Catalogue of Modules for the „International Engineering Certificate"

Field of concentration **„Mechanical Engineering"**

1) Nr.	2) Modules	3) Hours (45 min) per week	4) ECTS-credit-points[1]	5) Lecture given in winter semester and/or summer semester?
2	<u>Technical Modules</u> (Lectures given in English)			
2.1	**Advanced Course in Mechanical Engineering (various lecturers)**	Attendance: 4	5 ECTS	**If available**
2.2	**Advanced Fluid Mechanics (Prof. Liepsch, FK05)**	Attendance: 4	5 ECTS	**WS**
2.3	**Automotive Mechatronics II (Prof. Krug)**	Attendance: 4	5 ECTS	**SS**
2.4	**Composite Materials (Prof. Horoschenkoff)**	Attendance: 4	5 ECTS	**SS**
2.5	**Dynamics for Engineers (Prof. Wolfsteiner)**	Attendance: 4	5 ECTS	**SS / WS**
2.6	**Fatigue and Fracture (Prof. Dr. Rother)**	Attendance: 4	6 ECTS	**SS / WS**
2.7	**Fluid Mechanics (Prof. Schiebener)**	Attendance: 4	5 ECTS	**SS**
2.8	**Fluid Mechanics (Prof. Liepsch, FK05)**	Attendance: 4	5 ECTS	**WS**
2.9	**Fundamentals of Computational Fluid Dynamics (Prof. Gubner)**	Attendance: 4	5 ECTS	**SS**
2.10	**Mechanical Engineering Project (Prof. Schwerin)**	Attendance: 3	5 ECTS	**SS / WS**
2.11	**Multibody Dynamics (Prof. Wiedemann, FK06)**	Attendance: 4	5 ECTS	**WS**
2.12	**Plant Engineering (Prof. Herz, FK05)**	Attendance: 4	5 ECTS	**WS**
2.13	**Thermodynamics (Prof. Perez Ponce, FK05)**	Attendance: 4	5 ECTS	**SS / WS**
2.14	**Bachelor's Thesis (Prof. Andreas Eursch)**		5 ECTS	**SS / WS**
2.15	**Master's Thesis (N.N.)**		5 ECTS	**SS / WS**
2.16	Other engineering courses of FK03, 04, 05, 06, 07, 08, 09 (no more than one)			

[1] One ECTS credit point represents a workload of approximately 30 hours (Preparation, lecture, learning, exams, etc.).

Field of concentration **„Automotive Engineering"**

1) Nr.	2) Modules	3) Hours (45 min) per week	4) ECTS-credit-points[2]	5) Lecture given in winter semester and/or summer semester?
3	**Technical Modules** (Lectures given in English)			
3.1	**Advanced Course in Automotive Engineering (various lecturers)**	Attendance: 4	5 ECTS	**If available**
3.2	**Automotive Engineering Project (Prof. Rohnen)**	Attendance: 3	5 ECTS	**SS / WS**
3.3	**Automotive Mechatronics II (Prof. Krug)**	Attendance: 4	5 ECTS	**SS**
3.4	**Composite Materials (Prof. Horoschenkoff)**	Attendance: 4	5 ECTS	**SS**
3.5	**Automotive Engineering, with lab (Prof. Mintzlaff)**	Attendance: 4	5 ECTS	**SS**
3.6	**Dynamics for Engineers (Prof. Wolfsteiner)**	Attendance: 4	5 ECTS	**SS / WS**
3.7	**Fatigue and Fracture (Prof. Dr. Rother)**	Attendance: 4	6 ECTS	**SS / WS**
3.8	**Fluid Mechanics (Prof. Schiebener)**	Attendance: 4	5 ECTS	**SS**
3.9	**Fluid Mechanics (Prof. Liepsch, FK05)**	Attendance: 4	5 ECTS	**WS**
3.10	**Fundamentals of Computation-al Fluid Dynamics (Prof. Gubner)**	Attendance: 4	5 ECTS	**SS**
3.11	**Impact Simulation of Vehicle Structures (Prof. Gitterle)**	Attendance: 4	6 ECTS	**SS**
3.12	**Internal Combustion Engines (Profs. Doll, Rau)**	Attendance: 4	4 ECTS	**SS**
3.13	**Multibody Dynamics (Prof. Wiedemann, FK06)**	Attendance: 4	5 ECTS	**WS**
3.14	**Thermodynamics (Prof. Perez Ponce, FK05)**	Attendance: 4	5 ECTS	**SS / WS**
3.15	**Vehicle Dynamics (Prof. Pfeffer)**	Attendance: 4	5 ECTS	**SS**
3.16	**Bachelor's Thesis (Prof. Johannes Mintzlaff)**		5 ECTS	**SS / WS**
3.17	**Master's Thesis (N.N.)**		5 ECTS	**SS / WS**
3.18	Other engineering courses of FK03, 04, 05, 06, 07, 08, 09 (no more than one)			

[2] One ECTS credit point represents a workload of approximately 30 hours (Preparation, lecture, learning, exams, etc.).

