



Annual Report

Research & Innovation, Graduate Studies,
& Consultancies

| 2023-2024

15 December 2024/mg

Results

Research & Innovation

Research Funding

Type/Year	2020	2021	2022	2023	2024
External (3yr avg)	9,561,947	8,441,235	9,337,982	7,242,565	12,967,024
Internal (3yr avg)	731,333	583,466	670,800	2,233,864	2,277,731
CAPEX	3,000,000	3,000,000	3,500,000	3,500,000	4,000,000
TOTAL (3 yr avg) (SAR)*	13,293,280	12,024,701	13,508,782	12,809,763	18,911,421

* Includes annual CAPEX

Research Output (Alfaisal University affiliation from Scopus)

Year	2020	2021	2022	2023	2024 _{est}
Publications/Yr	465	583	700	820	950
Cum Total Publications	2,408	3,327	4,027	4,847	5,797
Citations/ Yr	22,543	30,000	40,000	52,500	67,500
Cum Total Citations	76,255	120,000	160,000	212,500	280,000
h index	90	113	120	130	140
Publications/FTF/Yr _(est)	2.5	2.6	2.7	2.8	2.9
Total Cit/Total Publ	32	36	40	44	48

Innovation & Patents

Year	≤ 2018	2019	2020	2021	2022	2023	2024 _{est}
Patents Granted	6	4	7	6	8	12	9
Cum Total Patents Granted	6	10	17	23	31	43	52
Patent Applications	8	5	2	11	6	7	9
Cum Total Applications	8	13	15	26	32	39	48

International Performance Indicators

Times Higher Education (THE) Young University Rankings 2023 placed Alfaisal 51st globally, 1st in Saudi Arabia.

THE ranked Alfaisal 36th in "The World's Best Small Universities" (2024)

U.S. News & World Report Best Global Universities Subject Ranking 2024-2025 placed Alfaisal **Clinical Medicine** #373 globally, & 1st internationally in normalized citation impact, & 17th globally in highly cited papers in top 1% most cited.

Alfaisal appeared in **Nature Index** which showed that institution had excellent research output in **Health & Biological Sciences** as well as very strong national & international collaborations.

Academic Ranking of World Universities (ARWU), also known as *Shanghai Ranking* reported three subjects for Alfaisal: **Public Health 201-300** (2024), **Clinical Medicine 201-300** (2023), & **Human Biol Sciences 301-400** (2023)



Graduate Studies

Graduate Programs	Number of newly enrolled & graduated students			
	2022-2023		2023-2024	
	Enr	Grad	Enr	Grad
Business	114	84	119	73
Medicine	136	54	113	14
Engineering	10	4	21	13
Science	6	3	1	0
Cumulative Totals	266	145	254	100

Graduate School Achievements

- *Biomedical Sciences master's programs* with its 12 tracks successfully accredited by *Royal Society of Biology (RSB)* in UK
- First PhD program in *Biomedical Sciences* started at Alfaisal
- *Permanent Committee* established to oversee all aspects of graduate studies, as per MOE requirements.
- International accreditation of seven graduate programs (i.e., *MCP, MSP, MGC, MPH, MRS, MAR, MRM*) by German Accreditation Agency for Health and Social Sciences (*AHPGS*)

Consultancies

Year	2020	2021	2022	2023	2024
TOTAL (3 yr avg) (SAR) (est)	11,600,000	5,100,000	5,700,000	10,200,000	23,700,000

During 2023 and 2024 funded projects came from Ministry of Health, Integrated Telecom Company (SALAM), Pearl Initiative, King Faisal Specialist Hospital & Research, Mohammed Al-Mana College of Medical Sciences, Municipality of Tabuk, Saudi Electricity Company, National Competitiveness Center, Saudi Electronic University (MOE)

Achievements by Faculty and Students



Research Awards Ceremony 2023 with faculty and students receiving recognition from Senior University Administration. *From Top down: Winners of Faculty Awards for Research Excellence 2023, Patent Awards, and Top Scientists Awards for Faculty on the Stanford University's Top 2% Scientists' List. Student poster winners 2023 in category "Medicine, Pharmacy & Health Science", in category "Science & Humanities", in category "Engineering & Technology", and in category "Business, Management & Law".*

Contents

1	Introduction.....	1
1.2	Restructuring to reflect the Evolution of the University	1
1.3	Ministry of Education Empowering Private Universities	1
1.4	Establishment of New Committees, Councils, Boards & Offices	1
1.4.1	Permanent Committee for Graduate Studies	1
1.4.2	Scientific Council	2
1.4.3	Institutional Accreditation & Quality Assurance Committee	2
1.4.4	Institutional Review Board	3
1.4.5	Sustainability & Strategic Planning Office	3
1.4.6	Laboratory Supervisory Committee	4
1.5	Strategic Plan	5
2	Research & Innovation	6
2.1	Research Themes & Initiatives	6
2.2	Research Funding & Activities	8
2.2.1	External & Internal Funding	8
2.2.2	Winners of Internal Research Grants & President’s Innovation Fund Grants	9
2.3.	Intellectual Property & Commercialization of Research	12
2.3.1.	Technology Transfer Office (TTO)	12
2.3.2	Increase in Number of Patents	13
2.4	Dimensions Startup Studios for Innovation & Design Thinking	15
2.4.1	Experimental & Discovery Studios for Creative Thinking & Entrepreneurship	17
2.5	Analysis of Research Output & Performance Indicators	19
2.5.1	Research Output Analysis	19
2.5.2	International Performance Indicators	19
2.6	Achievements by Faculty & Students	20
2.6.1	Faculty Awards for Research Excellence & Patent Awards	20
2.6.2	Faculty Promotions	21
2.6.3	Stanford University’s “World’s Top 2% Scientists” List	21
2.6.4	Arab Environmental Excellence Award 2024 for Environmental Science	22
2.6.5	Researcher Ranked Among Top Global Biosensors Scientists by Scholar GPS .	22
2.6.6	Chemist Wins Silver Medal at International Exhibition of Inventions	23
2.6.7	Alfaisal Eco Team at Shell Eco Marathon 2024	23
2.6.8	Annual Research Day Student Poster Competition	25
2.7	Institutional Review Board (IRB)	26
2.8	Laboratories & Research Infrastructure	27

3	Graduate Studies	28
3.1	Graduate School & Changes in Ministry of Education Rules.....	28
3.2	Accreditation of Graduate Programs	28
3.3	Graduate Programs.....	29
3.3.1	New Admissions Enrolment, Graduation Rates & Achievements.....	29
3.3.2	PhD Program in Biomedical Sciences	29
3.3.3	Master’s Programs	30
3.3.4	Higher Diplomas.....	30
4	Business Centre & Consultancies	32
4.2	Research & Consultation	33
4.2.1	Alfaisal Corporate Governance Center.....	33
4.2.2	Alfaisal Competitiveness Consultancy Center.....	33
4.2.3	Alfaisal Center for Health Economics & Finance	34
4.2.4	Alfaisal Statistical Consulting Unit.....	34
4.3	Laboratories	34
4.4	Alfaisal Extension.....	35
4.5	Advanced Manufacturing	35
4.6	IP Licensing.....	36

Executive Summary

The university has grown in complexity so that it was necessary to create a separate Office of Research & Innovation, a stand-alone Graduate School, and a Business Center (i.e., Center for Research & Consultancy Studies). Each has its own Director for overall administrative duties & functions and reporting the Vice President for Graduate Studies, Research & Innovation.

