أهداف التنمية المستدامة البحرين
BAHRAIN SDGs 2030

الجامعة الخليجية
GULF UNIVERSITY

THE SUSTAINABILITY REPORT

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

2024/2025

Background

In its Silver Jubilee year, GU strengthened its role as a national platform for sustainable innovation through programs, centers, and partnerships that integrate technology and entrepreneurship into learning and societal development. Guided by its mission to foster creativity and innovation within a stimulating multicultural environment, GU is committed to generating professional workforce and intellectual capital in alignment with national priorities. In pursuing this mission, the University recognizes the importance of the United Nations' Sustainable Development Goal 9: Industry, Innovation & Infrastructure, building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation, as directly relevant to its strategic purpose. Through industry-relevant academic programs, applied research, and digital infrastructure investments, GU is focused on contributing to the Kingdom of Bahrain's transition toward a knowledge-based economy. This annual report documents the University's progress, achievements, and challenges in the 2024-2025 period in advancing SDG 9-aligned initiatives, providing a foundation for monitoring year-on-year improvements and planning for future impact.

1. Teaching, Learning and Employability

1.1 Educational and Curriculum

Gulf University has structured its academic offerings across its four Colleges (Engineering; Administrative & Financial Sciences; Communication & Media Technologies; Law) to align with contemporary industrial and digital imperatives. Several flagship programs illustrate how GU integrates innovation, industry linkage and digital transformation into curriculum, teaching and learning experiences.

1. Engineering Programs

The College of Engineering was the first private university unit in Bahrain to offer engineering programs under GU, and currently provides bachelor's degrees in interior design engineering, Mechanical Engineering and Electrical & Electronic Engineering. These programs are designed in collaboration with an experienced UK partner (University of Northampton) for the Mechanical and Electrical & Electronic tracks, which fosters internationalization and industry-relevant curriculum. Within these programs, GU emphasizes modern laboratories, studios and engineering design spaces which provide hands-on, real-world project experience, thereby strengthening linkages to infrastructure development and technology application.

2. Business, Administration & Digital Transformation

The MBA program at GU is explicitly framed to equip leaders with strategic, technology-driven skills. The program offers specialized tracks including Digital Transformation and Digital Marketing. This design aligns with both national economic diversification goals and the growing demand for professionals who can lead digital change in organizations. A specific student research project showcased this orientation: MBA students analyzed GU's own digital transformation maturity and recommended an idea-generation and tracking platform, demonstrating how teaching links with institutional innovation practice. By offering a track dedicated to digital transformation, GU signals an intention not just to teach business fundamentals, but to embed students into the evolving industry-technology interface.

3. Bachelor in FinTech and Investment Management

A major achievement in 2025 was the approval and placement of the new Bachelor in FinTech and Investment Management within the National Qualifications Framework (NQF). This pioneering program, housed in the Department of Accounting and Finance Sciences, represents GU's proactive commitment to integrating financial innovation, technology, and data-driven investment practices into business education. The curriculum bridges

traditional finance with emerging technologies such as blockchain, artificial intelligence, and financial analytics, preparing graduates for roles in digital banking, investment technology, financial data analysis, and fintech entrepreneurship. The program also strengthens GU's collaboration with Bahrain's thriving fintech ecosystem, supporting national initiatives that promote financial inclusion, digital transformation, and sustainable industrial innovation.

4. Communication & Media Technologies –Advertising and Digital Marketing

The Bachelor's in Advertising & Digital Marketing program is another key example: it is delivered in partnership with the University of Northampton (UK) and focuses on digital platforms, new media, advertising campaigns, digital business modelling and innovation in marketing. The program's structure emphasizes experiential learning, students work on real campaigns, engage with industry, and develop digital media competencies. This links directly to GU's pursuit of innovation in teaching as well as preparing graduates for the digital economy and industry-facing roles.

5. Digital Transformation Centre & Institutional Infrastructure

Beyond discrete programs, GU has established a dedicated Digital Transformation Center tasked with driving innovation across teaching, research and university operations. The Centre's mandate includes researching emerging technologies, designing the university's digital transformation roadmap, automating teaching/learning and assessment systems, and building human and infrastructural capacity. These institutional efforts underpin the academic programmes and signal that innovation is embedded not just in curriculum, but in the core infrastructure and processes of the university. For example, GU's project "Mariam- The Intelligent AI Assistant" won the Bahrain Digital Content Award (BDCA 2025) in the Learning & Education category, reflecting GU's focus on AI-enabled educational innovation.

6. Industry Partnerships and Applied Projects

GU emphasizes industry partnership and applied learning. In the Advertising & Digital Marketing program, students face a 'pitch to a leading company in the advertising industry' as part of their graduation capstone. Similarly, media and digital transformation initiatives engage both students and faculty in projects that evaluate institutional digital maturation and propose actionable innovations. These cross-linkages between teaching and institutional practice strengthen GU's contribution to industry, infrastructure and innovation ecosystems.

6. Continuing Education and Community Training

Through its Community Engagement and Continuing Education Centre (CECEC), GU offers short courses and training to community members in areas such as electrical/electronic engineering, mechanical, architectural/interior design, management leadership, business, media and marketing. These programs bolster skills and support SMEs and industry in the wider Bahraini economy, contributing to inclusive industrialization and innovation diffusion beyond the university's direct student body.

1.2 Experiential Learning & Projects

At Gulf University (GU), experiential learning and project-based initiatives form a key component of the institution's commitment to advancing Sustainable Development Goal 9 (Industry, Innovation & Infrastructure). By providing students with opportunities to engage in real-world challenges, collaborate with industry, and apply their knowledge in innovation-driven environments, GU strengthens both its academic programmes and its contribution to Bahrain's evolving knowledge economy. Below are several flagship examples of how GU integrates experiential learning and projects into its curriculum and student activities:

- **Industry-Integrated Student Projects.** For example, the Bachelor's in Interior Design Engineering programme emphasises student projects that not only deliver schematic and construction documentation but also invite external jurors from academic and industrial sectors to evaluate engineering and technology solutions.
- **Innovation Competitions on Campus.** GU organised the "Innovation and Sustainable Technology Solutions Competition" in April 2025, inviting students from across Bahrain (including secondary and tertiary institutions) to propose sustainable, technologically based solutions aligned with national priorities such as Bahrain Vision 2030.
- **Digital Transformation & Applied Research Projects.** An MBA cohort at GU undertook a study recommending the launch of a dedicated platform for generating and tracking innovation ideas an example of how GU connects student research with institutional strategy.
- **'Made in GU' Engineering Innovations.** The "Educational Ice Maker" project demonstrates GU's support for hands-on engineering design with sensors, data-logging and real-system analysis an initiative that bridges theory and practice in sustainable engineering education.

