SYLLABUS

Date: __2013 . 07 . 29 .__

Course Name	Engineering Dynamics (동역학)	Credit	3
Instructor	Park, Gyuhae (박규해)	Lecture Hours	M5, M6, W5
Department	Mechanical Engineering	Classroom	공1A-306
Office	공1A-420	Counsel Hours	Tu:13:30-15:30
Office Telephone		E-mail	
TA		Course Grade	학부 2학년
Classification	전 필	Pre-requisites	일반 물리 1

Lecture objectives	The principal goal of this course is for students i) to learn the fundamental concepts of engineering dynamics and ii) to learn the mathematical formulations of dynamics problems and iii) to analyze the dynamics of particles and rigid bodies with applications. First, the kinematic properties, including displacement, velocity, acceleration, angular velocity, and acceleration will be introduced and the concepts of the mass and intertia moment will be studied along with how to derive these properties. Student will then learn how to derive equation of motions of mechanical systems using free body diagrams. The concepts of work, energy, and momentum will also be studied and applied to analyze complex engineering systems.
Course Overview	– Kinematics of particles – Kinetics of particles – Systems of particles – Kinematics of rigid bodies – Kinetics of rigid bodies – Plane Motion of Rigid bodies
Teaching Methods	– Classroom lecture with Power point slides, a classroom board will be used when necessary.
Grading System	Midterm1 1&2 (45%), Final (40), Homework (10%), Students' class activities(5%)
References	"Dynamics" Engineering Mechanics, by Benson H.Tongue, Wiley 2nd edition

[Relation with Program Outcomes]

No.	Program Outcomes	Weight
1	an ability to apply knowledge of mathematics, basic science, engineering, and information technology	90
2	an ability to design and conduct experiments, as well as to analyze and interpret data	30
3	an ability to devise a system, component, or process to meet desired needs within realistic constraints	70
4	an ability to identify, formulate, and solve engineering problems	40
5	an ability to use techniques, skills, and engineering tools necessary for engineering practice	70
6	an ability to function in multi-disciplinary teams	
7	an ability to communicate effectively	
8	a recognition of the need for, and an ability to engage in life-long learning	
9	a broad understanding of the impact of engineering solutions in economic, environmental, and societal context	
10	a knowledge of contemporary issues	
11	an understanding of professional and ethical responsibilities	
12	an understanding of other cultures and an ability to engage in international cooperation	

※ 해당 교과목과 관련 학습성과에 대하여 학점당 100점(1학점=100, 3학점=300)으로 표시

[Weekly Schedule]

Week	Description	Remarks
1	Kinematics of Particles: Rectilinear Motion	
2	Kinematics of Particles: Curvelinear Motion	
3	Kinetics of Particles: Newton's Law	
4	Kinetics of Particles: Newton's Law	
5	Kinetics of Particles: Energy and Momentum Method	
6	Kinetics of Particles: Energy and Momentum Method	
7	Midterm Exam	
8	Systems of Particles	
9	Kinematics of Rigid Bodies	
10	Kinematics of Rigid Bodies	
11	Plane Motion of Rigid Bodies: Forces and Accelerations	
12	Plane Motion of Rigid Bodies: Energy and Momentum Methods	
13	Plane Motion of Rigid Bodies: Energy and Momentum Methods	
14	Supplementary Lectures	
15	Final Exam	