

SDG09

INDUSTRY, INNOVATION AND INFRASTRUCTURE

BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALISATION AND FOSTER INNOVATION

RESEARCH ON INDUSTRY, INNOVATION AND INFRASTRUCTURE

SDG9 PUBLICATIONS

INDUSTRY PARTNERSHIPS, INNOVATION AND ENTREPRENEURSHIP

STUDENT INNOVATION, ENTREPRENEURSHIP AND APPLIED LEARNING

TECHNOLOGY, AI AND DIGITAL TRANSFORMATION

INNOVATION, PATENTS AND APPLIED RESEARCH

AWARDS, RECOGNITION AND INNOVATION ACHIEVEMENTS

PROMOTING SDG 9 THROUGH STUDENT ACTIVITIES

ALBA: DESIGN INNOVATION, DIGITAL TECHNOLOGIES AND CREATIVE INFRASTRUCTURE

IMPACT STATEMENT

Key Highlights (2025-2026)

- 51 SDG 9-related research publications
- 5 strategic industry and innovation partnerships
- 1 innovation hub launched (BBIC)
- 2 registered patents secured (ENVIBOT, INVERTICA)
- 3 internationally funded innovation projects (PHC CEDRE, RL4Eng, SALAM)
- 62 student-led innovation projects showcased
- 1 national innovation award (LIRA Program 2025)
- 2 advanced research and training platforms established (Medical Simulation Center, QIAcuity Digital PCR System)
- 1 Formula Student team representing Lebanon internationally
- 40 students trained in AI-enabled design through ALBA
- 1 student-led circular manufacturing initiative converting plastic waste into 3D-printing filament

RESEARCH ON INDUSTRY, INNOVATION AND INFRASTRUCTURE

Over the past two years, the University of Balamand (UOB) has contributed significantly to SDG 9: Industry, Innovation and Infrastructure through 51 research publications advancing sustainable infrastructure, industrial innovation, digital transformation, advanced manufacturing, renewable energy, transportation systems, artificial intelligence, and circular economy solutions [1–51].



Research on sustainable infrastructure and construction materials explored low-carbon and geopolymer construction materials, sustainable pavement systems, climate-resilient infrastructure design, earth-block stabilization techniques, and life-cycle assessment approaches that support more sustainable and resilient built environments [1,2,7,10,14,15,26,30,32,33,39,43]. Studies also examined resource-efficient industrial systems, environmental performance assessment, wastewater treatment technologies, and sustainable manufacturing processes [11,12,13,27,28].

In the area of industrial innovation and advanced technologies, researchers investigated artificial intelligence, machine learning, augmented reality, smart logistics, digital transformation, innovation management, enterprise risk management, and technology-enabled business performance [8,19,24,29,37,40,50]. Additional research addressed industrial competitiveness, innovation ecosystems, entrepreneurial ventures, and data-driven assessments of industrial development in Lebanon [5,6].

UOB also contributed to innovation in renewable energy, clean technologies, and circular economy solutions through studies examining biodiesel production, renewable energy systems, carbon recycling technologies, sustainable packaging, microalgal biorefineries, biomass valorization, and waste-to-resource approaches that promote cleaner production and resource efficiency [4,25,27,45,47,48,49,51].

Research in biotechnology, biomedical innovation, and emerging technologies advanced knowledge in bioprinting, metabolic engineering, bioprocessing, food technologies, antimicrobial innovations, and healthcare-related technological applications [3,20,21,22,34,35,41,42,44]. Additional studies explored the role of climate adaptation, water security, and sustainable resource management in supporting resilient infrastructure and regional development [23,31].

Complementing these efforts, the University's Climate Diplomacy and Sustainable Peace (CDSP) Hub promotes innovation and knowledge transfer in water security, climate resilience, and sustainable resource management through interdisciplinary research, international collaborations, and initiatives focusing on the Water-Energy-Food-Ecosystems (WEFE) Nexus, hydrodiplomacy, and transboundary water governance.

Collectively, these research contributions strengthen innovation capacity, support sustainable infrastructure development, promote industrial modernization, accelerate digital transformation, and advance technology-driven solutions that contribute to sustainable economic development in Lebanon and beyond [1–51].

SDG9 PUBLICATIONS

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INDUSTRY PARTNERSHIPS, INNOVATION AND ENTREPRENEURSHIP

University-Industry Advisory Boards

The University of Balamand strengthens the quality, relevance, and impact of its academic programs through a network of university-industry advisory boards that connect students and faculty with leaders from business, engineering, healthcare, and academia.

