

## Tamkang University Academic Year 113, 2nd Semester Course Syllabus

Course Title	MECHANISM	Instructor	JHAO-YU GUO
Course Class	TEBXB2A DEPARTMENT OF MECHANICAL AND ELECTRO-MECHANICAL ENGINEERING, 2A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Required</li> <li>◆ One Semester</li> <li>◆ 3 Credits</li> </ul>
Relevance to SDGs	SDG4 Quality education SDG9 Industry, Innovation, and Infrastructure		
D e p a r t m e n t a l   A i m   o f   E d u c a t i o n			
I. To prepare students with a solid background in applied sciences and engineering to enter the field of mechanical and electromechanical engineering. II. To train emerging engineers who possess the professional expertise and superior engineering ethics to meet the needs and expectations of the local community and global society. III. To instill in students a lifelong love of learning that extends beyond basic skills to acquire attributes of flexibility and adaptability in a diverse and competitive global marketplace.			
Subject Departmental core competences			
A. Head: Knowledge of mechanical and electromechanical engineering.(ratio:30.00) B. Hand: Hands-on skills and practical realization.(ratio:30.00) C. Heart: Love of learning and innovation.(ratio:20.00) D. Eye: Vision of progress and improvements.(ratio:20.00)			
Subject Schoolwide essential virtues			
1. A global perspective. (ratio:10.00) 2. Information literacy. (ratio:30.00) 3. A vision for the future. (ratio:10.00) 4. Moral integrity. (ratio:5.00) 5. Independent thinking. (ratio:30.00) 6. A cheerful attitude and healthy lifestyle. (ratio:5.00) 7. A spirit of teamwork and dedication. (ratio:5.00) 8. A sense of aesthetic appreciation. (ratio:5.00)			

Course Introduction	<p>Mechanism is a core course in mechanical engineering. This course aims to familiarize students with mechanisms as the basic units comprising machines. It will introduce the composition of mechanisms, calculations of degrees of freedom, and motion analysis in kinematics. Additionally, it will incorporate commonly encountered mechanisms in daily life, such as linkages, cam, and gear systems.</p>
------------------------	---

**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	1. Students will be able to differentiate between various types of mechanisms.	Cognitive
2	2. The course aims to cultivate students' abilities in observing, analyzing, and solving problems related to Mechanism.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	1235	Lecture	Testing, Study Assignments, Discussion(including classroom and online), Report(including oral and written)
2	ACD	12345678	Lecture	Testing, Study Assignments, Report(including oral and written)

**Course Schedule**

Week	Date	Course Contents	Note

1	114/02/17 ~ 114/02/23	Course overview / Discussion and grouping on mechanism motion and projects	
2	114/02/24 ~ 114/03/02	Introduction to mechanisms — Mechanism structures / Mechanism motion applied to project creation	
3	114/03/03 ~ 114/03/09	Linkage mechanisms / Mechanism motion applied to project creation	
4	114/03/10 ~ 114/03/16	Linkage mechanisms / Mechanism motion applied to project creation	
5	114/03/17 ~ 114/03/23	Linkage mechanisms / Mechanism motion applied to project creation	
6	114/03/24 ~ 114/03/30	Motion analysis / Report	
7	114/03/31 ~ 114/04/06	Class observation	
8	114/04/07 ~ 114/04/13	Motion analysis / Linkage mechanism drawing	
9	114/04/14 ~ 114/04/20	Midterm Exam	
10	114/04/21 ~ 114/04/27	Motion analysis	
11	114/04/28 ~ 114/05/04	Cam mechanisms / Linkage mechanism drawing	
12	114/05/05 ~ 114/05/11	Cam mechanisms / Linkage mechanism drawing	
13	114/05/12 ~ 114/05/18	Cam mechanisms / Cam design	
14	114/05/19 ~ 114/05/25	Gear mechanisms / Cam design	
15	114/05/26 ~ 114/06/01	Gear mechanisms / Cam design	
16	114/06/02 ~ 114/06/08	Gear mechanisms	
17	114/06/09 ~ 114/06/15	Final Exam	
18	114/06/16 ~ 114/06/22	Introduction to other mechanisms / Report	
Key capabilities		self-directed learning Problem solving	
Interdisciplinary			

Distinctive teaching	
Course Content	Logical Thinking
Requirement	<ol style="list-style-type: none"> <li>1. Students are expected to actively participate in this course. The content is continuous, and absence may lead to misunderstanding or lack of clarity.</li> <li>2. There will be approximately 10–15 assignments throughout the semester. Make-up submissions are not allowed except for official leave, bereavement leave, or maternity leave.</li> <li>3. Regardless of whether the student is in their third or fourth year, an extended study period, or has been admitted to graduate school, grades will not be adjusted to make exceptions for those who need this course to graduate.</li> <li>4. Students who fail to attend the midterm or final exams on time will not be allowed to take make-up exams.</li> </ol>
Textbooks and Teaching Materials	<p>Using teaching materials from other writers:Textbooks</p> <p>Name of teaching materials: Hong-Sen Yan, Mechanisms-Theory and applications, McGraw-Hill, 2016.</p>
References	
Grading Policy	<p>◆ Attendance : 10.0 %    ◆ Mark of Usual : 25.0 %    ◆ Midterm Exam : 30.0 %</p> <p>◆ Final Exam : 30.0 %</p> <p>◆ Other 〈Project〉 : 5.0 %</p>
Note	<p>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> .</p> <p><b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b></p>