

| Basic Areas                                                                                        |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | ECTS |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------|------------------------------------------|------------------------------------------------------------|---------------------------|---------------------------------|------|
| Connected Knowledge in Materials Science                                                           |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 7    |
| → Introduction into important Materials Science Basics                                             |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 |      |
| Materials Science → Choose 3 modules reflecting your interests                                     |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 15   |
| Biomaterials & Biocomponents                                                                       | Polymer Materials & Technology                                         | Functional Materials & Systems Aspects for Energy and Environmental Technology |                                                  | Ceramic Matrix Composites                | Basics of Metallic Materials                               |                           |                                 |      |
| Informatics                                                                                        |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 10   |
| Python and Machine Learning for Non-Programmers                                                    |                                                                        |                                                                                |                                                  | Numerical Methods and Applied Statistics |                                                            |                           |                                 |      |
| Sustainability                                                                                     |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 10   |
| Environmental and Resource Technology                                                              |                                                                        |                                                                                |                                                  | Carbon & Life Cycle Management           |                                                            |                           |                                 |      |
| Focus Areas → Choose 5 modules in total and at least 1 module from each Focus Area                 |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 25   |
| Sustainable Applications & Processes for Materials                                                 |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 |      |
| Polymer Systems for Sustainable Applications                                                       | Biomaterials and Biofabrication MOOC                                   | Energy Materials                                                               | Hydrogen Embrittlement: Phenomenon and mechanism | Polymer Interfaces and Biosensors        | Battery Materials 1                                        | Laboratory to Fabrication | Biomimetics                     |      |
| Circular Economy & Sustainable Raw Materials                                                       |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 |      |
| Sustainable Polymer Chemistry and Polymer Materials                                                |                                                                        | Materials Selection across Materials Classes                                   |                                                  | Critical Raw Materials                   | Sustainable Business Innovation                            |                           |                                 |      |
| Digitalization in Materials Science                                                                |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 |      |
| Computational Materials Modeling                                                                   |                                                                        | Simulation, Programming & Data Analysis                                        |                                                  | Materials Informatics                    |                                                            | Data Science for Polymers |                                 |      |
| Research Module Area                                                                               |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 12   |
| → Choose 2 Research modules at participating chairs                                                |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 |      |
| Individual Knowledge Development                                                                   |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 5    |
| → Choose 1 module from another Master's program                                                    |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 |      |
| Social, Economical and Legal Aspects of Sustainability → Choose 1 module reflecting your interests |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 6    |
| Principals of Entrepreneurship                                                                     | Impact Entrepreneurship – Developing Social and Ecological Innovations |                                                                                | Innovation Management                            |                                          | Social Entrepreneurship Cases: Analyzing Social Businesses |                           | Technopreneurship for Engineers |      |
| Master Thesis                                                                                      |                                                                        |                                                                                |                                                  |                                          |                                                            |                           |                                 | 30   |