1.3 Graduate Employability and Green Job Outcomes

Gulf University's commitment to integrating sustainability, innovation, and industry relevance within its academic programs is reflected in the growing number of graduates employed in green and sustainability-focused professions. Through curriculum design, experiential learning, and partnerships with industry, GU equips students with the technical and managerial competencies required for the emerging green economy. The following table presents the distribution of graduates who have obtained green jobs over the past three academic years, demonstrating how the University's learning outcomes contribute directly to SDG 9- Industry, Innovation, and Infrastructure.

GRADUATES WITH GREEN JOBS (FOR THE LAST 3 YEARS)

Academic Year	Faculty/Department	Total Graduates	Graduates Green Jobs	Description Of Green Jobs	Data Source
2022/2023	Accounting & Finance	18	4	Sustainability Accountant, Sustainability Auditors	Alumni Database
2022/2023	Human Resource	92	9	Sustainability HR Generalist; Talent Acquisition, Sustainability Compensation & Benefits Specialist	Alumni Survey
2022/2023	Interior Design Engineering	19	4	Sustainable Interior Designer, Sustainability Consultant for Interior Design; Green Building Specialist	Tracer Study Report
2022/2023	Mass Communication	68	11	Sustainable Interior Designer, Sustainability Consultant for Interior Design; Green Building Specialist and Sustainability Journalist	Career Center Data
2023/2024	Accounting & Finance	18	5	Climate Chnage Accountant, Sustainability Auditors and ESG Analyst	Alumni Database
2023/2024	Human Resource	114	11	Sustainability HR Generalist; Talent Acquisition, Green HR manager.	Alumni Survey
2023/2024	Interior Design Engineering	24	11	Sustainable Interior Designer, Sustainability Consultant for Interior Design; Green Building Specialist	Tracer Study Report
2023/2024	Mass Communication	66	9	Sustainable Interior Designer, Sustainability Consultant for Interior Design; Green Building Specialist and Sustainability Journalist	Career Center Data

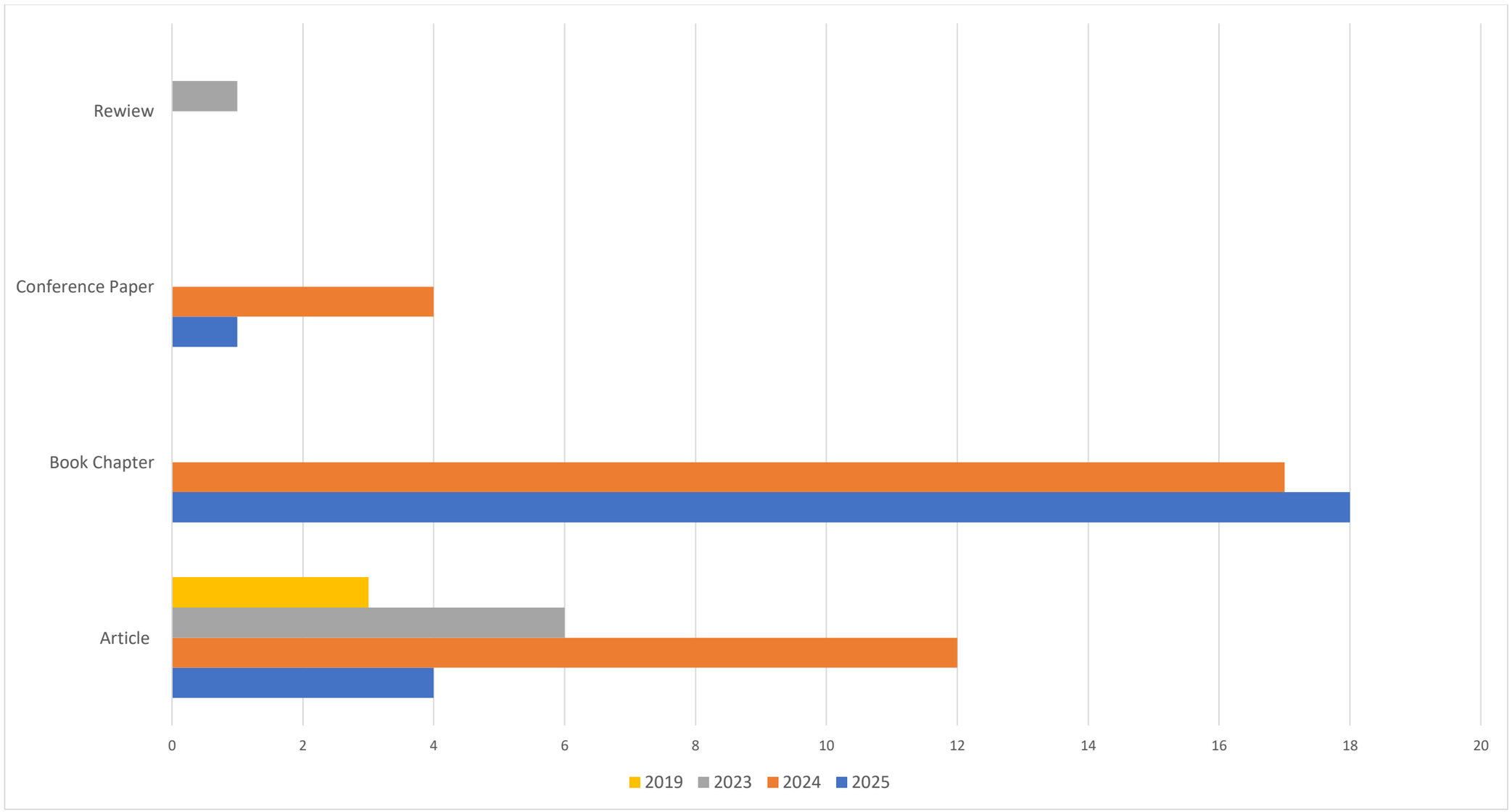
2024/2025	Accounting & Finance	12	4	Climate Chnage Accountant, Sustainability Auditors and ESG Analyst	Alumni Database
2024/2025	Human Resource	91	14	Sustainability HR Generalist; Talent Acquisition, Green HR manager.	Alumni Database
2024/2025	Interior Design Engineering	35	4	Sustainable Interior Designer, Sustainability Consultant for Interior Design; Green Building Specialist	Alumni Database
2024/2025	Mass Communication	43	11	Sustainable Interior Designer, Sustainability Consultant for Interior Design; Green Building Specialist and Sustainability Journalist	Alumni Database
2024/2025	Law	10	4	Sustainability Lawyer, Environmental Law Consultant; Corporate Compliance Specialist and ESG Legal Researcher	Alumni Database
	Total	**610**	101		

