3	The students shall "receive" that the machine/manufacturing industry is not a dirty job through the lecture and practice in this class.	Psychomotor

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, Practicum, Experience	Testing, Study Assignments, Discussion(including classroom and online), Practicum, Report(including oral and written), Activity Participation
2		13578	Lecture, Discussion, Practicum, Imitation	Testing, Study Assignments, Discussion(including classroom and online), Practicum, Report(including oral and written), Activity Participation

3		12348	Lecture, Discussion, Experience, Imitation	Testing, Study Assignments, Discussion(including classroom and online), Practicum, Report(including oral and written), Activity Participation
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Course Schedule

Week	Date	Course Contents	Note
1	111/09/05 ~ 111/09/11	Introduction	
2	111/09/12 ~ 111/09/18	Anonymous Developments- Bio-mimicking machines	
3	111/09/19 ~ 111/09/25	Anonymous Developments- Artificial machines	
4	111/09/26 ~ 111/10/02	Chinese Inventions and Machines- Catapults	
5	111/10/03 ~ 111/10/09	Hands-on practice of Catapults and their manufacture	
6	111/10/10 ~ 111/10/16	Chinese Inventions and Machines- South-pointing chariot	
7	111/10/17 ~ 111/10/23	Water-powered machines in the middle age of Europe	
8	111/10/24 ~ 111/10/30	Machinery during the Industrial Revolution- Textile machines	
9	111/10/31 ~ 111/11/06	Machinery during the Industrial Revolution- Steam engine	
10	111/11/07 ~ 111/11/13	Midterm Exam Week	
11	111/11/14 ~ 111/11/20	When can we make our own power plant?	
12	111/11/21 ~ 111/11/27	Information Tech & Computers	
13	111/11/28 ~ 111/12/04	Semiconductor Industry	
14	111/12/05 ~ 111/12/11	MEMS and Nanotech	
15	111/12/12 ~ 111/12/18	Artificial Intelligence, Robotics, and IR 4.0	
16	111/12/19 ~ 111/12/25	Hand-in the final report	
17	111/12/26 ~ 112/01/01	Supplementary: Introduction of Offshore Wind Power Generation	
18	112/01/02 ~ 112/01/08	Final Exam Week	

Requirement	1.Attendance_10%. One time of absence: -2 scores. 2.Others_Final report: Please select one type of machine introduced in this semester as your report topic. Hand-in at the final of the semester (16th week).
Teaching Facility	Computer
Textbooks and Teaching Materials	History of Machines, edited by Dr. Lung-Jieh Yang
References	
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	<p>◆ Attendance : 10.0 % ◆ Mark of Usual : % ◆ Midterm Exam : 30.0 %</p> <p>◆ Final Exam : 30.0 %</p> <p>◆ Other 〈Final report〉 : 30.0 %</p>
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/CS/main.php .</p> <p>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>