- The Faculty of Business and Management is supported by its Local Board of Advisors, comprising senior executives and experts from the banking, telecommunications, economics, agribusiness, human resources, and corporate sectors who provide strategic guidance on curriculum development, industry engagement, innovation, and workforce readiness (Local Board of Advisors).
- The Faculty of Engineering maintains several industry-focused advisory bodies, including the Civil and Environmental Engineering International Advisory Board, the Chemical Engineering International Advisory Board, and the Mechanical Engineering Professional Advisory Board, bringing together leaders from organizations such as ACI, Khatib & Alami, ACTS, TotalEnergies, INDEVCO, KSARA and MEA to strengthen industry alignment, accreditation, internships, innovation, and graduate employability.
- The Faculty of Health Sciences benefits from an International Advisory Board composed of distinguished experts from leading global institutions (International Advisory Board).
- The Faculty of Medicine's Dean's International Advisory Board provides strategic guidance on medical education, clinical training, research, and international collaboration through the expertise of distinguished healthcare leaders and physicians (University of Balamand | Advisory Board).

This supports SDGs 4, 9, 8, and 17.

Strategic Partnerships

Furthermore, the university collaborates with different industries and business organizations through strategic partnerships, recruitment initiatives, technology transfer activities, internships, and entrepreneurship programs. Among these are MOUs with the Lebanese Private Sector Network (LPSN), the Ministry of State for Information Technology and Artificial Intelligence, BIAT, Microsoft, and Forward Digital MENA, all aimed at enhancing innovation, employability, digital transformation, and economic development.

This supports SDGs 9, 8, 16 and 17.

Partner	***Type of Collaboration***	***Key Focus Areas***
Lebanese Private Sector Network (LPSN)	Memorandum of Understanding	Strengthening academia-industry collaboration, internships, employment pathways, artificial intelligence integration, and support for economic recovery initiatives.
Business Incubation Association in Tripoli (BIAT)	Strategic Partnership and Innovation Center and Memorandum of Understanding	Entrepreneurship, startup incubation, commercialization of research, technology transfer, business development, and sustainable regional economic growth through the BIAT-Balamand Innovation Center (BBIC).
Microsoft	Memorandum of Understanding	Artificial intelligence education, AI skills development, capacity building, exploration of a Center of Excellence, and preparation of students and staff for the digital economy.
Ministry of State for Information Technology and Artificial Intelligence	Memorandum of Understanding	Research collaboration, digital transformation, artificial intelligence, emerging technologies, training, capacity building, and knowledge exchange supporting national digital priorities.
Forward Digital MENA	Memorandum of Understanding	Digital literacy, industry-recognized certifications, employability enhancement, digital skills development, and access to online learning platforms for students and alumni.

Innovation Hubs and Entrepreneurship Infrastructure

BIAT-Balamand Innovation Center (BBIC)

The University and BIAT launched the BIAT-Balamand Innovation Center (BBIC) in October 2025, a major innovation and entrepreneurship hub in North Lebanon supporting startup incubation, commercialization of research, mentorship, technology transfer, business development, and industry collaboration. The center serves students, entrepreneurs, researchers, and local businesses while promoting sustainable economic growth and innovation. For more info click here: BBIC — Fostering Innovation. Empowering Leaders.

This supports SDGs 9, 8 and 17.

Entrepreneurship and Startup Development

Business Development and Entrepreneurship Programs

The University actively promotes entrepreneurship and innovation through a range of curricular and extracurricular initiatives designed to equip students with the skills needed to transform ideas into viable ventures. Through the Entrepreneurs Program, implemented in collaboration with the "INSAN Foundation", students participated in intensive training, mentoring, workshops, and project development activities that culminated in the presentation of entrepreneurial solutions addressing real community and market needs. The program empowered participants to develop business concepts, strengthen innovation and leadership skills, and gain practical experience in transforming ideas into sustainable opportunities. This supports SDGs 9, 4 and 8.

62 student-led innovation projects showcased

IDEALAB Startup Program

Entrepreneurial learning was further strengthened through participation in the IDEALAB Startup Program, delivered in partnership with INJAZ Lebanon and BERYTECH.