2. Research & Innovation

Gulf University continues to strengthen its research profile through projects and publications that advance innovation, technology, and sustainable industrial development, directly contributing to the achievement of SDG 9-Industry, Innovation, and Infrastructure.

During 2024–2025, faculty members produced a diverse portfolio of peer-reviewed articles, book chapters, and conference papers in high-impact international outlets, reflecting the University's multidisciplinary commitment to digital transformation, engineering innovation, sustainable industry, and smart infrastructure.

SDG 9 Publications by Type & Year



SDG 9 Articles in 2024-2025 (July)

Author Names	Title	Journal Name	Type	Year
Ateeq, A.A., Ateeq, R.A., Alzoraiki, M., Milhem, M., Al-Absy, M.S.M.	Impact of Information Communication Technology and Faculty Readiness on Teaching Effectiveness	International Review of Management and Marketing	Article	2025
Sona, D.R., Amulya, R., al-Tamimi, A.N.J., Bagadi, K., Abdullah, O.I.	An Advanced Energy Efficient Lightweight ElGamal Cryptography Technique for IoT Device	AIP Conference Proceedings	Conference Paper	2025
Faeni, D.P., Oktaviani, R.F., Riyadh, H.A., Faeni, R.P., Beshr, B.A.H.	Green Human Resource Management and Sustainable Practices on Corporate Reputation and Employee Well-being: A model for Indonesia's F&B industry	Environmental Challenges	Article	2025
Salman, M.A., Daham, S.R., Shaheen, W.H.A., Abdullah, O.I., Al-Zubaidi, S.S.	Effect of Nozzle Diameter and Raster Angle on the Mechanical Properties of 3D Printed Nylon/Carbon Fibers	Engineering Technology and Applied Science Research	Article	2025
Abdurrahman, A.P., Yousif, K.A., Sani, A.A., Al-Absy, M.S.M., Abubakar, A.H.	Extending UTAUT Through Moderating Effects of Digitalization on the Audit Profession	Studies in Systems Decision and Control	Book Chapter	2025
Ateeq, A.A., Milhem, M., Alzoraiki, M., Al Meer, S., Ali, S.A.	The Rise of Smart Cities: Integrating Technology for Sustainable Urban Development	Studies in Systems Decision and Control	Book Chapter	2025
Al-Rawi, O.Y.M., Elfezzani, W., Edwar, M.E., Al-Rawi, B.O., Rashed, A.N.	Challenges and Recent Developments in Smart Education Post-COVID-19 Pandemic	Studies in Systems Decision and Control	Book Chapter	2025
Ateeq, A.A.	Emerging Economies and Digital Transformation: Opportunities and Challenges	Studies in Systems Decision and Control	Book Chapter	2025
Milhem, M., Ateeq, A.A., Ateeq, R.A., Santhanamery, T., Al Astal, A.Y.M.	Bridging Worlds: Envisioning a Sustainable Future Through CSR in Developing Countries	Studies in Systems Decision and Control	Book Chapter	2025

Ateeq, A.A., Ateeq, R.A.	Sustainability as Strategy: The New Competitive Edge for Bahrain's SMEs	Studies in Systems Decision and Control	Book Chapter	2025
Al Astal, A.Y.M., Ateeq, A.A., Milhem, M., Allaymoun, M.H., Al-Mesaiadeen, J.M.	Environmental, Social, and Governance (ESG) Practices in Bahrain: A Comprehensive Analysis of Sustainable Development in the Corporate and Financial Sectors	Studies in Systems Decision and Control	Book Chapter	2025
Ateeq, A.A.	From Oil to Sustainability: Bahrain’s Transformation Through CSR	Studies in Systems Decision and Control	Book Chapter	2025
Fatla, O.M.H., Abd Al-Sahb, W.S., Almasri, M.E., Abdulghaffar, A., Alani, S.	Energy Demand of Steelmaking Industry in UK	Studies in Systems Decision and Control	Book Chapter	2025
Hussein, T.M., Olanipekun, D.B., Bassey, J.U., Goparaju, A.	Technology Creation, International Trade and Economic Development in Africa	Studies in Systems Decision and Control	Book Chapter	2025
Hussein, T.M., Michael, A.A., Goparaju, A.	Reviewing the Impact of Technological Innovation on Accounting Practices	Studies in Systems Decision and Control	Book Chapter	2025
Milhem, M., Ateeq, A.A., Al Astal, A.Y.M., Shafie, D.I., Santhanamery, T.	Advancing Sustainability: Embracing the Circular Economy for Environmental and Economic Resilience	Studies in Systems Decision and Control	Book Chapter	2025
Mohammed, M.N., Hameed, M.S., Salah, H.A., Al-Zubaidi, S.S., Abdullah, O.I.	Design and Optimization of Electro-Magnetic Suspension System for Automotive Sector	Studies in Systems Decision and Control	Book Chapter	2025
Ravikumar, C.V., Rajesh, A., Jweeg, M.J., Abdullah, O.I., Blibech, O.	An Analysis of Real-Time Applications Using CBR and HTTP as Internal Routing Protocols	Studies in Systems Decision and Control	Book Chapter	2025
Hydrose, A., Althaf, K.K., Jishna, K.S.	Assessing Smart and Sustainable Technology Adoption in Kerala’s Residential Sector: Barriers and Opportunities	Studies in Systems Decision and Control	Book Chapter	2025

