

Appendix 1 to the Special Part of the Examination Regulations for the Master's Degree Programme „Battery and Hydrogen Technology“

A – Compulsory Area (15 LP/CP)

The following compulsory courses have to be taken:

Courses	LP/CP
Future Battery Production Systems	5
Hydrogen as Future Energy Carrier	5
Modern Modelling and Artificial Intelligence	5

B – Compulsory Elective Area (35 LP/CP)

From the following compulsory elective courses 7 have to be selected:

Courses	LP/CP
Additive Layer Manufacturing	5
Advanced Fluid Separation Processes	5
Analytics and Testing in Surface Technology	5
Application of Commercial RD Software	5
Characterization of Surfaces and Coatings	5
Computer-Aided Process Engineering I (Introduction)	5
Computer-Aided Process Engineering II	5
Data Science in Fluid Mechanics	5
Digital Circuit Design	5
Digital Technologies in Process Engineering	5
Energy-Efficient Machinery in Mechanical Process Engineering	5
Energy Efficiency in Production Engineering	5
Energy Turnaround - Industrial Hydrogen Applications	5
Formulation Technology for Components of Battery and Hydrogen Systems	5
Fuel Cell Systems	5
Ceramic Materials / Polymer Materials	5
Life Cycle Assessment for Sustainable Engineering	5
Material Cycles of Energy Storage Systems and Converters	5
Methods of Process Modeling and Optimization	5
Microscopic and Particle Measurements in the Micro- and Nanometer Range	5

Courses	LP/CP
Modeling and Simulation of Hydrogen-Based Energy Systems	5
Modern Batteries for BHT	5
Molecular Simulation	5
Numerical Simulation of Reactive Flows	5
Numerical Methods for Differential Equations	5
Numerical Simulation (CFD)	5
Service Management Track	5
Process Technology of Nanomaterials	5
Industrial Engineering for Electric Mobility	5
Process and Plant Safety	5
Separation and Purification of Energy Carriers	5
Simulation Methods in Particle Technology	5
Smart Sensing in Fluid Dynamics	5
Specialization in Law	5
Materials Technology for the Circular Economy	5

C – Practical Lab Work (12 LP)

The following laboratory courses have to be taken:

Courses	LP/CP
Interdisciplinary Laboratory Hydrogen	6
Interdisciplinary Research Lab Battery	6

D – Interdisciplinary Specialization (13 LP/CP)

The following course has to be taken:

Course	LP/CP
Interdisciplinary Specialization: • Language classes up to the amount of 12 LP/CP (determined by the Selection Committee) • Rest: Free selection	13

E – Study Research Project (15 LP/CP)

The following course has to be taken:

Course	LP/CP
Study Research Project	15

F – Finale Module (30 LP/CP)

The following course has to be taken:

Course	LP/CP
Final Module	30