At Alfaisal University the focus remains on eight main research themes: energy systems, advanced manufacturing & high value materials, digital technologies, human capital, food and environment, health and pharmaceuticals, urban and logistics, and economy and privatization. These themes are in coordination with Vision 2030, the Ministry of Education, and the sustainable development goals and are in alignment with government agencies. In addition, the Office of Research & Innovation, in consultation with faculty in the Colleges, initiated five flagship initiatives: Health Innovations (alfa-Hi), Advanced Manufacturing (AIAM), Human Capital (AHCI), Sustainable Development (ASDI), and Health Biotechnology (AHBI).

Two successful examples from the Technology Transfer Office were the development of a high temperature high pressure water shutoff chemical system based on nanocomposites for Saudi Aramco. The aim here was to increase the amount of oil being recovered. This fell under the research theme “Advanced Manufacturing & High Value Materials”. The second example was from the “Health & Pharmaceuticals” research theme and has been commercialized by a Saudi company called SAMCO. Based on Alfaisal faculty IP, the company helped to develop and manufacture molecular biology kits & reagents for diagnostics & research. This was spun out into the Samco company.

The total external & internal research funding awarded in 2024 was 18,911,421 SAR (3yr avg.) compared with 12,809,763 SAR the previous year. This was an outstanding achievement for Alfaisal University faculty members. A total of 23,700,000 SAR (3 yr avg.) was also awarded in 2024 through contracts with external entities such as Ministry of Health, Integrated Telecom Company (SALAM), Pearl Initiative, King Faisal Specialist Hospital & Research, Mohammed Al-Mana College of Medical Sciences, Municipality of Tabuk, Saudi Electricity Company, National Competitiveness Center, Saudi Electronic University (MOE).

Research output in 2024 reached 950 publications and 67,500 citations as measured by Scopus. The cumulative total number of publications and citations was 5,797 and 280,000 respectively. In 2024 the h index reached 140 with an estimated 2.9 publication per full time faculty per year.

Over the past 2 years the intake of new graduate students was 266 in 2022-2023 and 254 in 2023-2024. Similarly, the graduation rate was 145 in 2022-2023 and 100 in 2023-2024. Furthermore, changes in the Ministry of Education (MOE) rules and regulations, have allowed private universities to approve and administer their own graduate programs including doctoral. As a result, a PhD program in Biomedical Sciences was started in September 2023. A new committee (i.e., Permanent Committee for Graduate Studies) was established for general oversight. Eight graduate programs also received international accreditation (i.e., Royal Society of Biology (RSB) (UK), and Accreditation Agency for Health & Social Sciences (AHPGS) (Germany)).

1 Introduction

1.2 Restructuring to reflect the Evolution of the University

With the start-up of the university in 2008 an *Office of Research & Graduate Studies* was created to manage and administer all the related activities. The university has grown in complexity so that it was necessary to create a separate *Office of Research & Innovation*, a stand-alone *Graduate School*, and a *Center for Research & Consultancy Studies* (i.e., *Business Center*). Each was assigned its own Director for overall administrative duties & functions and reporting the Vice President for Graduate Studies, Research & Innovation (Figure 1).

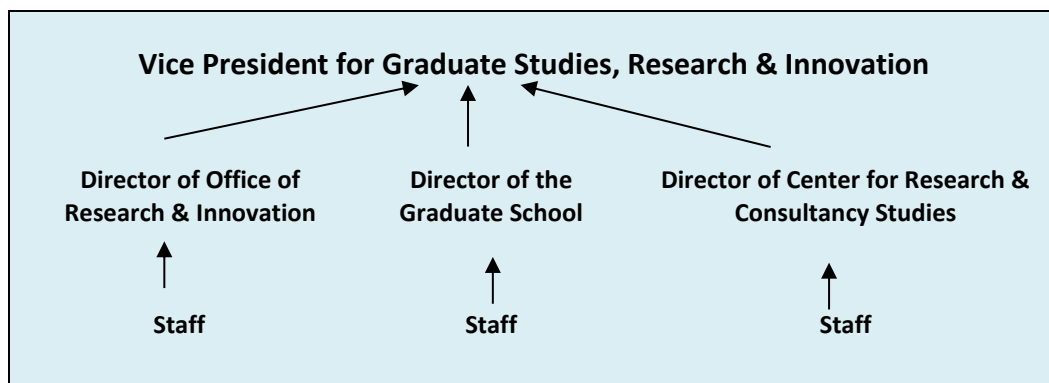


Figure 1. Organizational Chart for Office of Research & Innovation, Graduate School, and Center for Research & Consultancy Studies

1.3 Ministry of Education Empowering Private Universities

With recent changes in the *Ministry of Education (MOE)* rules and regulations, private universities have now been empowered to approve and administer their own graduate programs including doctoral (i.e., PhD degrees). While this has increased the freedom and flexibility of universities such as Alfaisal it has also increased an institution's responsibilities. For example, before a PhD program can start the relevant master's program must be accredited. In addition, several new committees had to be established for general oversight & quality assurance (i.e., Permanent Committee for Graduate Studies; the Scientific Council and the Institutional Accreditation & Quality Assurance Committee).

1.4 Establishment of New Committees, Councils, Boards & Offices

1.4.1 Permanent Committee for Graduate Studies

The Ministry of Education *Council of Universities' Affairs* requires that an institution should have a *Permanent Committee* to oversee all aspects of graduate studies (adopted at *Council of Universities' Affairs 9th mtg held 1 August 2022*). Chaired by the Vice President for Graduate Studies & Research, it

reports directly to the University President. At Alfaisal University membership consists of Deans, Vice Deans of Graduate Studies of colleges, as well as the Director of Graduate Studies, and the Director for Quality Assurance & Accreditation. Many graduate programs, for example, also involve thesis/dissertation research and thus require oversight by the Permanent Committee.

1.4.2 Scientific Council

The Ministry of Education Council of Universities' Affairs has mandated that an institution should also have a Scientific Council to oversee all aspects of scientific matters pertaining to faculty members, research activities, studies, and publications (adopted at Council of Universities' Affairs 9th mtg held 1 August 2022). The Council is constituted for a duration of three years. The individual responsible for overseeing scientific research (i.e., VP for Graduate Studies & Research) at the university shall serve as the chair of the Scientific Council. Membership, which is approved by the Alfaisal University Board of Trustees is comprised of a representative from each college holding at least the rank of associate professor. Three faculty members from external institutions, each holding the rank of at least associate professor, are included in the Council. The Scientific Council also has a Secretary General from the faculty members of the university, nominated by the chair of the Scientific Council and appointed by the President of the University for a renewable term of three years. At Alfaisal University, for example, the Secretary General is responsible for processing all external reviews associated with faculty promotions. The secretary neither possesses voting rights nor is included in the quorum count.

1.4.3 Institutional Accreditation & Quality Assurance Committee

As part of the new MOE rules & regulations empowering universities to establish and administer their undergraduate and graduate programs, an *Institutional Accreditation & Quality Assurance Committee* was established by the Alfaisal University President through an *Administrative Decision (05/09/2024)*. The Committee will play a crucial role in ensuring and enhancing the quality of education and academic standards at the university by implementing quality assurance policies, maintaining documentation, providing training, and supervising audits to ensure compliance with national and international accreditation standards.

The members of the *Institutional Accreditation & Quality Assurance Committee* consist of College Vice Deans for Quality Assurance and the University Director for Quality Assurance and Accreditation who serves as the chair.