Field of concentration **„Aeronautical Engineering"**

1) **Nr.**	2) **Modules**	3) **Hours (45 min) per week**	4) **ECTS-credit-points**[3]	5) **Lecture given in winter semester and/or summer semester?**
4	**Technical Modules** **(Lectures given in English)**			
4.1	**Advanced Course in Aeronautical Engineering (various lecturers)**	Attendance: 4	5 ECTS	**If available**
4.2	**Advanced Fluid Mechanics (Prof. Liepsch, FK05)**	Attendance: 4	5 ECTS	**WS**
4.3	**Aerospace Control Systems (Prof.Nitzsche)**	Attendance: 6	6 ECTS	**SS**
4.4	**Aerospace Engineering Project (Prof. Pietras)**	Attendance: 3	5 ECTS	**SS / WS**
4.5	**Composite Materials (Prof. Horoschenkoff)**	Attendance: 4	5 ECTS	**SS**
4.6	**Dynamics for Engineers (Prof. Wolfsteiner)**	Attendance: 4	5 ECTS	**SS / WS**
4.7	**Fatigue and Fracture (Prof. Dr. Rother)**	Attendance: 4	6 ECTS	**SS / WS**
4.8	**Fluid Dynamics (Prof. Schiebener)**	Attendance: 4	5 ECTS	**SS**
4.9	**Fluid Dynamics (Prof. Liepsch, FK05)**	Attendance: 4	5 ECTS	**WS**
4.10	**Fundamentals of Computational Fluid Dynamics (Prof. Gubner)**	Attendance: 4	5 ECTS	**SS**
4.11	**Thermodynamics (Prof. Perez Ponce, FK05)**	Attendance: 4	5 ECTS	**SS / WS**
4.12	**Bachelor's Thesis (Prof. Björn Kniesner)**		5 ECTS	**SS / WS**
4.13	**Master's Thesis (Prof. Björn Kniesner)**		5 ECTS	**SS / WS**
4.14	Other engineering courses of FK03, 04, 05, 06, 07, 08, 09 (no more than one)			

[3] One ECTS credit point represents a workload of approximately 30 hours (Preparation, lecture, learning, exams, etc.).

Field of concentration **„ Engineering and Management Automotive "**

1) Nr.	2) Modules	3) Hours (45 min) per week	4) ECTS-credit-points[4]	5) Lecture given in winter semester and/or summer semester?
5	**Technical Modules** (Lectures given in English)			
5.1	**Advanced Course in Automotive Engineering (various lecturers)**	Attendance: 4	5 ECTS	**If available**
5.2	**Automotive Engineering Project (Prof. Rohnen)**	Attendance: 3	5 ECTS	**SS / WS**
5.3	**Automotive Mechatronics II (Prof. Krug)**	Attendance: 4	5 ECTS	**SS**
5.4	**Composite Materials (Prof. Horoschenkoff)**	Attendance: 4	5 ECTS	**SS**
5.5	**Automotive Engineering, with lab (Prof. Mintzlaff)**	Attendance: 4	5 ECTS	**SS**
5.6	**Dynamics for Engineers (Prof. Wolfsteiner)**	Attendance: 4	5 ECTS	**SS / WS**
5.7	**Fatigue and Fracture (Prof. Dr. Rother)**	Attendance: 4	6 ECTS	**SS / WS**
5.8	**Fluid Mechanics (Prof. Schiebener)**	Attendance: 4	5 ECTS	**SS**
5.9	**Fluid Mechanics (Prof. Liepsch, FK05)**	Attendance: 4	5 ECTS	**WS**
5.10	**Fundamentals of Computational Fluid Dynamics (Prof. Gubner)**	Attendance: 4	5 ECTS	**SS**
5.11	**Impact Simulation of Vehicle Structures (Prof. Gitterle)**	Attendance: 4	6 ECTS	**WS**
5.12	**Internal Combustion Engines (Profs. Doll, Rau)**	Attendance: 4	4 ECTS	**SS**
5.13	**Multibody Dynamics (Prof. Wiedemann, FK06)**	Attendance: 4	5 ECTS	**WS**
5.14	**Thermodynamics (Prof. Perez Ponce, FK05)**	Attendance: 4	5 ECTS	**SS / WS**
5.15	**Vehicle Dynamics (Prof. Pfeffer)**	Attendance: 4	5 ECTS	**SS**
	Economic Modules (Lectures given in English)			
5.16	**Marketing and Sales Basics (Prof. Elias, FK09)**	Präsenzstudium: 3 SWS	5 ECTS	**WS**
5.17	**Marketing and Sales Automotive (Prof. Elias, FK09)**	Präsenzstudium: 4 SWS	5 ECTS	**SS**
	Other Modules (Lectures given in English)			

[4] One ECTS credit point represents a workload of approximately 30 hours (Preparation, lecture, learning, exams, etc.).

5.18	**Bachelor's Thesis (Prof. Jörg Elias)**		5 ECTS	**SS / WS**
5.19	**Master's Thesis (Prof. Jörg Elias)**		5 ECTS	**SS / WS**
5.20	Other engineering courses of FK03, 04, 05, 06, 07, 08, 09 (no more than one)			