The program supported students in developing early-stage startups in cleantech and agrifood technology through coaching, market validation, prototyping, and pitching activities. Several University teams were recognized among the program's winning projects, demonstrating students' capacity to develop innovative solutions with commercial and societal value.



This supports SDGs 9, 4, 8, and 12.



Student Innovation, Entrepreneurship and Applied Learning

Business Expo 2025-2026: Showcasing Student Innovation, Entrepreneurship, and Industry-Ready Talent

For two consecutive years, the Faculty of Business and Management (FOBM), in collaboration with the Business Connections Club, successfully organized the Business Expo 2025 and Business Expo 2026 at the University of Balamand's Koura Campus, providing students with a dynamic platform to showcase innovation, entrepreneurship, creativity, and applied business knowledge.



These annual events brought together students, faculty members, industry professionals, and external experts, creating an environment that bridged academic learning with real-world business practice.



Students from the Koura Campus and the Souk El Gharb Business Programs presented a diverse range of projects, including entrepreneurial ventures, technology-based and AI-driven solutions, marketing campaigns, strategic business plans, research projects, service innovations, and existing businesses operated by students.



In 2026, the expo expanded significantly, featuring 62 student-led projects organized under three specialized tracks: Startup & Innovation, Marketing Excellence, and Strategic Creativity. Through interactive exhibition booths and live pitching sessions, students had the opportunity to present their ideas, receive feedback from faculty and industry experts, and demonstrate competencies in research, critical thinking, strategic planning, innovation, and communication.



Projects were evaluated by panels composed of UOB faculty members and external professionals based on criteria such as innovation, feasibility, creativity, presentation quality, and business impact. The expos also fostered networking, collaboration, and experiential learning, allowing students to engage directly with potential mentors and professionals while gaining practical exposure to contemporary business challenges.



The events concluded with recognition of outstanding projects through awards that celebrated excellence across various categories. Reflecting on the initiative, Dr. Karim Rebeiz, Dean of FOBM, emphasized the expo's role in promoting experiential learning and providing students with valuable opportunities to showcase their ideas, interact with experts, and receive constructive feedback. Through these successful editions, the Business Expo has become a flagship faculty event that demonstrates UOB's commitment to innovation, entrepreneurship, student engagement, and the development of future business leaders equipped to navigate an evolving and increasingly technology-driven marketplace.





This supports SDGs 9, 4 and 8.

TECHNOLOGY, AI AND DIGITAL TRANSFORMATION

Strategic AI and Digital Transformation Initiatives

The University expanded its leadership in artificial intelligence and digital transformation through a series of initiatives. The University organized a range of lectures, workshops, and knowledge-sharing activities addressing the opportunities and challenges associated with emerging technologies. Discussions explored the impact of artificial intelligence on creative industries through a lecture on AI and graphic design, examined the evolving relationship between AI and the Arabic language, and brought together academic and industry stakeholders through a roundtable on future skills and digital transformation. These initiatives encouraged critical reflection on technological change while promoting innovation, digital literacy, interdisciplinary collaboration, and awareness of the evolving demands of the future workforce.



This supports SDGs 9, 4, 8 and 16.

The University hosted lectures, workshops, seminars, and research initiatives focused on artificial intelligence, machine learning, digital transformation, technology commercialization, and future workforce development.



The workshop “From Sensors to Smartphones: Build Your First Smart System” introduced high school students to IoT, Artificial Intelligence, smart sensors, and mobile applications through hands-on learning and live demonstrations. The initiative enhanced participants’ digital, technical, and problem-solving skills while fostering innovation and future-ready competencies.





Digital Skills and Employability

The Career Services Center played a leading role in strengthening students' digital skills, employability, and industry engagement through a series of targeted initiatives. The Center organized career development events designed to bridge the gap between academic learning and workplace expectations.



These included mock interview sessions with industry professionals, workshops on developing applicant-tracking-system (ATS) compatible résumés, alumni-led career development sessions, recruitment seminars, and industry site visits that provided students with practical exposure to professional environments and emerging market requirements. Engineering students benefited from direct engagement with companies such as Matelec, while Chemical Engineering students participated in field visits to IPT and Zeenni, gaining firsthand exposure to industrial operations and innovative technologies.



The Center further connected students with technology-driven industries through the Murex Recruitment Seminar, organized in collaboration with the Faculty of Engineering. The seminar introduced students to the global financial technology sector and provided insights into career pathways, recruitment processes, and technological solutions used by one of the world's leading fintech companies.