Committee responsibilities include:

1. Propose and implement quality assurance policies and procedures to enhance the quality of teaching and learning and promote quality culture within the university.
2. Communicate policies and procedures and provide training and oversight.
3. Review and assess the institutions with accreditation requirements, identify areas of non-compliance, and develop action plans to address deficiencies.
4. Participate in the preparation of the self-study reports and review visit.

5. Supervise internal audits and validation of portfolios at the course, program, and college levels.
6. Provide reports to institutional leaderships on accreditation status and QA initiatives.
7. Promote transparency in the accreditation process and quality assurance activities,

1.4.4 Institutional Review Board

In compliance with the provisions of the Saudi Law of Ethics of Research on Living Creatures and regulations, and under guidelines of the National Committee of Bioethics (NCBE), Alfaisal University founded and registered an *Institutional Review Board (IRB)* under the number (HA-01-R-058). The Board consists of 9 members: a chair, vice chair, and 8 members in various specialties”, including Medicine, Business, Engineering, Science, Pharmacy, Biostatistics, Epidemiology, Law, and Public Health, and a community representative. In addition, the IRB has a designated coordinator.

Researchers can apply online to obtain IRB approval of their research projects (<https://irb.alfaisal.edu/>). The IRB is an independent board and does not report to the University administration. The IRB is regulated by the NCBE with the mandate to review human subject research studies that take place within Alfaisal University. The purpose of review is to determine if the proposed research meets established regulatory and ethical criteria of the Law of Ethics of Research on Living Creatures. and its regulations, and in compliance with the guidelines of the NCBE. The IRB licenses and monitors the conduct of human subject research at Alfaisal University.

1.4.5 Sustainability & Strategic Planning Office

The *Sustainability & Strategic Planning Office* was established to integrate sustainability into the University's growth and development plans. Its aim is to advance sustainability in education, research, operations, and community engagement, while promoting a culture of responsibility and stewardship for the environment (<https://sustainability.alfaisal.edu/>). The University is deeply committed to its institutional mission of providing excellent and versatile world-class education, research, and innovation that contribute to serving society and achieving sustainable development. Using the University's resources and strategic partnerships, recognizes the critical importance of contributing to the *United Nations Sustainable Development Goals (SDGs)* and the country's development objectives.

Core goals:

1. Integrate sustainability principles into the curriculum across all disciplines, offering courses and programs that educate students on environmental stewardship and social responsibility.
2. Foster interdisciplinary research initiatives focused on sustainability challenges, encouraging faculty and students to collaborate on innovative solutions to environmental and social issues.
3. Implement sustainable practices across campus facilities, striving for carbon neutrality, reducing waste, conserving water, and promoting energy efficiency in buildings and infrastructure.
4. Engage the campus community through outreach programs, events, and initiatives that raise awareness about sustainability issues, empower

students and staff to act, and foster a culture of environmental responsibility and activism.

5. Implement a Strategic Sustainability Plan by establishing a clear, actionable roadmap to integrate sustainability across university operations, curriculum, and community engagements, ensuring progress towards United Nations SDGs.
6. Commit to Continuous Improvement in Sustainability Practices by regularly reviewing and updating the institution's sustainability strategies and practices, incorporating the latest best practices and feedback from the community and stakeholders to enhance performance and impact over time.

1.4.6 Laboratory Supervisory Committee

A *Laboratory Supervisory Committee* was formed on 2 Sept 2023 by an Administrative Decision from the University President. The Committee was tasked with ensuring the optimal utilization of Alfaisal University laboratories to cater to various purposes, including facilitating teaching for both undergraduate and graduate studies, supporting research initiatives, and fulfilling obligations related to contracted projects. Guiding principles included:

- Any research space belongs to the institution and is a valuable resource. The President is ultimately responsible for the allocation of research space to colleges and departments.
- Research and teaching space is allocated based on program requirements and priorities as determined by the *Laboratory Supervisory Committee*, in consultation with the VP GRI, College Deans, Laboratory Managers and faculty and staff members.
- Colleges and departments are required to develop quantitative measures to assist in periodic evaluation of research space utilization and determine how the current allocation of research space meets their stated program requirements and priorities.
- Research space assignments are not permanent, and each space is assigned to activities and not individuals. Accordingly, any laboratory space is subject to reassignment as activities change.
- Teaching space in laboratories is dependent on scheduling of courses and is assigned through the Student Affairs Scheduling system.
- Any designated space that is currently vacant or deemed underutilized should be reassigned or repurposed. College and departments should have a clearly defined plan to improve the utilization of an existing or newly released space.
- Colleges and departments may decide to subsidize certain research activities that do not generate sufficient indirect cost recovery to fully support the infrastructure and space usage operating costs, based on their operating budgets and research priorities. However, the rationale and period for the subsidy must be clearly defined.
- Optimal use of research space includes shared use of all available resources and facilities.
- Research space assignments should be based on Alfaisal University existing facilities, where possible, to ensure that current facilities are fully utilized before pursuing any major construction or renovations. Space renovations must follow the college and university approval processes to ensure that space utilization meets the strategic needs of the college.

- Research space, equipment, and materials must adhere to all health and safety policies and procedures.
- Research conducted in Alfaisal University facilities must primarily support the university interests and relationships, with all research conducted adhering to the university conflict of interest policies.
- Research space allocation must adhere to the university policies that prohibit discrimination.

1.5 Strategic Plan

The Strategic Plan 2020-2025 established the trajectory of Research & Graduate Studies at Alfaisal University for the next five years. For more details please see the document at <https://research.alfaisal.edu/storage/app/media/pdf/Strategic-Plan-2020-2025-ORG-2020.pdf>. The year 2023 marked the 15th anniversary of the University and the many accomplishments achieved in these years. In the case of Research & Innovation and Graduate Studies, this included having achieved top-tier rankings at the national, regional, and international level (see section 1.5). Alfaisal has also been fully accredited by the NCAAA, receiving the institutional maximum accreditation of seven years. The Strategic Plan anticipated that the University needed to expand its offerings of stand-alone and joint-degree programs at both the masters and doctoral levels, to enhance externally funded research grants & contracts, and to aid in entrepreneurship by developing new products and companies such as small to medium enterprises (SMEs) for the country. The Strategic Plan used innovative methods to identify challenges, to capitalize on opportunities, to adopt effective planning tools, to mobilize stakeholders, to provide a roadmap for implementation, and to evaluate performances. The Strategic Plan featured four strategic themes, seven goals, 11 strategic objectives, 37 strategic actions, and 82 key performance indicators (KPIs).

2 Research & Innovation

2.1 Research Themes & Initiatives

Research themes were developed that focussed on broad areas that would guide research efforts within a particular field or discipline. They were used to define the scope of research and to identify the key questions and issues that researchers aim to address. At Alfaisal University the focus was on eight (8) main themes: energy systems, advanced manufacturing & high value materials, digital technologies, human capital, food and environment, health and pharmaceuticals, urban and logistics, and economy and privatization (<https://research.alfaisal.edu/>) (Figure 2). These themes were in coordination with *Vision 2030*, the *Ministry of Education*, and the sustainable development goals and were in alignment with the themes of government agencies who could provide funding. As new research is conducted and new insights are gained, research themes may shift and evolve to reflect these developments. In addition, the Office of Research & Innovation, in consultation with faculty in the Colleges, also introduced five flagship initiatives *Health Innovations (alfa-Hi)*, *Advanced Manufacturing (AIAM)*, *Human Capital (AHCI)*, *Biotechnology (ABI)*, and *Sustainable Development (ASDI)* (Figures 3 & 4).



