Hochschule
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University of
Applied Sciences



Master of Science (M. Sc.)
Mechanical Engineering/Mechatronics

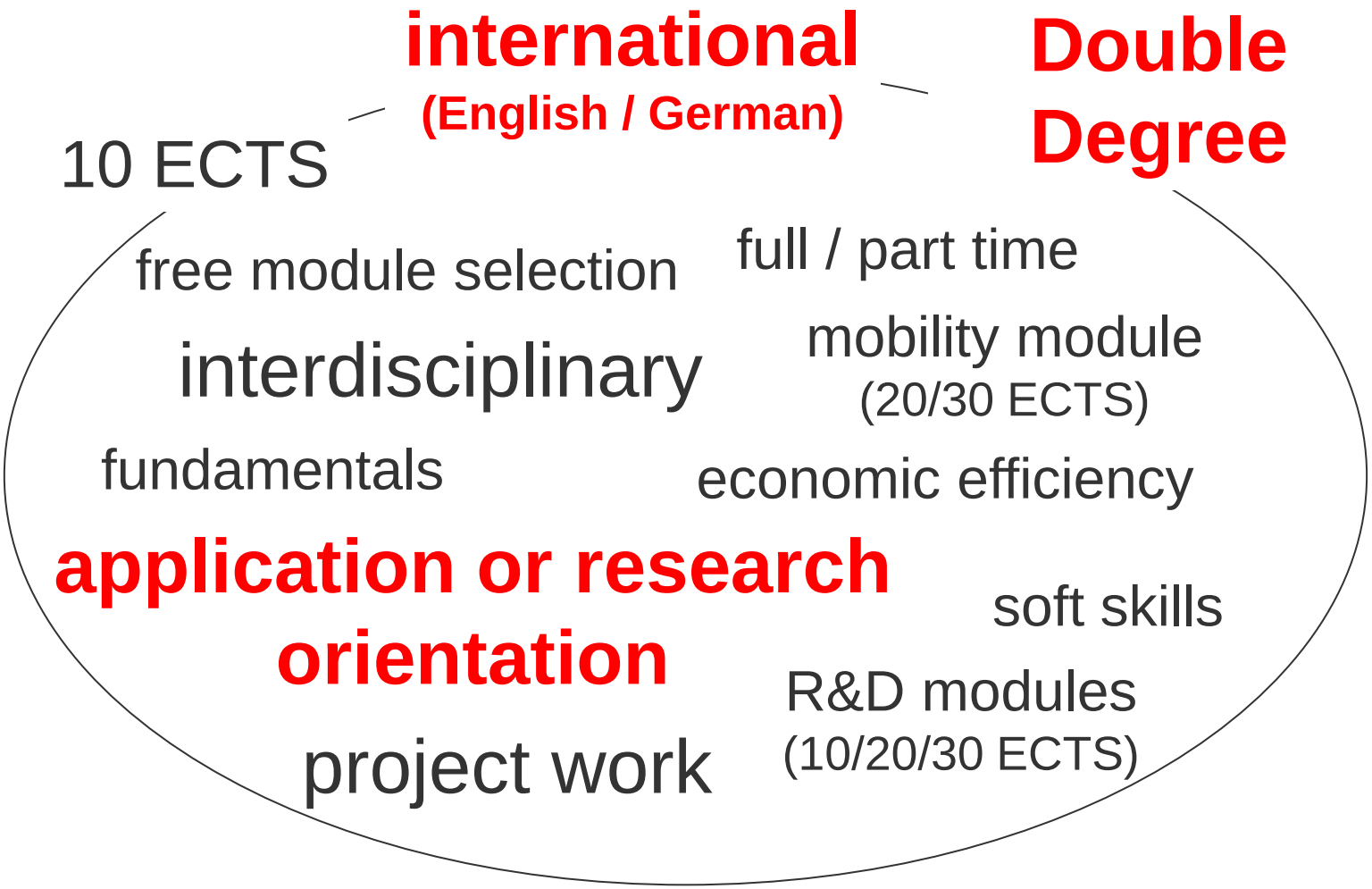
Information

2026

Department of Engineering
Prof. Dr.-Ing. Heiko Heß

Hochschule Kaiserslautern
University of Applied Sciences

Master in Mechanical Engineering/Mechatronics



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Type of Degree Programme and Academic Degree

- Based on the successfully completed Master's examination, the academic degree "**Master of Science**" (abbreviated: "M.Sc.") is awarded.
- If **at least 30 ECTS are earned in R&D modules** and if, in addition, the **Master's thesis is research-oriented**, the degree programme has been completed in a research-oriented manner; the R&D modules and the Master's thesis should relate to each other in terms of content. **The research orientation is indicated on the Master's degree certificate.**
- The university "**University West**" (hereinafter referred to as UW) in Trollhättan, Sweden, awards the academic degree "**Master of Science in Mechanical Engineering**", provided that the requirements for the degree at UW have been fulfilled (Double Degree).