Through an industry webinar featuring senior executives from Consolidated Contractors Company (CCC), students explored the growing role of Environmental, Social, and Governance (ESG) practices in shaping corporate strategies, innovation, sustainability, and responsible engineering practices. By engaging with practitioners responsible for technology, innovation, and global

partnerships, participants gained practical perspectives on how digital transformation and sustainable business practices are being implemented across international industries.

To further strengthen university-industry connections, the Center hosted the engineering career panel titled “Bridging University and Industry: What Future Engineers Need to Know”, bringing together professionals from Malia Group, Phoenix Group–INDEVCO, Liban Cables Nexans, and IPT Powertech. Discussions focused on industry expectations, technical competencies, adaptability, project management, teamwork, and lifelong learning, providing students with practical guidance for transitioning from academic studies to engineering careers.

The Center also promoted digital transformation and future workforce readiness through the roundtable discussion “Bridging Academia and Industry: Future Skills and Digital Transformation”, organized in partnership with the Lebanese Private Sector Network (LPSN). The event brought together business leaders, employers, faculty members, and students to examine labor market trends, sector-specific skill requirements, workforce readiness, and the implications of digital transformation across healthcare, education, industry, and business sectors. The resulting discussions and recommendations helped strengthen alignment between academic programs and evolving industry demands while supporting graduate employability and future skills development.



This supports SDGs 9, 8, and 16.

INNOVATION, PATENTS AND APPLIED RESEARCH

INVERTICA: Assistive Technology Patent

The Issam Fares Faculty of Technology secured a registered patent for INVERTICA, an assistive technology solution designed to support individuals with hearing and speech impairments. This innovation demonstrates the University's commitment to socially impactful and human-centered technological solutions. This supports SDGs 9, 3, and 10.



LIRA Innovation Award

The Faculty of Engineering achieved national recognition through its victory at the prestigious LIRA Program 2025, where a multidisciplinary team from the Department of Chemical Engineering won Track 2, “Solving Industrial Challenges,” for its project titled *Novel Sustainable Dry Ice Blasting Technology for Solid Food Decontamination and Detoxification*. Developed in collaboration with industrial partner Société d’Oxygène et d’Acétylène du Liban (S.O.A.L.), the project introduced an innovative solvent-free technology that enhances food safety through a sustainable dry-ice blasting process with strong potential for industrial application. Selected as the sole UOB project shortlisted for the competition, the proposal outperformed numerous entries from universities across Lebanon and was evaluated by an industry-based jury on innovation, feasibility, and implementation potential.

This supports SDGs 9, 2, and 12.



ENVIBOT: Patented Environmental Robotics Innovation

The Faculty of Engineering successfully developed and patented ENVIBOT, a multifunctional AI-enabled environmental monitoring robot capable of real-time monitoring of air, soil, and water parameters. Following its success at LIRA, the project received a 20-year national patent and represents one of the University's flagship innovation projects.

This supports SDGs 9, 6, 13, and 15.



Sustainable Design Innovation: Transforming Recycled and Bio-Based Materials into Future Solutions

The Earth Hub promoted innovation through collaborative projects exploring sustainable materials, digital fabrication, biomaterials, and responsive design technologies. Students developed furniture from recycled plastics, products from recycled glass, large-scale installations using banana fibers and earthen construction techniques, as well as prototypes utilizing bacterial cellulose, mycelium-based materials, and hydromorphic wood systems. In 2026, 80 students participated in workshops combining material research, emerging technologies, and environmental innovation, while partnerships with industry professionals and material specialists enhanced practical learning and experimentation.

5 strategic industry and innovation partnerships

This supports SDGs 9, 11, 12, and 13.

AWARDS, RECOGNITION AND INNOVATION ACHIEVEMENTS

The University of Balamand continued to demonstrate excellence in innovation, engineering, technology, and applied research through a range of national and international achievements by its students, alumni, and faculty members.

Alumni Excellence

Dr. Scarlett Tannous, a graduate of the Faculty of Engineering, received international recognition for her doctoral research in industrial risk management and was awarded the prestigious Project Award by the Risk Policy and Law Specialty Group of the Society for Risk Analysis in the United States for her contributions to risk prevention policy and industrial safety.