Figure 2. Alfaisal University Research Themes

Advanced Manufacturing (AIAM)

Director: Dr Mutasem Shehada

Health Innovations (Alfa-HI)

Director: Dr Mohamad Bahloul

Sustainable Development (ASDI)

Director: Dr Edreese Al Sharaeh

Health Biotechnology (AIHB)

Director: TBD

Human Capital (AHCI)

Director: Dr Diana Korayim

Figure 3. Alfaisal University Flagship Initiatives

Alfaisal Center for Health Innovations (alfa-HI)


Primary Theme  Health & Pharma **Lead** College of Medicine & College of Pharmacy



Objectives

1. Generate evidence-based solutions for pressing challenges in healthcare
2. Create a focused multidisciplinary clinical R&D ecosystem
3. Establish a health informatics database
4. Support translational research initiatives & commercialization of innovations
5. Establishing a comprehensive partner network, both nationally & globally

Alfaisal Initiative for Advanced Manufacturing (AIAM)

Primary Theme  Adv. Mftg & Materials **Lead** College of Engineering



Objectives

1. Offer support for product innovation, design, modeling, and prototyping
2. Provide consultancy on product viability and market need
3. Introducing artificial intelligence and machine learning in management and factory operation
4. Training through impactful, modular packages matching industry needs
5. Realizing model factories (or capability centers) for the Kingdom

Alfaisal Human Capital Initiative (AHCI)

Primary Theme  Human Capital **Lead** Office of Research & Innovation



Objectives

1. Identify a skills match between technical and talent
2. Bridge the gap by upskilling and reskilling
3. Identify emerging roles with preparation plans in place
4. Equip talent with the right technical and transferable skills
5. Shift to Industry 4.0 through digital transformation
6. Strengthen Islamic values and national identity

Alfaisal Sustainable Development Initiative (ASDI)

Primary Theme  Food & Env. **Lead** College of Science & General Studies



Objectives

1. Maintain and review alignment with the Kingdom's Green Initiative
2. Establish connections with energy and environmental stakeholders in the Kingdom
3. Establish a model pipeline for innovations in sustainable development
4. Target solutions of immediate ROI both economically and environmentally
5. Capitalize on synergies between different efforts in the University

Alfaisal Health Biotechnology Initiative (AHBI)

Primary Theme Health & Pharma **Lead** College of Medicine

Figure 4. Flagship initiatives. *From top down:* Health Innovations (alfa-Hi), Advanced Manufacturing (AIAM), Human Capital (AHCI), Sustainable Development (ASDI) & Health Biotechnology Initiative (AHBI)

2.2 Research Funding & Activities

2.2.1 External & Internal Funding

The total external research funding awarded in 2023 was 7,242,565 SAR (3 yr avg) and in 2024 it was 12,967,024 SAR (3 yr avg) (Table 1). In 2024, a total of 17 million SAR was awarded by *Research, Development and Innovation Authority (RDIA)* for rehabilitating five existing laboratories (Table 2). The RDIA research grants were designed and prioritized to support cutting-edge research that can create value for society (<https://rdia.gov.sa/grants/index.html>). This major source of funding came in three basic forms: *Saudi Basic Science Initiative*, *Saudi Applied Research and Technology Initiative*; and *Reactivation and Rebuilding of Existing Labs Initiative*. What makes the Alfaisal RDIA grants so unique is that all 5 submissions were approved for funding. Furthermore, four *Saudi NIH Grants* were awarded in 2024 for translational research (Table 3).

Three-year averages were calculated to reduce fluctuations since most research grants were awarded for a multiyear period. For example, in 2024 the 3-yr average was 12,967,024 SAR which was based an average of the actual external grants awarded in 2022, 2023 & 2024 (i.e., average of 15,901,072 SAR, 3,000,000 SAR, and 20,000,000 SAR, respectively). For internal funding, *President's Innovation Fund (PIF)* grants totalling 4,640,192 SAR were awarded to faculty in 2023.

Table 1. Research Funding Awarded (SAR) from 2020 to 2024

Type/Year	2020	2021	2022	2023	2024
External per yr	9,286,250	2,826,625	15,901,072	3,000,000	20,000,000
3yr avg	9,561,947	8,441,235	9,337,982	7,242,565	12,967,024
Internal per yr	651,000	668,400	693,000	5,340,192	800,000
3yr avg	731,333	583,466	670,800	2,233,864	2,277,731
CAPEX per yr	3,000,000	3,000,000	3,500,000	3,500,000	4,000,000
TOTAL (SAR)*	12,937,250	6,495,025	20,094,072	11,840,192	24,800,000
TOTAL 3 yr avg (SAR)*	13,293,280	12,024,701	13,508,782	12,809,763	18,911,421

* Includes annual CAPEX

Table 2. Research, Development and Innovation Authority (RDIA) funding for rehabilitating five existing laboratories totalling 17 million SAR

Project Code	Project Title	Lead Res	Collaborators
12813-alfaisal-2023-FU-R-2-1-HW	Reactivating & Rebuilding a BioTech Incubator Lab at Alfaisal University in Riyadh	Mattheus Goosen	Ahmad Aljada, Edreese Alsharaeh & Mohammed Zourab
12834-alfaisal-2023-FU-R-3-1-SE	Reactivation of NETSAL LAB for Sorption Desalination and Cooling in Alfaisal University to integrate innovative and pioneer adsorption water desalination technology NETSAL with low-cost seawater electrolyzer for green hydrogen production.	Yousef Alyousef	Alia Abu Bakir
12837-alfaisal-2023-FU-R-3-1-EF	Computational Methods and Intelligent Technology in Architecture and Design (CM-iTAD) Lab	Abdulrahman Ahmed Alymani	Ammar AlAmmar, Fawaz Bn Sarra
12839-alfaisal-2023-FU-R-3-1-EI	Reactivating & Rebuilding Grant Proposal for the Joint Smart Grids and Electric Vehicles Research & Development Center at Alfaisal University	Ahmed Oteafy	Abdelhamid Taha
12947-alfaisal-2023-FU-R-3-1-EF	Revitalizing davinci - davinci advanced technologies research center of alfaisal university: a blueprint for advancing technologies in cyber-physical systems and non-humanoid social robots	Tarek H. Moktar	Abdelhamid Taha

Table 3. Saudi NIH Grants 2024 for translational research

Project Title	Principal Investigator (PI):	Co-investigators
Hepatocellular Carcinoma in Saudi Arabia: A 15-Year Epidemiological and Pathological Analysis (2008-2023)	Shoukat Ali	Peter M.B. Cahusac, Abrar Barakzai
Investigating the Burden and Characteristics of Prostate Cancer in Saudi Arabia: A Public Health Perspective	Ahmed Yaqinuddin	-
Understanding Diabetes in Saudi Arabia	Jan Mietek Smolarski	Noara AlHusseini, Hala Tamim and Hesham Al-Barrak
The Prevalence of Diabetes Mellites among Confirmed Pulmonary Tuberculosis Patients: A Cross-Sectional Study in Saudi Arabia	Hana Abdalla	Atef Mohamed Shibl, Abdullah Almohaizeie, Jumana Mohammed Idris, Saba Mohammad Almohammad, Jude Ayman Abdalla

2.2.2 Winners of Internal Research Grants & President's Innovation Fund Grants

A total of 687,133 SAR and 731,000 were awarded for in *Internal Research Grants* in 2023 and 2024 respectively (*IRG2023 & IRG 2024*) (Tables 4, 5). For the President's Innovation Fund (PIF) 4,640,192 SAR was awarded in 2023 (Table 6). PIF grants were larger than IRGs and had to fit into on the university strategic initiatives. See section 2.1 and the university research website link <https://research.alfaisal.edu/initiatives>. There are five flagship initiatives **Health Innovations (alfa-Hi)**, **Advanced Manufacturing (AIAM)**, **Human Capital (AHCI)**, **Biotechnology (ABI)**, and **Sustainable Development (ASDI)**

