Hochschule München University of Applied Sciences

Courses in English
Course Description

Department	09 Engineering and Management
Course title	**Machine Components and Devices**
Course number	
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	Competence Level 2 “Understand”: Students recognize the boundary conditions of the design in different joint technologies. Competence Level 3 “Apply”: Students are able to select a suitable type of joint technology for a given machine or function. Students can recalculate different joints and machine components based on simple formulae. Competence Level 4 “Analyse”: Students are capable of analysing the mechanical principle of a technical design and can derive the mechanical model. Competence Level 5 “Assess”: Students are able to define criteria and to evaluate the applicability of the different machine components in mechanical designs.
Prerequisites	Basic knowledge of and fundamentals in mathematics and physics
Recommended reading	BUDYNAS, Richard G., 2011. Shigley´s Mechanical Engineering Design. Ninth Edition in SI Units. New York, 2011, McGraw-Hill Companies, Inc., ISBN 978-007-132840-1 NIEMANN, G., WINTER, H. und HÖHN, B.-R., 2005. Maschi-nenelemente Band 1: Konstruktion und Berechnung von Verbin-dungen, Lagern, Wellen. 4. Auflage. Berlin, Heidelberg, 2005, ISBN 3-540-25125-1 ROLOFF, MATEK, 2011: Maschinenelemente: Normung, Be-rechnung, Gestaltung. 20. Auflage. Wiesbaden, 2011, Vie-weg+Teubner Verlag/ Springer-Fachmedien, ISBN 978-3-8348-1454-8 DECKER, K.-H., 2011. Maschinenelemente: Funktion, Gestal-tung und Berechnung. 18., aktualisierte Auflage. München, 2011, Carl Hanser Verlag, ISBN 978-3-446-42608-5 GOMERINGER, R., et. al., 2014. Tabellenbuch Metall. 46. Auf-lage. Haan-Gruiten, 2014, Verlag Europa-Lehrmittel. ISBN 978-3-8085-1726-0
Teaching methods	Seminars
Assessment methods	written exam, 90 minutes
Language of instruction	English
Name of lecturer	Prof. Dr. Eckhard Hoffmann
Email	eckhard.hoffmann@hm.edu
Link	https://wi.hm.edu/kontakte_de/phonebook_detailseite_1019.de.html
Course content	•Features of detachable connections such as axles, shafts, pins, screws, nuts, bolts, etc. •Features of permanently connected joining techniques such as welding, soldering, bonding. •Methods of calculation for different joining techniques. •Design and calculation of shaft-to-hub connections. •Features and calculation of elastic springs, antifriction bearings, gears and transmission boxes, belts and chains, couplings and brakes.
Remarks	