

Module: Mechanism Theory

Level	Bachelor	Short Name	MT
Responsible Lecturers	Choi, Sung-Won, Prof. Dr.-Ing.		
Department, Facility	Mechanical Engineering and Business Administration		
Course of Studies	Mechanical Engineering, Bachelor		
Compulsory/elective	Compulsory	ECTS Credit Points	5
Semester of Studies	6	Semester Hours per Week	4
Length (semesters)	1	Workload (hours)	150
Frequency	SuSe	Presence Hours	60
Teaching Language	English	Self-Study Hours	90

The following section is filled only if there is **exactly one** module-concluding exam.

Exam Type	Project Work	Exam Language	English
Exam Length (minutes)		Exam Grading System	One-third Grades
Learning Outcomes	Students are <ul style="list-style-type: none"> • able to analyze mechanisms in terms of kinematics. • able to classify mechanisms according to their components and features. • able to recognize structure of a mechanism. • capable to model a virtual prototype 		
Participation Prerequisites			

The previous section is filled only if there is **exactly one** module-concluding exam.

Consideration of Gender and Diversity Issues	✓ Use of gender-neutral language (THL standard) ✗ Target group specific adjustment of didactic methods ✗ Making subject diversity visible (female researchers, cultures etc.)
Applicability	Projekt 1, Technische Mechanik 1 und 3, Product Development
Remarks	This lecture covers the field of analysis, synthesis and design of mechanisms. In generally it is described as kinematics and dynamics of machines. Therefore, the intention is to create a complete chain beginning with the idea and ending with a virtual prototype in a rigid body modeler.

Module Course: Mechanism Theory (Lecture)

(of Module: Mechanism Theory)

Course Type	Lecture	Form of Learning	Presence
Mandatory Attendance	no	ECTS Credit Points	3
Participation Limit		Semester Hours per Week	3
Group Size		Workload (hours)	90
Teaching Language	English	Presence Hours	45
Study Achievements ("Studienleistung", SL)		Self-Study Hours	45
SL Length (minutes)		SL Grading System	

The following section is filled only if there is a course-specific exam.

Exam Type		Exam Language	
Exam Length (minutes)		Exam Grading System	
Learning Outcomes			
Participation Prerequisites			

The previous section is filled only if there is a course-specific exam.

Contents	<p>Basics</p> <ul style="list-style-type: none"> Mechanisms, transmission function, systematic of mechanisms <p>Systematic representation of the mechanisms</p> <ul style="list-style-type: none"> parts of a mechanisms, systematic of the joints, degree of freedom, structures for planar mechanisms transmission of mechanisms, quality in motion, law of Grashof <p>Motion of the coupler plain</p> <ul style="list-style-type: none"> kinematic, special coupler curves, law of Roberts /Tschebyshev <p>Kinematic of the coupler plain</p> <ul style="list-style-type: none"> instants, turned velocities, accelerations <p>Centrodes</p> <ul style="list-style-type: none"> instantaneous center of rotation, transmission, centrodes, law of Aronhold
Literature	<ul style="list-style-type: none"> Hand-outs to lecture and to exercises Literature according to the current list distributed in the class
Remarks	

Module Course: Mechanism Theory (Practical Training)

(of Module: Mechanism Theory)

Course Type	Practical Training	Form of Learning	Presence
Mandatory Attendance	no	ECTS Credit Points	2
Participation Limit		Semester Hours per Week	1
Group Size		Workload (hours)	60
Teaching Language	English	Presence Hours	15
Study Achievements ("Studienleistung", SL)		Self-Study Hours	45
SL Length (minutes)		SL Grading System	

The following section is filled only if there is a course-specific exam.

Exam Type		Exam Language	
Exam Length (minutes)		Exam Grading System	
Learning Outcomes			
Participation Prerequisites			

The previous section is filled only if there is a course-specific exam.

Contents	<p>Systematic representation of the mechanisms</p> <ul style="list-style-type: none"> parts of a mechanisms, systematic of the joints, degree of freedom, structures for planar mechanisms transmission of mechanisms, quality in motion, law of Grashof <p>Motion of the coupler plain</p> <ul style="list-style-type: none"> kinematic, special coupler curves, law of Roberts /Tschebyshev <p>Kinematic of the coupler plain</p> <ul style="list-style-type: none"> instants, turned velocities, accelerations <p>Centrodes</p> <ul style="list-style-type: none"> instantaneous center of rotation, transmission, centrodes, law of Aronhold
Literature	<ul style="list-style-type: none"> Hand-outs to lecture and to exercises Literature according to the current list distributed in the class Computer software in the laboratory
Remarks	