Table 4. Winners of Internal Research Grants Competition 2023 at Alfaisal University

Name of PI	College	Project Title
Sirajul Islam	Business	Cashless Payment ecosystem and cyber security: Understanding the digitalization of payment (Fintech) Systems in the KSA
Jan Smolarski	Business	Predicting Firm Value Through Brand Buzz Metrics (2nd Phase of the project) Enhanced Data Base Request
Sumaya Hashim	Business	Woman Entrepreneurs in Family business
Ashley Carreras	Business	The use of Group Decision Support System (GDSS) in Aiding Collective Decision Making
Rafael Leal Arcas	Law	The Creation of a Climate Club for a Sustainable Future Innovation and Technology
Mohamed Bahloul	Engineering	Data Driven Multi Scale modelling for coronary artery disease: Emphasis on In-silico simulation
Zuruzi Abu Samah	Engineering	Design fabrication and testing of a aqueous ozone generator
Muhammad Anan	Engineering	An Efficient Pairing Technique using Multiple UAVs for 6G and future IoT Networks
Safia Dawood	Engineering	IoT-based Sensory Profile Monitoring System for Geriatric Patients Using Machine Learning
Driss Benhaddou	Engineering	Simplified Tool for Rapid Feasibility Study of Deploying Sustainable Energies in Smart Building for Non-Tech Users
Ali Hendaoui	Science	Processing of Nonequilibrium Advanced Materials
Amjad Fataftah	Science	Development of Rapid screening assay for the detection of toxins contamination
Qasem Ramadan	Science	Development of Modular Lab-on-a-Chip Platform for In Vitro Micro Physiological Systems

Abdelrahman Soliman	Science	MoS ₂ /G 2D Based Hybrid Nanocomposites for Catalytic Hydrogen Production
Mohammad Khanfar	Pharmacy	Discovery of Novel Mpro Inhibitors as Therapeutic Candidates of SARS-CoV-2 Infection
Adeola Tawakalitu	Pharmacy	Development and evaluation of emulgels incorporated with essential oils for the topical management of acne vulgaris
Muthanna Alabdawi	Pharmacy	Development of sustained release formulation of Empagliflozin Metformin with pharmaceutical equivalent properties to the innovator Synjardy XR for type II Diabetes Mellitus Treatment
Abderrahman Ouban	Medicine	Biomarkers the Epithelial-Mesenchymal Transition (EMT) Phenomenon of Breast Cancer
Samah Zarroug	Medicine	Screening novel antimicrobials using <i>Caenorhabditis elegans</i> as a live infection model
Ahmed Yaqinuddin	Medicine	Point of care paper-based alanine aminotransferase (ALT) diagnosis for monitoring the liver damage
Braa Glayini	Medicine	The impact of a student-led community engaging health promotion project on knowledge translation at Alfaisal University
Shoukat Ali	Medicine	Association of Circulating Serum MicroRNAs with Obesity and Non-Alcoholic Fatty Liver Disease
Hatouf Sukkarieh	Medicine	Is there a Role for vitamin D in Diabetic Nephropathy

Table 5. Winners of Internal Research Grants Competition 2024 at Alfaisal University

Name of PI	College	Project Title
Omar Z Ameer	Pharmacy	Pharmaco-equivalence and comparative studies of popular oral solid dosage
Mamoun M. Bader	Science	Crystal Growth of Functional Materials onto Modified Surfaces and Fabrication of Single Crystal Devices
Souraya Goumri Said	Science	Empowering Energy Sustainability Solutions through Innovative Materials Design and Applications
Ahmad Hani Sawalmeh	Engineering	Development & Deployment of Hybrid Ren Energy-Powered Fixed-Wing Electric UAVs for Civilian & Defense Applications
Abdulrahman Alymani	Engineering	Graph Machine Learning to Uncover the Complex Topological Relationship in Building Systems
Mohammed Kafaji	Business	Entrepreneurial Propensity of Saudi Graduate: Roles of Environmental Cultural and Educational Factors in Promoting Individual Entrepreneurial Orientation
Mevludin Memedi	Business	Behaviors and beyond: Investigating information security policy compliance among IT professionals in Saudi Arabia
Mahmoud Fallatah	Business	Innovation in Saudi Arabia: Further Exploration
Fahad Alammar	Business	A Case Study: Employee Perspectives on Organizational Change and Development
Haitham A. Al-Zoubi	Business	Simple is Beautiful: A single parameter diffusion model for bond and option prices
Ibrahim Abosag	Business	The Impact on the Metaverse on Sustainable Fashion: Examining Own Virtual Influencers vs Independent Virtual Influencers
Nourah Alfayez	Business	Expatriates' Careers and Citizenship Behavior in the Saudi Market
Welf H. Weiger	Business	Content vs. Brand Focus in Influencer Marketing
Wessam Abouarghoub	Business	The Impact of Geopolitical Disruptions on Shipping Industry GHG Emissions: The Red Sea Crisis
Wessam Abouarghoub	Business	Optimising Maritime Supply Chain and Logistics through Advanced Shipping Dashboard Analytics for GCC countries
Adnan Abo Alhaija	Business	Dynamics of Investor Sentiment and Market Expected Returns: A sequential Forecasting Approach
Anfaal Ahmad	Business	A Geopolitical Economy of Accountability: a Case Study on MariaB, a Global Pakistani designer
Brendan Lambe	Business	Offshore Banks and their role in corruption
Michael Muchiri	Business	How and when Positive Leader Behaviours improve Employee Mental Wellbeing Thriving and Safety Behaviors in Saudi Arabian Organizations
Sheraz Alam Malik	Business	AI and human learning: A Critical Appraisal

Abdelmonim Shaltoni	Business	Exploring the Effects of Boycotting on Local Brands: Insights from Consumers and Businesses
Mishal Ahmed	Business	School curricula and university performance: Evidence from Saudi Arabia
Rahma Lahyani	Business	Business Analytics Tools & Sustainability Practices: Progress and Prospects
Rami Bustami	Business	Economic Evaluation and Cost-Effectiveness of Treatment of Rare Conditions: The Case of Idiopathic Pulmonary Fibrosis (IPF)
Ruba S. Hamed	Business	Does Sustainability Profiles Impact FinTech Companies' Financial Value?
Anfaal Ahmad-Khan	Business	Navigating Corporate Social (Ir)Responsibility in the Era of social media: Enhanced Corporate Accountability or Deception?
Lina Sami Jamjoom	Medicine	From Genes to Metabolites: Charting the Metabolic Landscape of Familial Hypercholesterolemia for Atherosclerosis Insights.
Baraa Alghalyini	Medicine	Factors Associated with Death among Solid Organ Transplant (SOT) with COVID-19 in Saudi Arabia

