

Subject Numbering	TMA-MEE213E
Year	2021
Subject	(IMAC-U)Mechanical Vibrations I
Credit(s)	2
Instructor	FEDORYNENKO DMYTRO MITSUHIRO HAYASHIBE

Language	English (英語)
Object in Class subject and Object and summary of class and Goal of study(J)	<ol style="list-style-type: none"> Class subject(目的) To acquire fundamental knowledge regarding dynamic problems which may arise in machinery. Object and summary of class(概要) To learn dynamic characteristics of the systems with one, two and multi degrees of freedom obtained by modeling machinery. Goal of study(達成目標等) To acquire the ability to apply the knowledge obtained in this class to engineering design.
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Other subject is relevant and complete a point to notice(J)	Fundamental knowledge on Mathematics I and Mechanics are required.
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Contents and progress schedule of class(J)	<ol style="list-style-type: none"> Introduction and fundamental mathematics Free vibrations of one-degree-of-freedom systems (I) Free vibrations of one-degree-of-freedom systems (II) Free vibrations of one-degree-of-freedom systems (III) Forced vibrations of one-degree-of-freedom systems Free vibrations of one-degree-of-freedom systems with viscous damping (I) Free vibrations of one-degree-of-freedom systems with viscous damping (II) Free vibrations of one-degree-of-freedom systems with viscous damping (III) Forced vibrations of one-degree-of-freedom systems with viscous damping Free vibrations of two-degree-of-freedom systems (I) Free vibrations of two-degree-of-freedom systems (II) Forced vibrations of two-degree-of-freedom systems Vibrations of multi-degree-of-freedom systems Summary Summary and examination
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self study(J)	Students are required to review each class for one to two hours. If there remain any parts they cannot understand, they should ask questions.
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Textbook and references	<table border="1"> <thead> <tr> <th>No</th> <th>Title</th> <th>Author</th> <th>Publisher</th> <th>Year</th> <th>ISBN/ISSN</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>『Mechanical Vibrations SI (5th Edition)』</td> <td>S. S. Rao</td> <td>Pearson Education</td> <td>2011</td> <td>9789810687120</td> <td></td> </tr> <tr> <td>2.</td> <td>『Mechanical Vibrations』</td> <td>S. G. Kelly</td> <td>Schaum' s Outline Series</td> <td>1996</td> <td>0070340412</td> <td></td> </tr> <tr> <td>3.</td> <td>『An Introduction to Mechanical Vibrations, (3rd Edition)』</td> <td>R. F. Steidel, Jr.</td> <td>Wiley</td> <td>1989</td> <td>0471845450</td> <td></td> </tr> </tbody> </table>	No	Title	Author	Publisher	Year	ISBN/ISSN	Classification	1.	『Mechanical Vibrations SI (5th Edition)』	S. S. Rao	Pearson Education	2011	9789810687120		2.	『Mechanical Vibrations』	S. G. Kelly	Schaum' s Outline Series	1996	0070340412		3.	『An Introduction to Mechanical Vibrations, (3rd Edition)』	R. F. Steidel, Jr.	Wiley	1989	0471845450	
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	<p>1単位の授業科目は、45時間の学修を必要とする内容をもって構成することを標準としています。1単位の修得に必要となる学修時間の目安は、「講義・演習」については15～30時間の授業および授業時間外学修(予習・復習など)30～15時間、「実験、実習及び実技」については30～45時間の授業および授業時間外学修(予習・復習など)15～0時間です。</p> <p>One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15-30 hours of class time and 30-15 hours of preparation and review outside of class. In laboratory, practical training, and practical skill classes, one credit consists of 30-45 hours of class time and 15-0 hours of preparation and review outside of class.</p>																												