Tamkang University Academic Year 113, 1st Semester Course Syllabus

Course Title	HISTORY OF MACHINES	Instructor	TASUPALLI CHANDRASHEKHAR
Course Class	TNUZB0A GLOBAL TECHNOLOGY REVOLUTION, 0A	Details	◆ General Course ◆ Required ◆ One Semester ◆ 2 Credits
Relevance to SDGs	SDG4 Quality education SDG7 Affordable and clean energy SDG9 Industry, Innovation, and Infrastructure 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

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	This course will introduce the historical and recent development of modern science, machines, and their impact on humans. This course will provide the students with a broad fundamental technical knowledge and improve

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 be familiar with the concept, history, principles, and applications of machines and manufacturing from Industry 1.0 to Industry 4.0.	Cognitive
2	Students will understand the machines or manufacturing work is not a dirty job.	Affective
3	Students will prepare the catapult as a hands-on experience as Students will be familiar with the concept	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
2		12345678	Lecture, Discussion	Practicum, Report(including oral and written)
3		12345678	Practicum	Discussion(including classroom and online), Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	113/09/09 ~ 113/09/15	Introduction	
2	113/09/16 ~ 113/09/22	Anonymous Developments- Bio-mimicking machines	
3	113/09/23 ~ 113/09/29	Anonymous Developments- Artificial machines	
4	113/09/30 ~ 113/10/06	Chinese Inventions and Machines- Catapults	
5	113/10/07 ~ 113/10/13	Hands-on practice of Catapults and their manufacture	

6	113/10/14 ~ 113/10/20	Chinese Inventions and Machines- South-pointing chariot	
7	113/10/21 ~ 113/10/27	Water-powered machines in the middle age of Europe	
8	113/10/28 ~ 113/11/03	Machinery during the Industrial Revolution- Textile machines	
9	113/11/04 ~ 113/11/10	Midterm Exam/Midterm Assessment Week (teachers can adjust the week as needed)	
10	113/11/11 ~ 113/11/17	Machinery during the Industrial Revolution- Steam engine	
11	113/11/18 ~ 113/11/24	When can we make our own power plant?	
12	113/11/25 ~ 113/12/01	Information Tech & Computers	
13	113/12/02 ~ 113/12/08	Semiconductor Industry	
14	113/12/09 ~ 113/12/15	MEMS and Nanotech	
15	113/12/16 ~ 113/12/22	Artificial Intelligence, Robotics, and IR 4.0	
16	113/12/23 ~ 113/12/29	Hand-in the final report	
17	113/12/30 ~ 114/01/05	Final Exam/Final Assessment Week (teachers can adjust the week as needed)	
18	114/01/06 ~ 114/01/12	Flexible Teaching Week: Generally, no in-person classes; teachers may arrange teaching activities or final assessments, among other options.	

Key capabilities	
Interdisciplinary	
Distinctive teaching	
Course Content	Intellectual Property (learning intellectual property) Logical Thinking AI application

Requirement	
Textbooks and Teaching Materials	Self-made teaching materials:Textbooks, Presentations, Videos Using teaching materials from other writers:History of Machines,
References	
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual： % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ Other〈(Report)〉：30.0 %
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.**