Table 6. Winners of President's Innovation Fund (PIF) Grants in 2023

Name of PI	Initiative	Project Title
Adnan Alhaiji	AHCI	Human capital, dynamic structural changes, and sustainable economic development: An empirical study applying endogenous economic growth models.
Barra Alghalyini	AHCI	Wellness Assessment and Implementation in Alfaisal University: A Comprehensive Approach to Enhancing Faculty, Staff, and Student Wellbeing
Emily Wilson	AHCI	An Investigation of the Factors Contributing to Leadership Self-Efficacy Among Arab Women in Saudi Arabia
Robert Zacca	AHCI	The Determinants of Innovative Capabilities within Entrepreneurial Businesses
Ahmad Aljada	Alfa-HI	Alfaisal University Portable and Rapid Molecular Diagnostic (Alpha-MDx) PCR Platform for Molecular Testing
Edreese H. Alsharaeh	Alfa-HI	Poly (styrene-co-methyl methacrylate)-Silver/ Reduced Graphene Oxide -nano Hydroxyapatite Composites as Potential Multi-Functional Artificial Bone Cement
Mohamed Bahloul	Alfa-HI	MRI2CT: Cutting-Edge Synthetic CT Generation based MRI-only for Precision Radiation Oncology
Mohammed Zourob	Alfa-HI	An Integrated and ultrasensitive Biosensors for Biomedical Applications
Edreese H. Alsharaeh	ASDI	Hydrogen generation from plastic waste.
Abdulrahman Soliman	ASDI	Development of High-Temperature Lithium Ion Cylindrical Cells (AAA) for Commercial Applications
Ahmed Oteafy	ASDI	Development of Distributed Energy Resource Modules and Control Schemes for DC Microgrids
Nidal Nasser	AIAM	the Intelligent IoT and Blockchain Solution for Sustainable Agriculture
Abdalla Al Rashdan	AIAM	Enabling Human-AI Collaboration for Effective Task Accomplishment in the Industry 5 Transformation of Saudi Arabian Industries
Abdelghani BOURAS	AIAM	Designing and developing industry 4.0 maturity model using mcdm methods - an application in different industrial sectors in saudi arabia
Farid Amoula	AIAM	Novel Ergonomic Computer Mouse for an Enhanced User Experience in 2D, Space, and 3D Interaction and Control
Mutasem Shehadeh	AIAM	Nature Inspired Design of Sport Helmets
Ali Hendaoui	AIAM	Preparation of functionalized graphene/ holy graphene via ball milling

2.3. Intellectual Property & Commercialization of Research

2.3.1. Technology Transfer Office (TTO)

Intellectual property (IP) plays an essential role in the research and teaching functions of universities. This includes IP created by universities and third-party IP that they use in their work. The Technology Transfer Office (TTO) is the entity responsible for all aspects of technology and Intellectual Property (IP) creation, management, transfer, and release at the University (<https://tto.alfaisal.edu/>).

Mandate, Composition & Designated Authority

Scope of the TTO mandate is as follows:

- Develop, maintain, and update programs for technology and IP management and transfer.
- Identify, evaluate, and commercialize disclosed technology and IP in a periodic manner.
- Maintain complete records of all disclosed IP and material transfer agreements.
- Educate and motivate members of Alfaisal University on Technology Transfer and IP aspects.

A Director oversees and manages the operation of the TTO appointed by Alfaisal University and reports directly to the VP for Graduate Studies, Research & Innovation.

The main TTO structure duties will include the following:

- Technology identification, assessment and filing (protection).
- Technology and IP record management and marketing.
- Technology marketing.

Alfaisal University is responsible for managing, executing the intellectual property policy at Alfaisal University and represents, the university in all the policy issues that affect the university's relations with the community of Alfaisal University, government, private entities, and others. It has the right to manage this policy and to grant Delegations and Authorities.

Technology Transfer Office

Reporting to the VP for Graduate Studies, Research & Innovation, the Director is charged with leading the Technology Transfer Office (TTO) with carrying out the responsibilities described below:

- a) Develop and implement an Intellectual Property management and technology transfer program to help achieve ALFAISAL UNIVERSITY 's economic development goals.
- b) Identify, evaluate and commercialize disclosed Intellectual Property and report periodically thereon to the ORI.
- c) File patent applications and other legal registrations as may be necessary to protect ALFAISAL UNIVERSITY Intellectual Property to be filed with the relevant authorities in a timely manner.
- d) Facilitate and integrate, in consultation with the Office of ORI, the negotiation and drafting of all Intellectual Property related agreements across ALFAISAL UNIVERSITY and its subsidiaries.

- e) Report and account for Gross and Net Revenue derived from ALFAISAL UNIVERSITY Intellectual Property and report to the ORI and the Director of Finance and Director of Human Resources as directed.
- f) Ensure that ALFAISAL UNIVERSITY meets all Intellectual Property related commitments that are contained in research contracts, licenses and other agreements.
- g) Maintain complete records of all disclosed Intellectual Property and material transfer agreements.
- h) The Director is to serve as secretary of the ALFAISAL UNIVERSITY Intellectual Property Advisory Committee and deliver quarterly performance and accountability reports to the Committee.
- i) Educate the ALFAISAL UNIVERSITY Community, government and private entities in Saudi Arabia about intellectual asset management and innovation.
- j) Assure that all technology transfers and exchanges of information comply with import and export control laws.
- k) Perform other duties as may be assigned by the University and the ORI and the University.

Intellectual Property Advisory Committee & Approvals

The ALFAISAL UNIVERSITY assists and advises the TTO and ORI with managing all aspects of Intellectual Property at ALFAISAL UNIVERSITY in accordance with its Charter, the university establishes a temporary or permanent advisory committee and determines its powers and term of membership.

All Intellectual Property terms and conditions in any University agreement and under the responsibility of the TTO are approved by the Director after review by a lawyer in the university if the IP terms in the agreement are materially different from the principles laid down in this Policy or those approved by the ORI or the TTO. An exception must be obtained from the advisory committee, except as to legal form, the various material transfers, non-disclosure agreements and non-monetary assignments, Intellectual Property registration and management documents, and all license, option, and related technology transfer agreements in accordance with the Schedule of Delegations and Authorities that need approval from the university.

Examples of Products & Processes Facilitated by the TTO

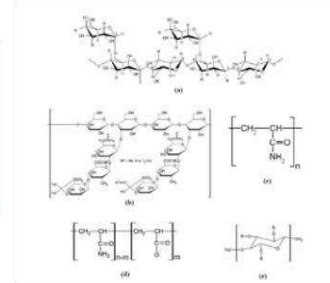
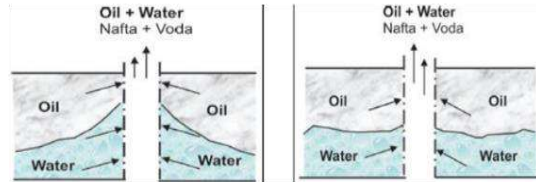
Two successful examples are shown in Figure 5. In collaboration with Saudi Aramco the top figure shows the development of a high temperature high pressure water shutoff chemical system based on nanocomposites. The aim here was to increase the amount of oil being recovered. This fell under the research theme “Advanced Manufacturing & High Value Materials”. The second example was from the “Health & Pharmaceuticals” research theme and has been commercialized by a Saudi company called SAMCO. Based on Alfaisal faculty IP, the company helped to develop and manufacture molecular biology kits & reagents for diagnostics & research. This was spun out into the Samco company.