Abdalla, M.A.B., Palaniappan, R., Nataraj, S.K., Vijean, V.A., Nabi, F.G.	An Overview of Industry 5.0: Key Features, Advantages, Limitations and Future Directions	Studies in Systems Decision and Control	Book Chapter	2025
Job, P., Job, S.R.A.	The Critical Role of Digital Skills in Enhancing Graduate Employability in the GCC: A Perspective on Today's Job Market	Studies in Systems Decision and Control	Book Chapter	2025
Mohammed, M.N., Hameed, M.S., Protacio, G.G., Al-Zubaidi, S.S., Abdullah, O.I.	Design a Support System for Ankle and Foot Injuries	Studies in Systems Decision and Control	Book Chapter	2025
Ateeq, A.A., Almuraqab, N.A., Ateeq, R.A.	Enhancing Efficiency and Innovation: The Impact of Advanced Digital Technologies on Business Operations in GCC Countries	Studies in Big Data	Book Chapter	2025
Al-Zubaidi, R., Ateeq, A.A., Abdulsamad, A., Ahmed, H.R.H.A., Milhem, M.	Market Orientation and SMEs Performance: Unraveling the Mediating Effects of Innovation Capability Amidst Environmental Uncertainty	Studies in Systems Decision and Control	Book Chapter	2025
Banu, S.R., Ateeq, A.A., Akhtar, S.W., Mohamed, A.	Greening Human Resources: Analyzing GHRM Adoption in Mineral Extraction Industries	Studies in Systems Decision and Control	Book Chapter	2025
Alawsi, H., Al-Ayash, A.A., Ibrahim, F.M., Mohammed, M.N.	Legal and Technical Perspectives on Blockchain Smart Contracts: A Review of Regulatory Challenges and Innovations	Studies in Systems Decision and Control	Book Chapter	2025
Alawsi, H., Al-Ayash, A.A., Ibrahim, F.M., Mohammed, M.N.	Sustainability in E-Commerce: Green Practices and Their Influence on Digital Trade	Studies in Systems Decision and Control	Book Chapter	2025
Tawallbeh, A., Moharam, M.M.R.	Between Innovation and Intrusion: A Qualitative Study of Privacy Perceptions Among Omani and Bahraini Smartphone Users in the Age of Mind-Reading	Studies in Systems Decision and Control	Book Chapter	2025

Siswanti, I., Riyadh, H.A., Cahaya, Y.F., Prowanta, E., Beshr, B.A.H.	Unlocking sustainability: Exploring the nexus of green banking, digital transformation, and financial performance with foreign ownership moderation	Discover Sustainability	Article	2024
Garad, A., Riyadh, H.A., Al-Ansi, A.M., Beshr, B.A.H.	Unlocking financial innovation through strategic investments in information management: a systematic review	Discover Sustainability	Article	2024
Al-Obaidi, Q., Ibrahim, D.S., Mohammed, M.N., Abdullah, O.I., Selem, N.Y.	A Comprehensive Analysis of the Hydrogen Generation Technology Through Electrochemical Water and Industrial Wastewater Electrolysis	Polish Journal of Chemical Technology	Article	2024
Al-Shameri, A.S.S., Omar, S.S., Alzoraiki, M., Milhem, M., Ateeq, A.A.	The moderating role of emotional intelligence and HR digitalization on the relationship between compensation and employee job performance in Johor manufacturing sector	International Journal of Management and Sustainability	Article	2024
Abdullah, T.A., al-Tamimi, A.N.J., Aljibori, H.S., Azawi, K.F.A., Hussein, H.T.	Nanomaterials in Oil and Gas Industry	Petroleum Chemistry	Article	2024
Alwaely, S.A., Alzubaidi, R.S.M., Altaher, A.E., Hassan, K.A., Rateb Darawsheh, S.	Digital transformation and the challenges associated with applying digital technologies in achieving strategic flexibility in public administration: a case study in Jordan	International Journal of Data and Network Science	Article	2024
Tabash, M.I., Al-Absy, M.S.M., Hannoon, A.M.T.	Modeling the Nexus between European Carbon Emission Trading and Financial Market Returns: Practical Implications for Carbon Risk Reduction and Hedging	Journal of Risk and Financial Management	Article	2024
Ying Shin, D.T., Yusof, K.H., Aljibori, H.S., Abdullah, O.I., Ahmad, A.S.	Advancements in gas reticulation system safety measures: a comprehensive development perspective	Journal of Achievements in Materials and Manufacturing Engineering	Article	2024
Mohammed, M.N., Aljibori, H.S., Jweeg, M.J., Aldulaimi, M., Al-Azawi, K.F.	A Comprehensive Review on Graphene Oxide Based Nanocomposites for Wastewater Treatment	Polish Journal of Chemical Technology	Article	2024

Ateeq, A.A., Al-Refaei, A.A.A., Alzoraiki, M., Al-Tahitah, A.N., Ibrahim, A.	Sustaining Organizational Outcomes in Manufacturing Firms: The Role of HRM and Occupational Health and Safety	Sustainability Switzerland	Article	2024
Jaber, M.M., Ali, M.H., Abd, S.K., Alkhuwaylidee, A.R., Al-yousif, S.N.	Resnet-based deep learning multilayer fault detection model-based fault diagnosis	Multimedia Tools and Applications	Article	2024
Al-Absy, M.S.M.	Board Of Directors' Characteristics and Environmental Disclosure	Studies in Managerial and Financial Accounting	Book Chapter	2024
Ateeq, A.A., Almuraqab, N.A.	The Transformation of Bahrain's Job Market: Embracing Artificial Intelligence for Future Employment Opportunities	Contributions to Finance and Accounting	Book Chapter	2024
Hussein, M.F., Al-Ayash, A.A.	Smart Home as a Source of Clean Energy (KNX and IoT in Amman Residence as a Case Study)	Studies in Systems Decision and Control	Book Chapter	2024
Blibech, O.	LCA Software Tools, CAD Tools and Engineering Design Processes: Challenges with Process Modelling for Sustainable Productions	2024 Arab ICT Conference Aictc 2024	Conference Paper	2024
Mohammed, M.N., Aljibori, H.S., Jameel al-Tamimi, A.N., Hui, S., Abdullah, O.I.	A New Approach to Design and Development of In-Pipe Inspection Robots	2024 Arab ICT Conference Aictc 2024	Conference Paper	2024
A.Ghani, J.A., Saibani, N., Jweeg, M.J., Al-Zubaidi, S.S., Abdullah, O.I.	A Comprehensive Analysis of The Successful Strategic Planning Implemented In Automotive Industries	Journal of the Balkan Tribological Association	Article	2024
Bala, H., Zomaya, A.R., Omar, R., Sani, A.A., Khatoon, G.	Effect of Cloud Accounting Computing on Firm Performance	Studies in Systems Decision and Control	Book Chapter	2024
Sani, A.A., Al-Absy, M.S.M., Bala, H., Zahid, U., Musa, B.	Green Auditing as a Catalyst for Sustainable Environment in Nigerian Oil and Gas Industry	Studies in Systems Decision and Control	Book Chapter	2024
Rahmani, L., Gherbi, M.T., Chouaib, A., Abdullah, O.I., Ferhat, M.F.	Evaluation of the Mechanical Performance and Structural Characterization of Hybrid Green Composites Based on Periploca laevigata Aiton and Wool Natural Fibers	International Journal of Polymer Science	Article	2024