Award-Winning Civil Engineering Students Represent Lebanon Internationally

Civil Engineering students secured both first and third place in the ACI-ACTS Student Competition, demonstrating excellence in structural design, problem-solving, and engineering innovation. Their success subsequently earned them the opportunity to represent Lebanon at the international American Concrete Institute (ACI) Convention in Baltimore, where they engaged with global experts in concrete technology and sustainable construction while showcasing the University's engineering talent on an international platform.





Hospitality and Tourism Innovation Recognized at HORECA

Students from the School of Tourism and Hotel Management earned multiple medals at HORECA 2025, demonstrating creativity, innovation, and professional excellence within the hospitality sector.



Alumni-Led AI Innovation Supporting National Digital Transformation

Alumni founders of Smartr AI developed the official AI-powered mobile application for the Lebanon Ministry of Tourism, integrating multilingual artificial intelligence capabilities, personalized travel planning, and real-time tourism intelligence.



AI Research Recognition

The University's commitment to artificial intelligence and emerging technologies was recognized through the First Prize for Best Oral Presentation in Applied Sciences and Technology at the Doctoral Studies Days – Middle East Edition 2025. The award-winning research presented an interpretable machine-learning framework for cardiovascular disease prediction, highlighting the application of AI in healthcare innovation.



Engineering, Architecture, and GIS Awards

Students from the GIS Center earned Second Prize at the Manal Sayed Award for GIS Innovation in Higher Education for their project on emergency and disaster management. Faculty of Engineering students also achieved outstanding success, securing four first-place awards in the Environmental, Civil, Electrical, and Mechanical Engineering categories at the Conference for Engineering and Architecture Graduates 2025. Additionally, ALBA students received first and third prizes at the Architecture and Engineering Conference in North Lebanon, demonstrating excellence in architectural innovation, creativity, and design.





Sustainable Engineering Innovation

International recognition for sustainable engineering innovation was further achieved when the Faculty of Engineering became the only Lebanese representative selected as a finalist in the AspenTech Academic Innovators Challenge 2025. The student project focused on biochar production and green roof technologies for carbon capture, highlighting the University's commitment to practical sustainability solutions.



Aerospace Innovation

Students from the Aircraft Maintenance and Mechanical Engineering programs also received international recognition by winning the Team Award of the Year at the RAeS AeroTube 2025 Challenge organized by the Royal Aeronautical Society. Their project explored the future of supersonic aviation through an educational and research-based presentation on NASA's X-59 aircraft, demonstrating creativity, technical expertise, and innovation in aerospace engineering.



Creative Design Excellence

ALBA students received the Best Concept Award at the international Luxfuturum Lighting Competition in Shanghai for the innovative "Murfi" lighting concept, while ALBA graduate Hasan Ali was shortlisted among the semifinalists of the prestigious Student Academy Awards 2026 for his animated short film "The Boy's Fish."





Faculty Recognition

Faculty members likewise received international recognition. Dr. Makram El Bachawati and Dr. Marianne Saba were selected for the highly competitive SSHN Research Program in France, Dr. Ziad Abi Khattar obtained the prestigious HDR qualification from the University of Montpellier, and Prof. Moustapha El Hassan was elevated to the rank of IEEE Senior Member in recognition of his professional and scholarly contributions to the engineering profession.



Formula Student and Balamand Racing Team

The Balamand Racing Team (BRT) represented Lebanon at Formula Student UK 2025, becoming the only Lebanese team to participate and achieving first place among participating teams from the Middle East and Arab region. The team ranked 39th globally and received the Michael Royce Learn and Compete Award in recognition of its outstanding engineering performance, innovation, teamwork, and continuous development. Through the design, manufacturing, testing, and presentation of a Formula-style race car, students gained practical experience in mechanical engineering,

project management, manufacturing systems, business planning, and applied innovation.



The team welcomed Lebanese rally champion Abdo Feghali and Christopher Feghali, the first Formula 4 Arab driver, who visited the University to mentor students and provide technical and professional insights as they prepared for the Formula Student Competition 2025. Bringing together students from Mechanical, Electrical, and Computer Engineering, the team showcased its Formula Student vehicle design and engaged in discussions on engineering innovation, teamwork, problem-solving, and motorsport technologies.





Building Future-Ready Skills Through Robotics, Automation, and Embedded Technologies

The Faculty of Engineering promoted innovation through hands-on robotics and engineering design initiatives. Computer and Electrical Engineering students developed advanced autonomous line-tracking robots using PIC microcontrollers, strengthening competencies in embedded systems, robotics, and automation. These efforts culminated in the eighth edition of the Mobile Autonomous Robotics Competition (MARCAB), where student teams designed, built, and programmed autonomous robotic systems that were evaluated on technical performance, innovation, and practical engineering application. These initiatives fostered project-based learning while developing future-ready technological skills.



