Hochschule München University of Applied Sciences

Courses in English
Course Description

Department	06 Applied Sciences and Mechatronics
Course title	**Multibody Dynamics (MFM120)**
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	Students are able to derive the equations of motion of rigid multibody systems and will gather basic knowledge on computational aspects of the time simulation of such systems. Students are familiar with different approaches to setting up equations of motion and understand and can use different sets of coordinates used to describe the position of rigid bodies. Students can analyse linearised mechanical systems in terms of eigenmodes and eigenvectors.
Prerequisites	Mechanical Engineering basics
Recommended reading	H. Schaub, J. L. Junkins, Analytical Mechanics of Space Systems, AIAA, 2003 A. A. Shabana, Computational Dynamics, John Wiley and Sons, 2010 W. Schiehlen, P. Eberhard, Technische Dynamik, Springer Vieweg, 2014
Teaching methods	Lectures will take the form of seminars
Assessment methods	Project report
Language of instruction	English
Name of lecturer	Simon Wiedemann
Email	simon.wiedemann@hm.edu
Link	https://t1p.de/ylso
Course content	coordinate systems transformations writing constraint equations understanding and using virtual kinematic quantities understanding and using work-energy principles understanding and using Lagrange's equations understanding and using eigenmodes and eigenvectors
Remarks	