Al-Zubaidi, S.S., A.Ghani, J.A., Jweeg, M.J., Mohammed, M.N., Abdullah, O.I.	Sustainability And Green Solutions In Machining Technology: A Review	Journal of Environmental Protection and Ecology	Article	2024
Mohammed, M.N., Wen, Y., Yusof, K.H., Al Jowder, F., Sharif, A.	Design and Development of Smart Metal Detection System Based on IoT Technology	Studies in Systems Decision and Control	Book Chapter	2024
Ateeq, A.A., Alaghbari, M.A., Milhem, M., Alzoraiki, M., Ateeq, R.A.	Sustainability in the Modern Workplace: A Conceptual Exploration of Eco-friendly Strategies and Corporate Responsibility	Studies in Systems Decision and Control	Book Chapter	2024
Norhisham, S.N.B., Yaacob, S.N.N.B.M., Ismail, Z.B., Jaafar, H.B., Al-Absy, M.S.M.	The Level of Sustainability Statement Disclosure in Malaysia Listed Companies	Studies in Systems Decision and Control	Book Chapter	2024
Kristanti, F.T., Febrianta, M.Y., Salim, D.F., Sagama, Y., Beshr, B.A.H.	Advancing financial analytics: Integrating XGBoost, LSTM, and Random Forest Algorithms for precision forecasting of corporate financial distress	Journal of Infrastructure Policy and Development	Article	2024
Kristanti, F.T., Riyadh, H.A., Ginting, E.S.B., Beshr, B.A.H.	Exploring the level of realm disclosure for Indonesian insurance business using ISO 31000	Journal of Infrastructure Policy and Development	Article	2024
Hussein, M.F., Eid, A.A., Al-Ayash, A.A.	Interior Design Proposal for a Rural Tourism Center as Sustainable Development in Jordan (Al Fuheis Farm Case Study)	Dirasat Human and Social Sciences	Article	2024
Jamali, H.U., Mohammed, M.N., Jweeg, M.J., Alfiras, M.I.I., Schlattmann, J.	On the Use of Taguchi Method in the Analysis of the Dynamic Response of Variable Bearing Design under Impact Load	Advances in Tribology	Article	2024
Jamali, H.U., Senatore, A., Jweeg, M.J., Abdullah, O.I., Alfiras, M.I.I.	Effect of Bearing Edges Chamfering on the Characteristics of a Wide Range of Journal Bearing Ratio Under 3D Misalignment	Mechanisms and Machine Science	Conference Paper	2024

Raju, V., Kassim, S.B., Hanim, A., Almaamari, Q.A., Alkadash, T.M.	Comprehending the Relevance of Industry, Innovation, and Infrastructure in United Kingdom: A Research on SDG-9(Sustainability Development Goal-9)	Lecture Notes in Electrical Engineering	Conference Paper	2024
Salaheldeen, M., Ateeq, A.A., Al Ani, Z., Ali, S.A., Milhem, M.	Green Entrepreneurship and Sustainability in Developing Countries: Opportunities, Challenges, and Future Research Directions	Studies in Systems Decision and Control	Book Chapter	2024
Al Astal, A.Y.M., Ateeq, A.A., Dawwas, M.I.F., Alzoraiki, M., Milhem, M.	Convergence of Management and Environmental Control Systems: A Key to Sustainable Organizational Performance in Jordan	Studies in Systems Decision and Control	Book Chapter	2024
Milhem, M., Ateeq, A.A., Ateeq, R.A., Alzoraiki, M., Almeer, S.	Corporate Social Responsibility: A Multidimensional Approach to Sustainable Growth and Community Engagement—The Case of Almarai Company	Studies in Systems Decision and Control	Book Chapter	2024
Ateeq, A.A., Alzoraiki, M., Milhem, M., Beshr, B.A.H., Almeer, S.	Does Information Communication Technology Has Influence on Quality University Education on Gulf University: Literature Review	Studies in Systems Decision and Control	Book Chapter	2024
Roy, R., Ateeq, A.A.	Moving Towards Industry 5.0: Opportunities and Challenges in Bahrain Higher Education	Studies in Systems Decision and Control	Book Chapter	2024
Almaamari, Q.A., Majdalawi, M.A.	Factors Affecting Employees' Performance in the Hospitality Industry in Kingdom of Bahrain	Studies in Systems Decision and Control	Book Chapter	2024
Abu Jamie, N.H., Abu-Jamie, T.N., Al-Absy, M.S.M.	Advances in AI and Their Effects on Finance and Economic Analysis	Studies in Systems Decision and Control	Book Chapter	2024
Ateeq, A.A., Alaghbari, M.A., Al-Refaei, A.A.A., Yusuf, A.A.	Sustainable Solutions: The Impact of Green Technologies in University Operations	2024 Asu International Conference in Emerging Technologies for Sustainability and Intelligent Systems ICETSiS 2024	Conference Paper	2024