2.3.2 Increase in Number of Patents

In 2024 the cumulative total patents granted to Alfaisal faculty reached 52 and the cumulative total patent applications was 48 (Table 7). Data was taken from *Justia Patent Search* (<https://patents.justia.com>) using both Alfaisal University as the affiliation and individual faculty search. Note that 18 granted patents out of 52 with Alfaisal faculty only had a company affiliation and not a university



Project: High Temperature High Pressure Water Shutoff Chemical System Based on Nanocomposite



	Human Capital	Funding & Incentives	Research Centers & Services	Business Incorporation
Alfaisal Support	✓ Faculty, masters & post-grad students provided to project team	✓ In-kind financial support equaling ~30% of total project cost	✓ Provided research labs where activities were conducted	✗ Not provided – done by Aramco team



Company Incubation: Developing and manufacturing molecular biology kits and reagents for diagnostics and research – spun-out into Samco company



	Human Capital	Funding & Incentives	Research Centers & Services	Business Incorporation
	✓ Faculty, masters & post-grad students provided to project team	✓ In-kind financial support equaling >40% of total project cost	✓ Provided research labs where activities were conducted	✓ Obtained patent and incubated company through TTO

Figure 5. TOP: Development of a high temperature high pressure water shutoff chemical system based on nanocomposites. BOTTOM: Development and manufacture of molecular biology kits & reagents for diagnostics & research

affiliation. Similarly, 19 out of 48 applications only had a company affiliation. Nevertheless, the large number of applications and granted patents by Alfaisal faculty are key positive indicators of IP production. In the long term with the assistance of the *Technology Transfer Office (TTO)* this will aid in the economic development of the country thru new products & processes.

Table 7. Patents Granted & Applications by Alfaisal Faculty

Year	≤ 2018	2019	2020	2021	2022	2023	2024 _{est}
Patents Granted	6	4	7	6	8	12	9
Cum Total Pat Granted	6	10	17	23	31	43	52
Patent Applications	8	5	2	11	6	7	9
Cum Total Applications	8	13	15	26	32	39	48

2.4 Dimensions Startup Studios for Innovation & Design Thinking

Alfaisal University's Startup Studios for Innovation & Design Thinking, Dimensions, is comprised of state-of-the-art specialized services and programs that offer start-ups and early-stage businesses with the support and resources that young companies find difficult to access (<https://dimensions.alfaisal.edu/>). Assistance is provided with a complete ecosystem with full access to networks, investors and mentors, as well as co-working spaces alongside other businesses and experienced professionals.

Startup Studios provide specialized services and programs to help entrepreneurs turn their ideas into business success stories. The Studios give entrepreneurs access to dedicated resources like strategic partnerships and advice, market research and data analysis, and entry to specialized facilities and spaces. Entrepreneurs can also benefit from pitch and presentation preparation, regulatory guidance and compliance, access to potential customers through pilot programs and Demo Days, as well as technical advice and assistance. Startup Studios aim to provide entrepreneurs with the expertise, connections, and skills to take their ideas to the next level.

The Dimensions ecosystem is comprised of three state-of-the-art centers, the *INVENT Center for Innovation and Design Thinking*, *SparkTank Incubation Startup Studios*, and *IMAGINARIUM Toys and Games Discovery Studios* (Figure 6).

Services offered:

- *Co-Working Space*: A Space where students can make their dreams come true.
- *Funding*: Dimensions funds students to start developing their business.
- *Mentorship*: An expert answering questions.
- *Networking*: At Dimensions, networking is a major player to push start-ups.
- *Training*: Dimensions provides students with beneficial training.

Dimensions Startup Studios for Innovation & Design Thinking aims to create a vibrant innovation and technology ecosystem to deliver social and economic benefits to the Kingdom and its region; and connect stakeholders, facilitate knowledge transfer, and nurture talents to accelerate technological innovation and commercialization. To achieve this, the Startup Studio provides services to assist technology start-ups in their



Figure 6. The Dimensions ecosystem is comprised of state-of-the-art centers. For example, **TOP** SparkTank Incubation Startup Studios, and **BOTTOM** IMAGINARIUM Toys and Games Discovery Studios

vulnerable inception stages, enabling them to grow and flourish. Advancing towards Vision 2030 with tangible goals, this business Startup Studios for Innovation and Design Thinking, offer entrepreneurs the capacity to take a multifaceted approach to crafting the future. Here, innovative concepts become investments, products, services and companies, spearheading a lively, technological setting to generate positive social and economic gains. What is more, with help, entrepreneurs have access to capital and the opportunity to team up with scholars.

Our Mission: Fuel startup ingenuity with design thinking and technology to forge transformative solutions.

Our Vision: Shape a future where creativity and technology drive meaningful everyday enhancements.

Main objectives include:

- Empower entrepreneurs in key sectors for innovative growth.
- Cultivate innovation and collaboration in business creation.
- Drive economic growth and societal impact through partnerships.
- Equip healthcare entrepreneurs for societal innovations.
- Enhance learning and talent in Industry 5.0 for future advancements.
- Develop a global innovation ecosystem for sustainable progress.

2.4.1 Experimental & Discovery Studios for Creative Thinking & Entrepreneurship

Three experimental and discovery studios encourage creative thinking and embody the entrepreneurial spirit. Together, these three Studios offer a complete suite of resources to help students turn their ideas into tangible products and services. This forms part of the larger umbrella of Dimensions Startup Studios, which provides a suite of services to support aspiring entrepreneurs and enable their dreams to come true. The achievements and spin-offs of the *Dimensions Startup Studios* for 2023-2024 are listed in Tables 8 and 9.

Table 8. Achievements of Dimensions Startup Studios during 2023-2024

- *SparkTank* had the first *INNOVATHON 2024* Competition and is currently hosting seven startups from university.
- *INVENT* had the first *Solarthon 2024 Event* in collaboration with KAUST and KACST.
- *INVENT* had the first of its kind series of events entitled *AI-Powered Creativity Series*.
- *Dimensions* was part of the design for a *Culinary Innovation & Development (CIDC)* project under the Culinary Arts Commission (CAC).
- *Dimensions* officially recognized as an incubator by *Monshaat* (the Small & Medium Enterprises General Authority).
- Selected as one of only three universities in Kingdom to host the KACST-NDTP Ventures Program (KVP2.0).

Table 9. University Spin-offs from Dimensions

- Since 2022, *Dimensions* incubated 14 startups. Currently the university is incubating seven startups.
- The pre-*Dimensions* period, prior to 2021, only one spin-off was produced.
- The batch from 2024-2028 *SparkTank* is currently incubating seven companies, one of which is registering and will soon be spun off.

Starting with concept creation, the Startup Studios for Innovation and Design Thinking aid with the idea validation process up until the actual launch of the product or service. Mentorship and resources focus heavily on the development and growth of the business, including the formulation of business plans, fundraising, marketing, legal advice, and financial planning. With the launch of the business and getting it off the ground, the Startup Studios for Innovation and Design Thinking helps with finding VCs, rent-free offices and labs, and access to a vast network of potential customers and partners. Regular events, talks and workshops are held to share knowledge, experiences, and best practices in the field of innovation and entrepreneurship.

2.4.1.1 *INVENT Studios for Innovation & Design Thinking*

INVENT's mission is to equip our community with the skills needed to become leaders in innovation, design thinking, and technology. Its Vision is to create a vibrant, global community of innovators, where individuals from all walks of life can come together and share their unique perspectives and expertise.

INVENT studios aim to help students and professionals who want to be creative problem solvers by reducing the risk of failing to solve challenges and enabling the innate human creativity and imagination to invent solutions that advance careers and create new jobs, services, and

inventions. The studios allow for high-calibre design thinking. Innovation experts train students and professionals to create new and innovative ideas and solve problems.

Two leading in-house or on-demand services are offered to achieve its mission and commit to its core values. There are course-based and program-based Design Thinking Certificates (IDEATE and CREATE Studios). The second consists of consultation services for all government and private sectors (GENERATE Studio).

