| Module title | 4.5 Circular design |
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| **Workload (ECTS)** | 3 ECTS |
| **Module coordinator** | Dr. Christelle Ganne-Chédeville |
| **Contributing lecturers** | • Aymeric David Niederhauser<br>• Florian Jakober<br>• Lorenz Probst |
| **Entry requirements** | Builds on:<br>• 1.1: Technological cycle: materials processes<br>• 1.2: Biological cycle: environmental systems<br>• 2.1: Circular business models |
| **Description** | Starting from an introduction of the history of ecodesign you will learn step-by-step the methodology of ecodesign and apply it to your own project for an increased circularity. In a first step you analyze the reference situation based on ecological LCA and life cycle costing, then thanks to circular design tools you create and select circular ideas for improvement of the situation, you will assess and improve them and finally communicate them successfully. |
| **Learning outcomes and competences** | **Competences:**<br><br>Students<br>• Learn to apply Eco-design and Circular Design methodology to their own study,<br>• Learn to develop, with the help of specific tools as well as creativity methods, sustainable alternative products, processes and strategies with a smart use of available resources and enhancing circularity.<br>• Learn to create solutions which offer as much possible benefit for all value chain stakeholders with the lowest environmental impact as possible and in the fairest conditions as possible.<br>• present, their own project, critically assess and give feedback to projects of other participants<br><br>**Outcome**:<br><br>Students<br>• are able to explain the historical emergence, development and relevance of Circular Design from different perspectives<br>• learn to analyse the sustainability and reflect the current situation of the own project showing drawbacks, strength and potential of circularity.<br>• develop a portfolio of innovative and circular solutions for your own project.<br>• assess quantitatively the ecological and economic performance of optimized circular solution<br>• chose the right communication media(s) for their developed circular solution. |
| **Assessment of learning outcomes** | • Project work in groups<br>• Written reports<br>• Oral presentations |
| **Didactic approach** | • Contact teaching<br>• coaching |

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| | • individual and group exercises<br>• flipped classroom<br>• readings |
| **Project-based learning** | The module content will be applied to a self-selected project, case or problem. A selected own project idea is mandatory to follow that course. |
| **Links to other modules** | • 4.4 Impact assessment |
| **Bibliography** | Literature will be provided before the start of the module |
| **Language** | English |
| **Location** | TBD |