2015년도 1학기 기계진동학 수업계획서

교과목명 Course Title	(국문) 기계진동학	(영문) Mechanical Vibration

담당교수(소속) Lecturer	곽관웅 (기계공학전공)	학수번호/구분/학점 (Course No. /)	006891/전공선택/3학점
전화(연구실/HP) Contact No.		강의시간/강의실 (Class Hour/Venue)	화/목 9:00-10:30 / 충무관 106
선수과목 (Course Prerequisite)	Enginering Mathematics, Dynamics	수강대상 (Target Student)	Mechanical Engineering Junior
E-mail (E-mail Address)		연구실/Office Hour (Office/Office Hour)	Tue/Thrs15:00-16:30

교과목표 (Objectives)	Vibration phenomenon of mechanical systems will be covered in this class. To obtain in-depth understanding of vibration phenomenon of the mechanical system through the lectures on the mathematical expression and analysis of vibration pheonomenon, degree of freedom, resonance, concept of damping, free vibration, system response to specific input, vibration control and design, multi-degree of freedom system and continuous system vibration
이번 강의의 개선을 위한 개선계획 CQI (Continuous Quality Improvement Plan)	동역학 review 부분을 빠르게 진행하여 진동 시스템 개념 이해에 더 많은 시간을 할당
교 재 참고도서 (Text book & References)	main text: Daniel J. Inman, Engineering Vibrations (4nd edition), Prentice Hall. reference: Singiresu S. Rao, Mechanical Vibrations (4th ed.), Prentice Hall.
과제도서 (Assignment book)	Daniel J. Inman, Engineering Vibrations (2nd edition), Prentice Hall.
수업방법 (Lecture Methods)	Lecture notes in PPT format will be used through projector
과제물 (Assignment)	homework problems with which main topics would be understood and reinforced will be given. homework problems are due in one week after given 1. Free Response 2. Matlab/Simulink simulation 3. Harmonic Excitation 4. General Forced Response 5. Multi-degree of Freedom System Response
독서물 (Reading Materials)	
학업성취 평가방법 (Course Grading)	[상대평가] 중간고사(%) : 40, 기말고사(%) : 40, 수시평가및과제(%) : 10, 출석(%) : 10, midterm(40 %), final(40 %), homework(10 %), attendance(10 %)
기 타 (Etc.)	

주별 교과내용 (교과목명 : 기계진동학)

주 (Week)	교 수 내 용 (Course Contents)	수업형태 및 활용기자재 (Etc.)	비 고
1	Introduction to vibration, Course overview Review of Dynamics (Equation of motion)	blackboard & projector	
2	One Degree-of-Freedom System Free Response(Equilibrium, Free undamped response) One Degree-of-Freedom System Free Response(free undamped response)	blackboard & projector	
3	One Degree-of-Freedom System Free Response(damping, free damped response) One Degree-of-Freedom System Free Response(Energy method)	blackboard & projector	
4	One Degree-of-Freedom System (stiffness) One Degree-of-Freedom System (measurements)	blackboard & projector	
5	Matlab / Simulink / Computer simulation Matlab / Simulink / Computer simulation, Nonlinear vibration system, stability	blackboard & projector	
6	Response to Harmonic Excitation (harmonic response, frequency response to harmonic input) Response to Harmonic Excitation (Base excitation)	blackboard & projector	
7	Response to Harmonic Excitation (Base excitation, rotating unbalance) Response to Harmonic Excitation (measurement device) & review	blackboard & projector	
8	Review midterm exam		

주별 교과내용 (교과목명 : 기계진동학)

주 (Week)	교 수 내 용 (Course Contents)	수업형태 및 활용기자재 (Etc.)	비 고
9	General Forced Response (impulse response) General Forced Response (response to arbitrary input)	blackboard & projector	
10	General Forced Response (Fourier series, response to an arbitrary periodic input)	blackboard & projector	
11	Laplace transform	blackboard & projector	
12	Multiple-Degree-Of-Freedom System (Eigenvalue problem, free undamped n-DOF system)	blackboard & projector	
13	Diagonalization Modal analysis	blackboard & projector	
14	Modal analysis Multi DOF forced response with viscous damping	blackboard & projector	
15	Lagrange Equation	blackboard & projector	
16	Review final exam		

추 가 안내사항1 (Additional Guide1)	특별한 지원이 필요한 경우(장애학생 등) 학기 첫 주에 담당교수와의 면담을 통해 출석, 강의, 과제 및 시험 등에 관한 교수학습지원 사항을 요청할 수 있음 Students who require special assistance (including special needs students) may contact their professors during the first week of the semester to discuss issues related to attendance, lectures, assignments and exams and request learning assistance.
추 가 안내사항2 (Additional Guide2)	