應用力學 2

Applied Mechanics 2 -01

Course Information	
Course title	Applied Mechanics 2
Semester	114-2
Designated for	DEPARTMENT OF CIVIL ENGINEERING
Instructor	Chia-Ming Chang
Curriculum Number	CIE1014
Curriculum Identity Number	501E11020
Class	01
Credits	2.0
Full/Half Yr.	Half
Required/ Elective	Required
Time	Monday 7,8(14:20~16:20)
Remarks	Restriction: freshmen AND Restriction: within this department (including students taking minor and dual degree program) The upper limit of the number of students: 26.
Course introduction video	
Table of Core Capabilities and Curriculum Planning	Table of Core Capabilities and Curriculum Planning
Course Syllabus	
Please respect the intellectual property rights of others and do not copy any of the course information without permission	
Course Description	This course provides students with a better understanding of the theory and applications of engineering mechanics. Applied Mechanics 1 is focused on statics, while Applied Mechanics 2 is centered on dynamics.
Course Objective	1. Kinematics of a Particle 2. Kinetics of a Particle 3. Planar Kinematics of a Rigid Body 4. Planar Kinetics of a Rigid Body 5. (optional) Virtual Work

	6. (optional) Kinetics of a Particle - Work and Energy
Course Requirement	Calculus
Student Workload (Expected weekly study hours before and/or after class)	
Office Hours	Appointment required. Note: Please contact our TA first.
Designated reading	
References	Lecture notes
Grading	

No.	Item	%	Explanations for the conditions
1.	Homework	20%	
2.	Quiz	20%	10% each
3.	Midterm Exam	30%	
4.	Final Exam	30%	

1. NTU has not set an upper limit on the percentage of A+ grades.
2. NTU uses a letter grade system for assessment. The grade percentage ranges and the single-subject grade conversion table in the NATIONAL TAIWAN UNIVERSITY Regulations Governing Academic Grading are for reference only. Instructors may adjust the percentage ranges according to the grade definitions. For more information, see the Assessment for Learning Section.

Adjustment methods for students

Teaching methods	Assisted by video
Assignment submission methods	
Exam methods	
Others	Negotiated by both teachers and students

Progress

Week	Date	Topic
Week 1	02/23	12.1-12.3

Week 2	03/02	12.4-12.6
Week 3	03/09	Online-12.7-12.8
Week 4	03/16	12.8-12.10
Week 5	03/23	Quiz (12.1-12.10)
Week 6	03/30	13.1-13.3
Week 7	04/06	Holiday
Week 8	04/13	13.4-13.6
Week 9	04/20	Midterm
Week 10	04/27	16.1-16.4
Week 11	05/04	16.5-16.7
Week 12	05/11	Quiz (16.1-16.7)
Week 13	05/18	16.7-16.8
Week 14	05/25	16.8; 17.1-17.2
Week 15	06/01	17.3-17.5
Week 16	06/08	Final

Course Information	
Course title	Applied Mechanics 2
Semester	114-2
Designated for	DEPARTMENT OF CIVIL ENGINEERING
Instructor	RIH-TENG WU
Curriculum Number	CIE1014
Curriculum Identity Number	501E11020
Class	03
Credits	2.0
Full/Half Yr.	Half
Required/ Elective	Required
Time	Monday 7,8(14:20~16:20)
Remarks	Restriction: freshmen AND Restriction: within this department (including students taking minor and dual degree program) The upper limit of the number of students: 26.

<table>
<tr><td>Course introduction video</td><td></td></tr>
<tr><td>Table of Core Capabilities and Curriculum Planning</td><td>Table of Core Capabilities and Curriculum Planning</td></tr>
<tr><td colspan="2">Course Syllabus</td></tr>
<tr><td colspan="2">Please respect the intellectual property rights of others and do not copy any of the course information without permission</td></tr>
<tr><td>Course Description</td><td>This course introduces the dynamics of particles and rigid bodies, focusing on kinematics and kinetics. Students will explore motion characteristics, force applications, and analytical methods in the contexts of engineering applications, such as rigid body movements. This course serves as a cornerstone for learning advanced civil engineering dynamics, and the course materials integrate theoretical principles with practical applications.</td></tr>
<tr><td>Course Objective</td><td>Upon taking this course, students are anticipated to be well-prepared in the following items:
1. Kinematics of a Particle
2. Kinetics of a Particle
3. Planar Kinematics of a Rigid Body
4. Planar Kinetics of a Rigid Body
5. Virtual Work (optional)
6. Kinetics of a Particle - Work and Energy (optional)</td></tr>
<tr><td>Course Requirement</td><td>1. Prerequisites: Calculus
2. Absence of classes will be allowed only if the student informed the instructor in advance.
3. No plagiarism is allowed.</td></tr>
<tr><td>Student Workload (Expected weekly study hours before and/or after class)</td><td>3 hours</td></tr>
<tr><td>Office Hours</td><td>Mon. 16:30~18:00 Note: Students are welcome to schedule a discussion with the instructor through emails in advance.</td></tr>
<tr><td>Designated reading</td><td>R. C. Hibbeler, “Engineering Mechanics: Dynamics, ” Prentice Hall,14th Edition.</td></tr>
<tr><td>References</td><td>R. C. Hibbeler, “Engineering Mechanics: Dynamics, ” Prentice Hall,14th Edition.</td></tr>
<tr><td>Grading</td><td>
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<tr><td>1.</td><td>Midterm</td><td>30%</td><td></td></tr>
<tr><td>2.</td><td>Final exam</td><td>30%</td><td></td></tr>
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3.	Quiz	20%	
4.	Assignments	15%	
5.	Attendance	5%	

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Adjustment methods for students

Teaching methods	Assisted by recording, Assisted by video, Provide students with flexible ways of attending courses
Assignment submission methods	Written report replaces oral report
Exam methods	Exams replace written (oral) reports
Others	

Progress

Week	Date	Topic
Week 1	2/23	12.1 - 12.3 (kinematics of a particle)
Week 2	3/2	12.4 - 12.6 (curvilinear motion)
Week 3	3/9	12.7 (curvilinear motion)
Week 4	3/16	12.7, 12.8 (cylindrical coordinate)
Week 5	3/23	Quiz, 12.8
Week 6	3/30	12.9 - 12.10 (dependent motion); 13.1 - 13.4 (equation of motion)
Week 7	4/6	(break)
Week 8	4/13	13.5 - 13.6 (normal and tangential coordinates)
Week 9	4/20	Midterm
Week 10	4/27	16.1 - 16.3, 16.4 (kinematics of a rigid body)
Week 11	5/4	16.5 - 16.6 (relative motion analysis)
Week 12	5/11	16.7, Quiz (relative motion analysis)

Week 13	5/18	16.8 (relative motion analysis)
Week 14	5/25	17.1 - 17.3 (planar kinetic equations of motion)
Week 15	6/1	17.4 - 17.5 (planar kinetic equations of motion)
Week 16	6/8	Final exam