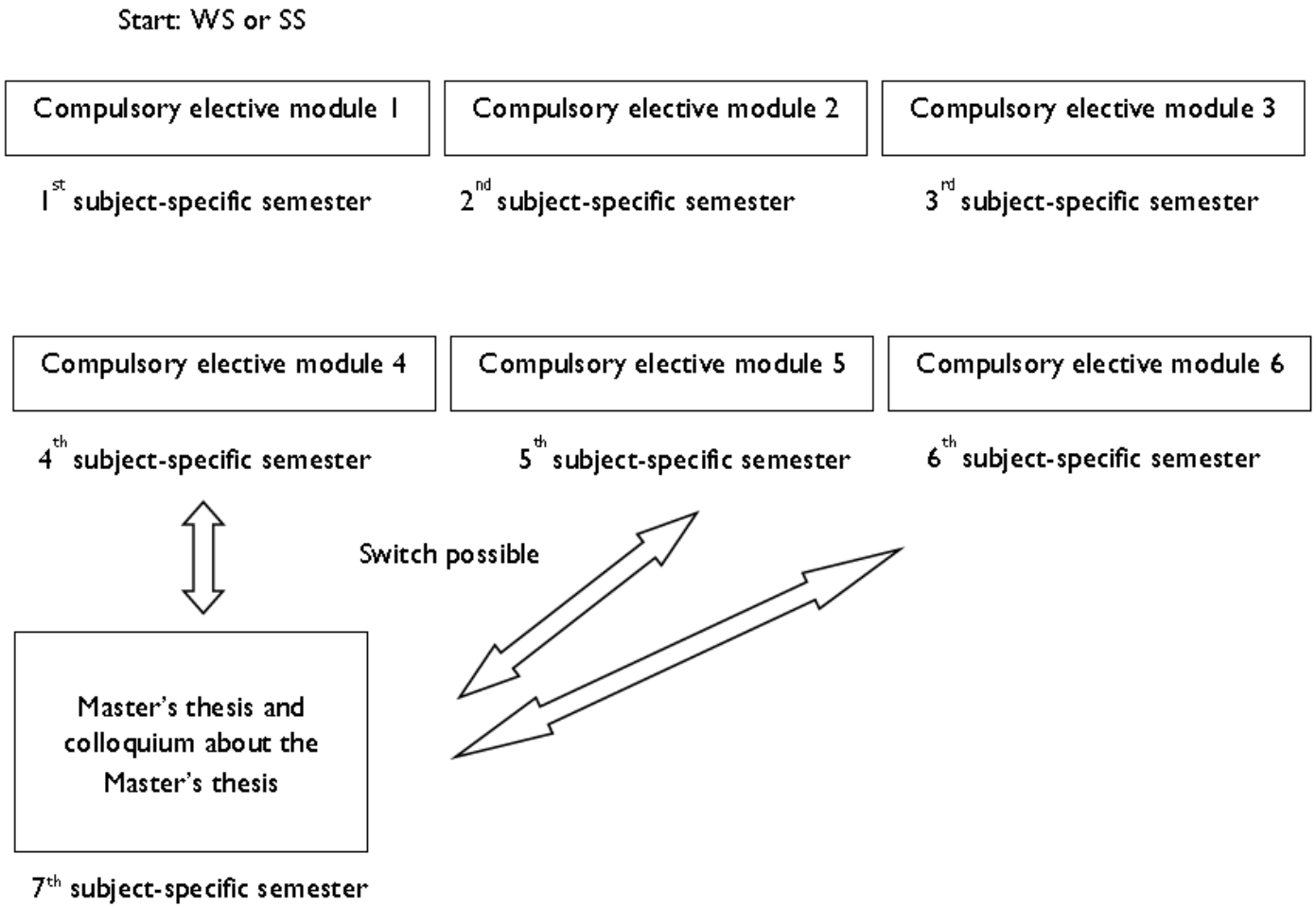
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Start: WS or SS

Switch possible ⟷

1st subject-specific semester	2nd subject-specific semester	3rd subject-specific semester
Compulsory elective module 1	Compulsory elective module 4	Master's thesis and colloquium about the Master's thesis
Compulsory elective module 2	Compulsory elective module 5	
Compulsory elective module 3	Compulsory elective module 6	

Tab. 1 Syllabus for Master's degree programme Mechanical Engineering/Mechatronics



Tab. 2 Syllabus for part-time degree programme

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Double Degree (M. Sc. in Mechanical Engineering) at University West, Trollhättan, Sweden



When to apply?