Mohammed, M.N., Al-yousif, S.N., Alfiras, M.I.I., al-Tamimi, A.N.J., Sharif, A.	Toward Sustainable Smart Cities: Design and Development of Piezoelectric-Based Footstep Power Generation System	Studies in Systems Decision and Control	Book Chapter	2024
Teng, L.M., Yusoff, K.H., Mohammed, M.N., Md Sapari, N.M., Alfiras, M.I.I.	Toward Sustainable Smart Cities: Smart Water Quality Monitoring System Based on IoT Technology	Studies in Systems Decision and Control	Book Chapter	2024
Almaamari, Q.A.	Factors Influencing Employees' Productivity in Bahraini Alhelli Company—Literature Review	Studies in Systems Decision and Control	Book Chapter	2024
Almaamari, Q.A., Elbastawisy, T.K.	Determining of Factors Influencing Employee's Retention at Almarai Company in Saudi Arabia	Studies in Systems Decision and Control	Book Chapter	2024

3. Infrastructure & Digital Transformation

GU is actively developing its campus and digital infrastructure in alignment with SDG 9's mandate to build "resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation." Key aspects of this infrastructure development include upgrading campus facilities with energy-efficient and smart technologies, using the campus as a living lab for sustainable solutions, and strengthening digital infrastructure and virtual learning tools.

3.1 Upgrade of Campus Facilities with Energy-Efficient and Smart Technologies

GU has taken clear steps towards a smarter, digitally enabled environment. For example, GU's engineering students visited real-life smart built-environment sites such as the "Violet Smart Living" apartments to study advanced technologies and sustainable interior design solutions. Such visits reflect the University's engagement with smart infrastructure and sustainable built-environment practices as part of its curriculum. Moreover, the launch of platforms such as the "Smart Student" app, digital exams and smart business cards suggests a campus moving toward smarter operational systems and possibly more efficient use of resources. These steps strengthen GU's contribution to SDG 9 target 9.4 (upgrade infrastructure and retrofit industries to make them sustainable) by embedding smart and digital technologies into university infrastructure.

3.2 Campus as a Living Lab for Sustainable Solutions

GU leverages its academic programs and student activities to use the campus and surrounding environment as a testing ground for sustainable and innovative solutions. The visit by Interior Design Engineering and Mechanical Engineering students to the "Violet Smart Living" site, where they analyzed smart engineering solutions, indicates how GU engages with real-world built environments to promote sustainable infrastructure thinking. Additionally, the University supports applied student-research and project work, such as AI-powered smart irrigation systems showcased at campus-affiliated events. By integrating student learning, research and campus/industry interface, GU contributes to SDG 9 and helps build an innovative culture tied to infrastructure and sustainability.

3.3 Strengthening Digital Infrastructure and Virtual Learning Tools

GU has demonstrated strong commitment to its digital infrastructure. The IT Department ensures high-speed Wi-Fi across campus, provision of Microsoft 365 accounts, Teams for online classes, OneDrive storage and Moodle/SIS

access for students and staff. The establishment of the Digital Transformation Center is a core institutional initiative: it is tasked with digitizing all aspects of the university's operations (teaching, learning, assessment, research), building human and infrastructural capacity, and designing the digital transformation roadmap. In July 2025, GU launched a pioneering platform integrating its AI initiatives (e.g., the "Mariam" smart virtual assistant), Smart Student app, smart business cards and digital exam systems, demonstrating the integration of physical and digital infrastructure. These developments support SDG 9 target 9.5 (enhance scientific research, upgrade technological capabilities and industrial innovation in all countries).

4. Industry Partnerships

GU recognizes that forging strong collaborations with industry is critical to advancing SDG 9 by building innovation capacity, fostering technology transfer, and strengthening linkages between academia and the industrial sector. During recent years, the University has expanded its industry-engagement footprint in three principal ways: internship and joint-project partnerships; knowledge and technology transfer; and innovation support via consultancy and sponsored research.

4.1 Internship and Joint-Project Partnerships

The University's Student Services Unit and Internship & Career Development Office work actively to place students in industry settings, thereby linking academic learning to real-world industrial challenges. For example, the Internship and Career Development Officer's role explicitly includes liaising with existing internship partners, identifying new partners and collaborating with academic departments to place students in fall, spring and summer semesters. On the industry side, GU maintains an Industrial Partners page listing Bahraini companies such as Arab Shipbuilding & Repair Yard (ASRY) (maritime services), Bahrain Intellectual Property Society (IP-education and innovation ecosystem), Bahrain Association of Banks (finance/banking sector) and others.

These partnerships provide GU students with valuable internships and hands-on industry exposure, ensuring graduates are prepared for the demands of Bahrain's knowledge/industrial economy. This helps support SDG 9 target 9.5 (enhancing scientific research, upgrading technological capabilities) and target 9.b (supporting domestic technology development and innovation).

4.2 Knowledge & Technology Transfer

Beyond placing students, GU engages industry partners in joint activities that facilitate knowledge exchange and technology adoption. For instance, in the College of Administrative & Financial Sciences' "College Partners" listing, GU shows collaborations with companies like Benefit Company B.S.C. and Zain Bahrain where the partnership "promotes joint activities for staff and students … industry-academia research, internship and placement opportunities … industry feedback on the academic program" among other things.

Additionally, GU's Community Engagement & Continuing Education Centre (CECEC) emphasises as one of its goals: "Develop an effective partnership with local industry and labour market to conduct joint research." These mechanisms enable GU to act as a conduit for transferring academic knowledge and emerging technologies into industrial and business practice in Bahrain, thereby aligning with SDG 9's infrastructure and innovation targets.

4.3 Supporting Innovation via Consultancy

GU also fosters innovation by working with industry on applied research, consultancy and sponsored projects linking institutional research capacity to industry needs. GU's industrial partnership emphasizes collaborations with industry players such as the Bahrain Association of Banks, highlighting that "the partnership … provides industry-driven research opportunities and professional exposure for students."

Through such engagement, GU supports innovation in sectors like maritime services, banking/finance, intellectual property, logistics and telecom, helping to build domestic technology- and innovation-capacity. This reflects SDG 9

target 9.b (support domestic technology development, research & innovation) and contributes to resilient infrastructure by fostering industry-academia innovation linkages.

