FACT SHEET BIP 2027

Organizing institution	Hochschule Aalen (Erasmus code: D AALEN01)
Partners	Università degli Studi di Napoli Federico II Istanbul Technical University
Are you looking for partners?	Yes, new (Euclides) partners are welcome
Title / Name BIP *(Enter the official name of the BIP)*	Green Additive Manufacturing of Composite Materials for Sustainable Applications. Acronym: GAMeCS
Abstract *(Brief summary of the activity – what it is about in 3–5 lines)*	The Blended Intensive Programme (BIP) "Green Additive Manufacturing of Composite Materials for Sustainable Applications" aims to provide students with advanced interdisciplinary knowledge on the design, manufacturing and characterization of composite materials produced by additive manufacturing, with a strong focus on sustainability.
Goal *(What is the main objective or purpose?)*	The main objective of the programme is to explore how additive manufacturing technologies can be leveraged to develop or utilise low environmental impact ("green") composite materials and to design lightweight and efficient structures. Particular emphasis is placed on the use of bio-based or recycled matrices and reinforcements, as well as on design strategies that reduce material usage and energy consumption while maintaining or tailoring mechanical performance.
Topics covered *(List the key themes or subject areas that will be addressed)*	The BIP integrates concepts from materials science, mechanical design and sustainable manufacturing, encouraging students to critically assess the environmental impact of composite components throughout their design and production phases. Through a combination of theoretical lectures, case studies and practical activities, students will gain insight into the relationship between material selection, processing parameters and structural performance. The programme also aims to foster international and intercultural collaboration among students and academic staff from different European institutions, promoting teamwork, problem-solving skills and innovation in the field of sustainable additive manufacturing. By the end of the BIP, students will be able to propose and evaluate composite solutions that align with sustainability principles and industrial needs.
Expected outcome(s) *(What should students gain or achieve by the end?)*	Expected learning outcomes include: • the ability to select suitable green composite materials for additive manufacturing applications; • the capability to design lightweight structures using optimized printing parameters; • an understanding of the trade-offs between sustainability, performance and manufacturability; • enhanced teamwork, communication and problem-solving skills in an international context. The outcome of the BIP will be the presentation of group projects, in which students will critically justify their design choices based on sustainability and performance criteria.

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Start and end date of the BIP	08.03.27 to 12.03.27
Content of virtual component *(Describe any online or hybrid elements – e.g., webinars, online modules, collaborative tools)*	The virtual component of the BIP will be delivered through online platforms and will precede the physical mobility phase. It is designed to prepare students for the intensive on-site activities and to maximize the effectiveness of the in-person collaboration. The virtual phase will include a series of synchronous online lectures and asynchronous learning materials covering: • fundamentals of composite materials and green composites; • overview of additive manufacturing technologies for polymers and composites; • principles of sustainable design and life-cycle thinking; • design strategies for lightweight structures, including infill optimization and layer thickness variation. Interactive elements such as virtual discussions, quizzes and short assignments will be used to actively engage students and encourage interaction among participants from different institutions. Students will also be introduced to the project topic and grouped into international teams during the virtual phase. By the end of the virtual component, students will have acquired the theoretical background necessary to actively participate in the hands-on activities and project work during the physical mobility phase, ensuring continuity and coherence between the online and in-person parts of the BIP. The virtual component ends with its Phase 2, a day onto which outcomes will be presented.
Start and end date of the virtual component	Phase 1: 01.03.27 to 05.03.27 Phase 2: 26.03.27 (presentations of outcomes).
Maximum number of students *(Total number of participants allowed)*	40 (incoming) of which max 12 from Euclides partners
Student backgrounds & prerequisites Study backgrounds: Minimum level of students:	Study backgrounds of students should be from Production and Process Engineering related programmes such as Mechanical, Production, Product Development & Design or Plastics Engineering as well as Chemical, Materials, Polymer or Surface Engineering… Min. 3rd and 4th year Bachelor, Master, PhD
Maximum number per university *(Limit per institution, if applicable)*	Max 3-4 per Euclides partner
Webpages More information: Short stays at Aalen University:	https://euclidesnet.eu/events/ https://aalen.instructure.com/courses/10975/pages/bip-march-2027 https://aalen.instructure.com/courses/10975/pages/short-stays-at-aalen-university
BIP ID *(If already available)*	2026-1-DE01-KA131-HED-000430291-1
Information for learning agreement:	**Course Number Host Institution:** 14803 (Scientific Project) **Course Title Host Institution:** Green Additive Manufacturing of Composite Materials for Sustainable Applications **ECTS-credits:** 5 **Responsible person to sign DLA:** Prof. Dr. Iman Taha (iman.taha@hs-aalen.de).