By March 1 for winter term

By September 1 for summer term

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Double Degree: Curriculum for Outgoings
120 ECTS Master Programme
(M. Sc. in Mechanical Engineering) at University West

start: autumn or spring

1. semester	2. semester	3. semester
elective module 1	Mobility Module 30 ECTS at University West (UW)	Master's thesis and colloquium 2 supervisors: HS KL & UW
elective module 2		
elective module 3		

4. semester

additionally needed
30 ECTS at UW
also online

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Modules in Summer Semester

- Fiber reinforced plastics
- Numeric methods
- Product development: from need to market
- Simulation of Mechatronic Systems
- Software engineering for embedded systems
- Virtual product development: tools and processes
- Mobility module (20/30 ECTS)
- R&D module (basis: 10 ECTS, enhancement 20/30 ECTS)
- Master‘s thesis / Master‘s thesis Research Orientation (30 ECTS)
- Energiesysteme
- Prozessentwicklung
- Ergänzende Vertiefungen, Mosaikmodul

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Modules in Winter Semester

- Automotive Engineering
- Climate-Neutral Process Engineering
- Computer Vision
- Fluid mechanics: CFD and measurement techniques
- Structural durability
- System level rapid development in mechatronics
- Mobility module (20/30 ECTS)
- R&D module (basis: 10 ECTS, enhancement 20/30 ECTS)
- Master‘s thesis / Master‘s thesis Research Orientation (30 ECTS)
- Leichtbaukonstruktion und Akustik
- Ergänzende Vertiefungen, Mosaikmodul

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15 Wahlpflichtmodule/Vorlesungsmodule (15 elective modules/lecture modules) [1]	**Professoren** (professors)	**ECTS**	**PF** (FE) [8]	**Sommersemester** (summer semester) **2026**		**Wintersemester** (winter semester) **2026/2027**		**Sommersemester** (summer semester) **2027**		**Zuordnung** (allocation)	
				Deutsch	English	Deutsch	English	Deutsch	English	ME	MT
Automotive engineering	Heidrich/Steidel	10	HA				x			7	3
Climate-neutral process engineering	Kaiser/López/Werth	10	PA				x			7	3
Computer vision	Wick/N.N.	10	A				x			2	8
Energiesysteme	Hampel/Heidrich	10	PA	x				x		7	3
Fiber reinforced plastics	Heß/Magin	10	PA		x				x	8	2
Fluid mechanics: CFD and measurement techniques [2]	N.N./Niebergall	10	PA				x			8	2
Leichtbaukonstruktion und Akustik	Heß/Kilb	10	PA			x				8	2
Numeric methods	Kiss/N.N.	10	KL or PA		x				x	5	5
Product development: from need to market	Bauer/Helmstädter/Kilb	10	PA		x					8	2
Prozessentwicklung	Kaiser/López	10	PA	x				x		7	3
Simulation of mechatronic systems	Maier/N.N.	10	KL or M		x				x	3	7
Software engineering for embedded systems [2]	Schütz/N.N.	10	KP1		x				x	2	8
Structural durability	Bleicher/Magin/Starke	10	KL or M				x			7	3
System level rapid development in mechatronics	Bitsch/N.N.	10	PA				x			1	9
Virtual product development: tools and processes	Kilb/Leiner	10	PA		x				x	7	3
4 Weitere Wahlpflichtmodule (4 further elective modules)											
Ergänzende Vertiefungen, Mosaikmodul [3]	…/Heß	10		x		x		x		**individuell festzulegen** (to be determined individually)	
F&E-Modul Basis / R&D-module basis [4]	…/Bitsch	10	PA	x	x	x	x	x	x		
F&E-Modul Aufbau / R&D-module enhancement [5]	…/Bitsch	20 / 30	PA	**nicht im ersten Semester** (not in the first semester)		x	x	x	x		
Mobilitätsmodul / mobility module (Tri- oder Semester)	…/López-López	20 / 30				x	x	x	x		
1 Optionales Wahlmodul (1 optional elective module)											
Praktikum zur Masterarbeit / Internship for Master's thesis [6]	…	15	SL			x	x	x	x		
1 Pflichtmodul (1 compulsory module)											
Masterarbeit AO oder FO / Master's thesis AO or RO [7]	…	30	MA & KOL			x	x	x	x		