5. Community Engagement

During the academic year 2024-2025, the Community Engagement and Continuing Education Centre (CECEC) at Gulf University advanced Sustainable Development Goal 9 through strategic initiatives that strengthened Bahrain's innovation capacity, supported industrial skill development, and optimized the use of the university's advanced infrastructure.

No.	Activity / Initiative	Partner / Beneficiary	Objective	Impact / Indicator
1	Media Studio Collaboration	Ministry of Works & Ministry of Housing	Support digital public communication	Produced professional media content; enhanced national communication capacity
2	Media Studio Experience Program	Alfalah School	Introduce youth to creative and technical skills	50+ students trained; improved awareness of digital storytelling and innovation
3	Community Space Access	External organizations & innovators	Host innovation competitions and training	10+ community events hosted; strengthened GU's role as innovation hub
4	Donation of Vocational Equipment	Safety & Consultancy Center	Enhance industrial skill training tools	4 machines donated; increased access to mechanical training for 100+ trainees
5	Strategic Industry Partnerships (MoUs)	ASRY, Al-Jishi Group, Royal Humanitarian Foundation	Promote applied research & tech transfer	3 MoUs signed; initiated collaborative projects in engineering and industry
6	Startup Consultancy Services	Osus Legal Firm and SMEs	Provide legal and technical advice	Supported 5+ startups; improved innovation ecosystem support
7	Applied AI Solutions Showcase	Internal research teams	Demonstrate applied research outputs	2 AI models developed (smart irrigation, diabetes risk); enhanced visibility of research impact
8	AI & Digital Transformation Workshops	General community and professionals	Build digital literacy and innovation skills	80+ participants trained; improved workforce readiness for Industry 4.0
9	Incubator-Driven Educational Programs	Students & local entrepreneurs	Link innovation and entrepreneurship	3 training cycles conducted; supported early-stage SME creation

6. Entrepreneurship & SME Support

Gulf University recognizes the critical role that entrepreneurship, small and medium enterprises (SMEs) and innovation ecosystems play in advancing SDG 9 by promoting inclusive and sustainable industrialization, fostering innovation and building resilient knowledge infrastructure. To contribute to these goals, GU has developed a multifaceted approach that targets three key areas: (1) establishing an innovation-entrepreneurship hub; (2) providing mentoring, funding access and start-up support; and (3) promoting student participation in innovation competitions.

6.1 Innovation & Entrepreneurship Center

The University's dedicated Innovation & Entrepreneurship Center (IEC) serves as the institutional anchor for entrepreneurship activities open to students, alumni and the wider community. According to its mission statement, the IEC "works for aspiring and current project-owners from our students, graduates, and society to create their innovative business ideas and turn them into real successful projects." By providing a physical and organizational platform for ideation, business-model development and venture creation, GU establishes a hub that links academic learning, innovation culture and SME growth. This hub aligns directly with SDG 9's ambition of enhancing the capacity of domestic innovation systems and supporting new business creation.

6.2 Mentoring, Funding Access and Start-up Support

Through the IEC, GU offers a suite of services aimed at helping entrepreneurs to move from concept to market-ready ventures. These include training workshops, consulting services, research services for start-ups, and support in the early failure-phase of ventures a recognition that entrepreneurship involves risk and iteration. In particular, the hub provides:

- Mentoring by faculty, industry practitioners and alumni, helping start-ups refine business models, navigate regulatory/market challenges and build viable value propositions.
- Access to funding avenues (internal seed funding, grants, external investor links) and links to external stakeholders in the Bahraini SME and innovation ecosystem.
- Start-up support services e.g., prototype development, business-planning assistance, legal/IP guidance, and incubation support.

These services support SDG 9 by facilitating "technology development and innovation" (target 9.b) and by enabling new business ventures that contribute to innovation-led industrial growth.

6.3 Promoting Student Participation in Innovation Competitions

GU actively encourages its students to engage in innovation competitions, hackathons, business-plan contests and start-up challenges in Bahrain and the wider GCC region. By doing so, the University fosters an innovative mindset, entrepreneurial skills (creativity, risk-taking, teamwork) and industry-aligned outcomes. Participation in such competitions accelerates the translation of academic learning into real-world entrepreneurial activity and connects students with industry mentors, investors and partners.

This approach contributes to SDG 9 by building an "innovation ecosystem" where students act as drivers of change, knowledge transfer is enhanced, and industrial-relevant solutions emerge from the academic context.

SUSTAINABILITY-RELATED STARTUPS

Company Name	Issuing Date	Registration No	Product Type
Khalid Style	2024	68141-6	Mobile Accessories
Coffee Letcia	2021	68141-4	Snacks

Suk Al-Sajjad	2019	67569-9	Carpet Sales
Flare Media	2018	88404-1	Application (App)
Flare Media	2018	88404-1	Artistic Production and Photography
Dagous Restaurant	2016	38253-2	Breakfast, Lunch and Dinner
Jimmy Burger	2023	161904-1	Fast Food
UniFind	2023	Applied For	Application (App)
NSGI	2023	Applied For	Investing

6.4 Student-engaged activities

Across 2024–2025, seven major student-led or student-engaged activities were conducted that directly support SDG 9 through innovation, digital transformation, engineering creativity, and industry collaboration. These initiatives collectively enhance Gulf University's contribution to developing technological capacity, innovation ecosystems, and professional infrastructure awareness among students.

No.	Type of Activity	Title / Description	Date	Objective	Impact / Contribution to SDG 9
1	Professional Workshop	Engineering Profession in Bahrain	17 Oct 2024	Career preparation and skill development for engineering students	Enhanced professional skills, vocational awareness, alignment of academic learning with industry needs
2	International Conference	1st International Innovation & Advanced Technology Congress	30 Oct 2024	Promote innovation and academic exchange	Fosters innovation mindset, international collaboration, and future-oriented research culture
3	Exhibition Participation	Saudi International Building & Interior Design Exhibition	18–21 Nov 2024	Stay updated on the latest building and design trends	Strengthens industry insight, professional networking, and knowledge sharing across sectors
4	Competition Participation	ELO Interior Design Competition	5 Dec 2024	Develop creative and professional design skills	Promotes creativity, design excellence, and professional competence among students
5	Training Workshop	Comprehensive Digital Transformation	8 Mar 2025	Enhance understanding of technological change	Builds digital thinking, technology proficiency, and innovation capability
6	Forum	Arab Artificial Intelligence Forum	14 May 2025	Exchange expertise and best practices in AI applications	Encourages technical and research-oriented thinking, AI innovation, and collaboration
7	Exhibition	Engineering Graduation Projects Exhibition	26 May 2025	Showcase engineering knowledge and innovation outcomes	Demonstrates applied creativity, problem solving, and engineering innovation

