# Course Descriptions None 2025-2026

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| Course Title | Biobased Materials |
| Course Code | BENC2015 |
| ECTS Credits | 5,0 |
| Assessment | Whole/Half Grades |

Period

| Period | Start | End | Mon | Tue | Wed | Thu | Fri |
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| 2 | 27-10-2025 | 12-12-2025 | X | | X | | L |

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| Level | no level |
| Coordinator | Yvonne van der Meer For more information:yvonne.vandermeer@maastrichtuniversity.nl |
| Language of instruction | English |
| Goals | * To provide an introduction and overview of renewable feedstock types and their biological and chemical pathways via biorefineries towards biobased building blocks, chemical intermediates, biobased materials, and products;<br>* To provide students with a detailed understanding of waste management of biobased materials and the circularity approaches (7Rs - Redesign, Reduce, Reuse, Repair, Renew, Recover and Recycle) for (more) circular biobased materials<br>* To discuss important aspects of the sustainability of biobased materials: environmental impact (incl. carbon footprint), economic and social impacts<br>* To identify and discuss the challenges and opportunities (technological, sustainability, and societal) for biobased and circular materials in the transition towards a biobased and circular economy and society (technological, sustainability, and societal aspects) |
| Description | Concerns about climate change and the secure supply of industrial feedstock sources have accelerated the interest in and the development of biobased materials. However, scientists, companies, and policymakers face technological, environmental, and societal challenges to develop the materials of the future that fulfil the required functions in society and are also more sustainable.<br>This course aims to create a critical as well as a creative and inventive circular attitude towards biobased materials. Students will be introduced to the field of Biobased Materials in a multidisciplinary approach in which biology, chemistry, engineering, and sustainability studies are integrated to study and design the materials of the future. This creates an opportunity to not only replace currently made materials (like plastics and polymers) with biobased alternatives but also to produce new materials derived from renewable biological sources. Moreover, circularity principles (the 7 Rs) and improved end-of-life scenarios (biodegradation, composting, recycling) will play a central role in providing the most sustainable materials. |
| Literature | A list of selected scientific papers and (policy) reports will be provided during the course. |
| Prerequisites | BENC1007 Materials Engineering<br>BENC1008 Experimentation in Science and Engineering |
| Keywords | |
| Transitional Regulations | |
| Teaching methods | Presentation / Lecture |
| Assessment methods | Written Exam / Presentation |
| Evaluation in previous academic year | For the complete evaluation of this course please click http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM |

This course belongs to the following programme / specialisation

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| Bachelor Business Engineering | Year 3 Elective Courses |