Elective Course Description (1. Fall Semester)

Subject (English)	Mechanical Vibrations I		Semester	Fall/Q* Quarter Subject	Day/Slot	
科目名 (日本語)	機械力学Ⅰ					
Course Code		Course Numbering	TMA-MEE213		Period	Oct. – Dec. (Quarter)
Instructor (Post)	Professor Mitsuhiro HAYASHIBE				Campus	
					Building	
Faculty	Faculty of Engineering		Credits	2	Class Room	

Class subject	To acquire fundamental knowledge regarding dynamic problems which may arise in machinery.

Object and summary of class
To learn dynamic characteristics of the systems with one, two and multi degrees of freedom obtained by modeling machinery.

Keywords	-

Goal of study
To acquire the ability to apply the knowledge obtained in this class to engineering design.

Contents and progress schedule of class

1. Introduction and fundamental mathematics
2. Free vibrations of one-degree-of-freedom systems (I)
3. Free vibrations of one-degree-of-freedom systems (II)
4. Free vibrations of one-degree-of-freedom systems (III)
5. Forced vibrations of one-degree-of-freedom systems
6. Free vibrations of one-degree-of-freedom systems with viscous damping (I)
7. Free vibrations of one-degree-of-freedom systems with viscous damping (II)
8. Free vibrations of one-degree-of-freedom systems with viscous damping (III)
9. Forced vibrations of one-degree-of-freedom systems with viscous damping
10. Free vibrations of two-degree-of-freedom systems (I)
11. Free vibrations of two-degree-of-freedom systems (II)
12. Forced vibrations of two-degree-of-freedom systems
13. Vibrations of multi-degree-of-freedom systems
14. Summary
15. Summary and examination

Preparation	Fundamental knowledge on Mathematics I and Mechanics are required.
Record and evaluation method	50%: mini test; 50%: final examination Mini test will be given in the beginning of class. The coverage of mini test is contents of the previous class.
Textbook and references	1. "Mechanical Vibrations SI (5th Edition)" S.S. Rao, Pearson Education, 2011 2. "Mechanical Vibrations" S.G. Kelly, Schaum's Outline Series, 1996 3. "An Introduction to Mechanical Vibrations, (3rd Edition)" R.F. Steidel, Jr., Wiley, 1989
Self study	Students are required to review each class for one to two hours. If there remain any parts they cannot understand, they should ask questions.
In addition	