Dr. Elias G. El-Chami Medical Simulation Center

The University inaugurated the Dr. Elias G. El-Chami Medical Simulation Center, a state-of-the-art facility designed to advance medical education, healthcare innovation, and simulation-based training. Equipped with advanced simulation technologies, the center provides students, residents, nurses, and healthcare professionals with a safe and controlled environment to develop clinical competencies, strengthen decision-making skills, and practice multidisciplinary teamwork before engaging in real-world healthcare settings. Built around the pillars of education, accreditation, and research, the center enhances the University's capacity to deliver innovative medical training while supporting excellence in healthcare education and professional development.



Enhancing Biomedical Innovation with Cutting-Edge Molecular Research Infrastructure - QIAcuity Digital PCR System

In collaboration with Numelab, the University introduced the advanced QIAcuity Digital PCR (dPCR) System, significantly strengthening its research and diagnostic infrastructure. The technology enhances capabilities in molecular biology, genetics, microbiology, and biomedical research through highly sensitive and precise molecular analysis. Applications include

pathogen detection, next-generation sequencing quality control, biomarker analysis, gene expression studies, and the detection of low-frequency genetic variations relevant to oncology and precision medicine.



Advancing Digital Engineering Education through RL4Eng

The University of Balamand continued to play an active role in the RL4Eng (Remote Labs for Engineering) project, funded by the Erasmus+ European Union Programme, which aims to expand access to remote and take-home laboratories and strengthen digital transformation in engineering education. University representatives participated in international consortium workshops hosted by the State University of Zanzibar, contributing to the exchange of expertise and the development of innovative teaching methodologies that extend laboratory learning beyond traditional physical spaces.

The University's leadership within the project was further demonstrated by hosting the international RL4Eng Consortium Meeting at the Koura Campus, bringing together partners from multiple countries to review project outcomes, showcase remote laboratory developments, exchange best practices, and discuss the long-term sustainability of digitally enabled engineering education.







Strengthening Innovation Ecosystems through International Engagement

The University actively contributes to international innovation ecosystems through participation in collaborative capacity-building initiatives. As part of the Lebanon Innovate Soft-Landing Programme, supported by the European Union and coordinated by Berytech, UOB engaged with leading European innovation hubs, incubators, and entrepreneurship networks in France and Belgium. This participation strengthened knowledge exchange, fostered international partnerships, and enhanced opportunities for collaboration between Lebanese and European innovation ecosystems.



Internationally Funded Research Excellence

The University secured international recognition through the successful award of a competitive **PHC CEDRE 2026–2027** research grant supporting advanced plasma nanoparticle research. Led by Dr. Chawki Lahoud, the project focuses on the development of next-generation numerical models to investigate plasma-nanoparticle interactions using advanced simulation technologies and experimental validation. Conducted in collaboration with international research partners, the project strengthens the University's contribution to emerging fields of engineering and applied physics while reinforcing Lebanon's participation in cutting-edge scientific research.

Innovation in Healthcare Technologies through the SALAM Project

The University expanded its international research portfolio through participation in the SALAM (Social, Sustainable and Inclusive Health Care Systems in the Mediterranean Area) project, co-funded by the European Union under the Interreg NEXT-MED Programme. Working alongside partners from Italy, Spain, Jordan, and Lebanon, the project aims to develop innovative healthcare solutions that combine technological advancement with social inclusion. UOB's contribution focuses on the development and testing of portable medical bio-devices, telemedicine technologies, and tele-cardiology applications, supporting



accessible healthcare services and cross-border research collaboration.

Expanding Global Research Partnerships

In 2026, Dr. Joseph Doumit from the Department of Computer Engineering was appointed Associate Researcher at IMT Atlantique in France for a three-year period. This appointment supports collaborative research in intelligent wireless communications, artificial intelligence-driven networking, and next-generation communication systems, further reinforcing UOB's commitment to international research excellence and global scientific cooperation.