7. Sustainability-Related Events (2022 – 2025)

Over the past three academic years (2022–2025), Gulf University (GU) has actively promoted sustainability awareness, innovation, and environmental responsibility through a diverse range of campus and community activities. These initiatives organized by student groups, academic departments, and university centers reflect GU's strategic commitment to the United Nations Sustainable Development Goals (SDGs), particularly SDG 9: Industry, Innovation, and Infrastructure, alongside related goals such as SDG 7 (Clean Energy), SDG 12 (Responsible Consumption), and

SDG 13 (Climate Action).

The following table summarizes the average annual number of sustainability-related events conducted during this period, highlighting GU's consistent efforts to integrate sustainable practices, foster innovation, and engage students, faculty, and community partners in creating a more resilient and environmentally conscious campus culture.

No.	Event / Initiative	Date / Year	Type of Activity	Key Theme / SDG Focus	Expected / Reported Impact
1	**Tree-Planting Day**	3 Dec 2022	Environmental Campaign	SDG 13 – Climate Action / SDG 15 – Life on Land	Promoted green campus initiative and student environmental awareness
2	**"Draw the Curtain" On-Campus Campaign for Energy Saving & Daylight Optimization**	2022	Awareness Campaign	SDG 7 – Affordable & Clean Energy / SDG 12 – Responsible Consumption	Encouraged efficient energy use and natural-light optimization
3	**SDGs Big Quiz (On-Campus)**	2022	Student Engagement / Educational Game	SDG 4 – Quality Education / SDG 17 – Partnerships for the Goals	Increased student knowledge of UN SDGs through interactive learning
4	**ETSAIDE Conference (Engineering & Technology for Sustainable Architectural and Interior Design Environments)**	6–7 Jun 2022	International Academic Conference	SDG 9 – Industry, Innovation & Infrastructure / SDG 11 – Sustainable Cities & Communities	Promoted interdisciplinary research on sustainable design and construction
5	**On-Campus Lighting with Solar Panels**	2022	Infrastructure Project	SDG 7 – Clean Energy / SDG 9 – Innovation & Infrastructure	Implemented renewable-energy solution to reduce power consumption
6	**Green Studio Café Project**	2022	Student Innovation Project	SDG 12 – Sustainable Consumption & Production	Applied sustainable design and resource-efficient construction methods
7	**Non-Print Campus Project**	2023	Institutional Policy Initiative	SDG 12 – Responsible Consumption / SDG 13 – Climate Action	Reduced paper usage through digital workflows
8	**3Rs Workshop (Reduce, Reuse, Recycle)**	2023	Training Workshop	SDG 12 – Responsible Consumption & Production	Built community awareness and sustainable waste-management skills
9	**"TV Version" Beach Cleanup Awareness Project**	2023	Environmental Awareness Campaign	SDG 14 – Life Below Water / SDG 13 – Climate Action	Promoted coastal protection and environmental stewardship
10	**SDGs Induction & Shared General Learning Material (University-Level)**	2024	Educational Integration Program	SDG 4 – Quality Education / SDG 17 – Partnerships	Integrated sustainability content across general education courses
11	**On-Campus Waste Segregation Plan**	2024	Operational Sustainability Initiative	SDG 12 – Responsible Consumption & Production	Improved recycling and waste-sorting practices on campus
12	**Sustainability Week & SDG Orientation**	16 – 20 Oct 2024	Awareness Week / Student Engagement	SDG 9 – Innovation / SDG 11 – Sustainable Communities	Reinforced sustainability culture among students and staff

No.	Event / Initiative	Date / Year	Type of Activity	Key Theme / SDG Focus	Expected / Reported Impact
13	**Smart Irrigation System Design – Green Campus Project (Initial Implementation)**	2025	Research & Innovation Project	SDG 9 – Innovation / SDG 13 – Climate Action	Introduced AI-based water-efficiency system for campus greenery
14	**Sustainability Week – 2nd Edition**	2025	Awareness Week / Student Showcase	SDG 9 / SDG 12 / SDG 13	Continued annual institutional commitment to sustainability and innovation
15	**International Conference on Sustainable Development & Innovation (ICSDI 2025)**	Planned Nov 2025	International Conference	SDG 9 – Innovation & Infrastructure / SDG 17 – Partnerships	Will enhance GU's academic and global engagement in sustainability research

Conclusion and Recommendations

Gulf University's initiatives under SDG 9: Industry, Innovation and Infrastructure, demonstrate its commitment to advancing technological innovation, applied research, and infrastructure development. The university continues to bridge the gap between academia and industry through active partnerships and innovative platforms.

Action Plan for Next Year

- Expand research collaboration with international institutions in sustainable infrastructure.
- Increase funding for innovation and prototype development under SDM-C and SEH.
- Launch a GU Innovation Challenge to promote cross-disciplinary creativity.
- Continue upgrading campus infrastructure with smart and energy-efficient technologies.

Gulf University remains a leading institution in encouraging innovation, driving sustainable industry, and building resilient infrastructure aligned with Bahrain Vision 2030 and the UN Sustainable Development Goals.

Additional evidence link:

- https://www.gulfuniversity.edu.bh/sdg-initiatives/sustainability-and-development-makers-center/sustainability-club-members/
- https://www.gulfuniversity.edu.bh/sdg-initiatives/sustainability-and-development-makers-center/
- https://www.gulfuniversity.edu.bh/centers/innovation-entrepreneurship-center/center-projects/
- https://www.gulfuniversity.edu.bh/centers/innovation-entrepreneurship-center/center-achievements/

Editorial Team

Compiled	Reviewed	Designed
Dr. Siddig Balal Ibrahim Dean, College of Administrative and Financial Science	**Dr. Tanvir Mahmoud Hussein** Head, Accreditation and Ranking	**Ms. Shereen Murad** Head, Planning & Development Unit

Dated: October 31, 2025