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[1] **20 ECTS müssen durch Vorlesungsmodule erbracht werden. Während des gesamten Studiums können maximal 100 ECTS gewählt werden, exklusive des optionalen Wahlmoduls "Praktikum zur Masterarbeit"**
(20 ECTS have to be achieved through lecture modules, a maximum of 100 ECTS can be chosen during your whole studies, exclusive optional elective module 'Internship for Master's thesis) '

[2] **Voraussetzungen siehe Modulhandbuch** (Prerequisites see List of Modules) **https://campusboard.hs-kl.de/portalapps/sv/ModulAnsicht.do?method=view&stgid=418**

[3] **wählbare Module und weitere Erläuterungen siehe Anhang** (Selectable modules and further explanations see appendix)

[4] **Es sind maximal zwei 10-ECTS-F&E-Basis-Module in unterschiedlichen Semestern wählbar**
(A total of two 10 ECTS R&D-modules basis can be chosen in different semesters)

[5] **Voraussetzung: bestandenes10-ECTS-F&E-Basis-Modul; In Form von F&E Modulen können maximal 40 ECTS innerhalb des Studiums erbracht werden.**
(Prerequisite: passed 10 ECTS R&D-module basis; In the form of R&D-modules, a maximum of 40 ECTS can be earned within the degree programme)
Die Pflichtveranstaltung „Einführung in das Thema Forschungsanträge und Fördermittel" (Dauer 90 bis 180 min), gehalten von Pr Bomarius, ist integraler Bestandteil der 20- und 30-ECTS-R&D-Module und muss besucht werden. Melden Sie sich bitte so früh wie möglich bei Prof. Bomarius für diese Verfanstaltung an.
The compulsory course "Introduction to the topic of research proposals and funding' (duration 90 to 180 min), held by Prof. Dr rer. nat. Bomarius is integral part of the 20- and 30-ECTS-R&D-modules and has to be visited. Please register for this event with Prof. Bomarius as early as possible.

[6] **optionales Praktikum; unbenotete Studienleistung** (optional study achievement; non-grated)

[7] **muss einmal im Studienverlauf gewählt werden, kann nur angemeldet werden, wenn mindestens 30 ECTS erworben wurden, muss spätestens innerhalb des 5. Semesters (Vollzeitstudium) angemeldet werden** (has to be chosen once during the studies, can only be registered if at least 30 ECTS have been acquired, needs to be registered latest within the 5th semester for full-time-students)
AO: anwendungsorientiert (AO: application oriented),
FO: forschungsorientiert (RO: research oriented)
Die Pflichtveranstaltungen „Literatur- und Patentrecherche" (Dauer 90 min) sowie „Zitieren und Plagiate vermeiden" (Dauer 90 min), veranstaltet von Frau Heil (Hochschulbibliothek) sind integrale Bestandteile der Masterarbeit und müssen vor der Anmeldung besucht werden. Frau Heil gibt jedes Semester die Termine bekannt.
The compulsory courses 'Literature and patent research' (duration 90 min) and 'Citing and avoiding plagiarism' (duration 90 min), organised by Ms Heil (University Library) are an integral part of the Master's thesis and must be attended before registration. Ms. Heil announces the dates each semester.

[8] **PF: Prüfungsform** (FE: Form of exam);
A: Assignment; **HA: Hausarbeit** (home work); **KL: Klausur** (written exam); **KOL: Kolloquium** (colloquium); **LP: Lernportfolio** (learning portfolio)
KP1: Kombinierte Prüfung 1, Praxisaufgabe unbenotet und KL oder M benotet (combined exam 1, practical work non-grated and written or oral exam grated);
KP2: Kombinierte Prüfung 2, Praxisaufgabe unbenotet und HA benotet (combined exam 2, practical work non-grated and home work grated);
KP3: Kombinierte Prüfung 3, Präsentation Gewichtung 1/3 und KL oder M Gewichtung 2/3 (combined exam 3, presentation weighting 1/3 and written or oral exam weighting 2/3); **M: mündliche Prüfung** (oral exam);
MA: Masterarbeit (Master's thesis); **PA: Projektarbeit** (project work); **PR: Präsentation mit Fachgespräch** (presentation with technical discussion);
SL: Studienleistung (study achievement)

Specialisation

The degree programme offers a specialisation in “**Mechanical Engineering**” or “**Mechatronics**”. The specialisation is determined by the assignment number achieved. Each module is assigned assignment numbers for the specialisations “Mechanical Engineering” and “Mechatronics”. To determine which specialisation is being studied, the assignment numbers of the completed modules related to the specialisation are added up; **the specialisation with the highest sum of the assignment numbers is considered to be selected and is shown in the transcript of records**. If the sums determined are equal, the Examination Board shall make the decision; students shall be given the opportunity to state their opinion before a decision is made.

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