PROMOTING SDG 9 THROUGH Student ACTIVITIES

The collaboration between the Eco Club and the Robotics Club brought together students from Environmental Science, Mechatronics Engineering, and University alumni to develop innovative solutions addressing environmental challenges. Through their participation in entrepreneurship and innovation programs implemented in partnership with INJAZ Lebanon, Berytech, and GIZ, students gained practical experience in circular economy principles, business modeling, prototyping, strategic planning, and pitching. Their project, Plastic to Print (P2P), secured funding support and focuses on transforming plastic bottle waste into 3D-printing filament, creating an innovative approach to waste valorization and sustainable manufacturing. The initiative highlights the University's commitment to fostering interdisciplinary collaboration, entrepreneurship, and the development of technology-driven solutions with environmental and societal impact.





DevConnect 2025: Empowering Future Technology Leaders Through AI, Cloud Computing, and IoT

The Google Developers Group on Campus & Developers Club, in collaboration with LOOP (Lebanese Organization of Programmers) and Women Techmakers (WTM), organized DevConnect 2025, a full-day technical conference bringing together students, industry experts, and technology professionals. Building on the success of its previous edition, the event focused on Artificial Intelligence, Cloud Computing, and IoT, featuring expert talks and opportunities for learning, collaboration, and networking. The conference also welcomed students from universities across Lebanon, while the Music Club contributed performances throughout the event, adding to the overall experience.



This supports SDGs 4, 9, 5, and 8.

For more details visit uobdevs404

ALBA: Design Innovation, Digital Technologies and Creative Infrastructure

In 2025, ALBA reported one activity directly supporting SDG 9 and nine additional activities contributing to innovation, digital technologies, creative industries, and infrastructure design across Interior Architecture, Product Design, Cinema and Audiovisual Production, and Archives and Collections.

This additionally supports SDG 4, SDG 11, and SDG 12.

Integrating Emerging Technologies into Design Education

The Interior Architecture section embedded generative artificial intelligence (AI) into spatial representation and architectural design training across all academic levels.

During 2025, 40 students and 1 faculty member participated in workshops and applied learning activities that explored the use of AI tools in architectural visualization, spatial design, and creative problem-solving. By integrating emerging technologies into design education, the initiative strengthened students' digital competencies and innovation skills relevant to future creative industries.

40

students trained in AI-enabled design through ALBA

Innovation Through Design, AI and Digital Creativity

Several additional activities reported under other SDGs also contributed to SDG 9 objectives:

- The WeDesign Educational Hub explored the theme of Hybrid Intelligences, promoting dialogue on the interaction between human creativity and artificial intelligence in design practice.
- The workshop "What If... Objects Remembered", organized during WeDesign with students from Lycée Montaigne, introduced participants to AI-assisted design and 3D modelling technologies, fostering digital design skills and creative experimentation.
- The elective course Cinema of the Future introduced students to emerging audiovisual technologies including virtual reality (VR), augmented reality (AR), artificial intelligence (AI), immersive storytelling, and expanded cinema formats, preparing students for innovation in the creative industries.
- Documentary projects developed during WeDesign documented traditional artisan practices, supporting knowledge preservation while applying contemporary media and production techniques.

Design Innovation and Infrastructure Development

ALBA also contributed to innovation and infrastructure-related objectives through a series of applied design projects:

- The Lighting Workshop 2025, conducted in collaboration with academic and industry partners, strengthened university-industry engagement through practical design innovation.
- The lighting project "Murfi" received the Award of Excellence in the Concept Category at Lux Futurum 2025 (Shanghai), demonstrating international recognition of student-led design innovation.
- The Interior Architecture Master's Studio reimagined the Balamand Hospital in Koura through evidence-based design approaches aimed at enhancing patient well-being and healthcare infrastructure.
- The graduation project "Hakawati", a mobile storytelling structure, demonstrated innovative approaches to flexible and transportable cultural infrastructure.
- The development of ARMS (Automated Records Management System) contributed to institutional digital infrastructure by modernizing archival management and supporting efficient information systems.

Indicator	***Result***
Direct SDG 9 activities	1
Additional contributing activities	9
Students trained in generative AI for design	40
Faculty involved	1
International design awards	1
Industry-linked design workshops	1
Projects involving AI, VR, AR or digital technologies	4+
Healthcare infrastructure design project	1
Digital infrastructure systems developed	1

Impact Statement

ALBA advanced SDG 9 by integrating AI and emerging technologies into design education, fostering creative innovation, strengthening industry collaboration, supporting digital infrastructure development, and promoting innovative approaches to design, media, and the built environment.