2.4.1.2 *SparkTank Incubation Startup Studios*

The *SparkTank* goal is to provide a supportive environment for entrepreneurs to launch and grow their businesses with access to professional mentors, training programs, and resources. From early concept development to full scale business implementation, the Spark Tank team is committed to ensuring every entrepreneur has the tools they need to succeed. Custom-tailored support programs are offered to help each business achieve its goals and reach its full potential. In addition to providing business guidance, financial, technological, and emotional support are also provided for entrepreneurs throughout their journey. Services Offered include:

- Management training
- Advisory services
- Access to capital sources (loans, grants, network of potential investors)
- Assistance with core business operations (accounting, market research, marketing, legal compliance)
- Access to office space and other operating resources (necessary software, hardware)
- Access to Dimensions full innovation ecosystem.
- Access to the Advanced Manufacturing Center, specialized labs in major fields of study: medical, engineering, business, science, law and international relations, among many others.

2.4.1.3 *IMAGINARIUM Toys and Games Discovery Studios*

This Studio stands at the forefront of toy and game innovation, merging play with purpose for a transformative user experience. Its mission is to cultivate creativity and foster innovation in toy and game design, offering a platform where visionaries can bring their playful inventions to life. At IMAGINARIUM, play is a serious business that shapes minds, builds communities, and transcends boundaries. Services offered include:

- *Creative design workshops*: These sessions equip participants with the skills to ideate, prototype, and refine innovative toys and games.
- *Market readiness preparation*: Guidance on branding, marketing, and the regulatory aspects of toy and game development to ensure successful market entry.
- *Networking opportunities*: Connections to industry leaders, potential collaborators, and markets to facilitate the growth and visibility of new products.
- *Access to testing labs*: Facilities to test and perfect physical-digital play products in real-world scenarios.
- *Linkages within the Dimensions innovation ecosystem*: Collaborations with Spark Tank Incubation Startup Studios and INVENT Studios for holistic product development and innovation support

2.5 Analysis of Research Output & Performance Indicators

2.5.1 Research Output Analysis

Research output in 2024 reached 950 publications and 67,500 citations as measured by Scopus. The cumulative total number of publications and citations was 5,797 and 280,000 respectively (Table 10). In 2024 the h index reached 140 with an estimated 2.9 publication per full time faculty per year.

Table 10. Research Output (Alfaisal University affiliation from Scopus)

Year	2020	2021	2022	2023	2024 _{est}
Publ/Yr	465	583	700	820	950
Cum Tot Publ	2,408	3,327	4,027	4,847	5,797
Cit/ Yr	22,543	30,000	40,000	52,500	67,500
Cum Total Cit	76,255	120,000	160,000	212,500	280,000
h index	90	113	120	130	140
Pub/FTF/Y _(est)	2.5	2.6	2.7	2.8	2.9
Tot Cit/Tot Publ	32	36	40	44	48

2.5.2 International Performance Indicators

The University continued to do well in the Times Higher Education (THE) Young University Rankings 2023 placing 51st globally, and 1st in Saudi Arabia as well as 36th in “The World’s Best Small Universities” (2024). The U.S. News & World Report Best Global Universities Subject Ranking 2024-2025 located Alfaisal Clinical Medicine #373 globally, and 1st in globally in normalized citation impact (Table 11). Alfaisal University appeared in the prestigious *Nature Index* which showed that the institution had excellent national & international collaborations.

Table 11. International Performance Indicators 2023-2024

<p>Times Higher Education (THE) Young University Rankings 2023 placed Alfaisal 51st globally, 1st in Saudi Arabia.</p> <p>THE ranked Alfaisal 36th in “<i>The World’s Best Small Universities</i>” (2024)</p>	
<p>U.S. News & World Report Best Global Universities Subject Ranking 2024-2025 placed Alfaisal Clinical Medicine #373 globally, & 1st internationally in normalized citation impact, & 17th globally in highly cited papers that are among the top 1% most cited.</p>	
<p>Alfaisal appeared in Nature Index which showed that institution had excellent research output in Health & Biological Sciences as well as very strong national & international collaborations.</p>	
<p>Academic Ranking of World Universities (ARWU), also know as Shanghai Ranking reported three subjects for Alfaisal: Public Health 201-300 (2024), Clinical Medicine 201-300 (2023), & Human Biological Sciences 301-400 (2023)</p>	
	

2.6 Achievements by Faculty & Students

2.6.1 Faculty Awards for Research Excellence & Patent Awards

Faculty Awards for Research Excellence were established to recognize and reward those individuals whose creative endeavors were particularly successful and were recognized locally, and nationally. For 2023 and 2024 the winners were (Table 12; Figure 7):

Table 12. Faculty Awards for Research Excellence in 2023 and 2024

2023
<ul style="list-style-type: none">• Welf H. Weiger, Assistant Professor Marketing, College of Business (shared)• Mario Ferrer, Assist Prof Operations Management, College of Bus (shared)• Mohammad Khanfar, Prof Drug Design & Medicinal Chem, College of Pharm• Ahmed Yaqinuddin, Prof Anatomy & Cell Biology, College of Medicine (shared)• Raja Chinnappan, Lecturer Biochem & Molecular Med, College Med (shared)• Mohammed Zourob, Prof Chemistry, College Sci & General Studies (shared)• Edreese Alsharaeh, Prof Chemistry, College of Sci & General Studies (shared)• Ramazan Demirboga, Prof of Architectural Engineering, College of Engineering
2024
<ul style="list-style-type: none">• Omar Ziad Ameer, Assistant Professor of Pharmacology, College of Pharmacy• Noara AlHusseini, Assistant Prof Public Health, College of Medicine (shared)• Baraa Alghalyini, Assist Prof of Family Medicine, College of Medicine (shared)• Qasem Ramadan, Res Assist Prof Chemistry, College of Sc & General Studies• Lotfi Tadj, Professor of Industrial Engineering, College of Engineering (shared)• Mutasem Shehadeh, Associate Professor of Mechanical Engineering (shared)• Waleed Alsabhan, Assistant Professor of Software Engineering (shared)



Figure 7. Winners of Faculty Awards for Research Excellence and Patent Awards receiving recognition from Senior University Administration. Top: 2023, Bottom 2024

Patent Awards were established to recognize faculty, staff & students who engaged in creation of intellectual property (IP) that could help in the economic development of the country. The recipients in 2023 and 2024 were (Table 13):

Table 13. Winners of Patent Awards in 2023 and 2024

2023
<ul style="list-style-type: none"> • Edreese Alsharaeh (5 patents granted in 2022 with Saudi Aramco)
2024
<ul style="list-style-type: none"> • Edreese Alsharaeh (2 patents granted) • Mohan R. Krishnan (2 patents granted) • Souraya Goumri-Said (2 patents granted)

2.6.2 Faculty Promotions

The following faculty were promoted:

In 2023: Ahmed Yaqinuddin, Assoc. to Full Prof. of Anatomy & Cell Biol.
Peter Cahusac, Assoc. to Full Professor of Pharm. & Biostatistics

In 2024: Souraya Goumri-Said, Associate to Full Professor of Physics
Noara AlHusseini, Assist. to Assoc. Professor of Public Health
Omar Al-Adhami, Assist. to Assoc. Professor of Pharmacology
Ibrahim Salman Assist. to Assoc. Professor of Pharmacology

2.6.3 Stanford University’s “World’s Top 2% Scientists” List

In September 2024, Stanford University released its analysis of citation count based on the Scopus the database. The data is built on analysis provided by Prof. John P. A. Ioannidis and his team. Since its initial release, the list has become a basis of celebration for universities. Two lists are generated annually, one for career impact, and another for annual impact. (Figure 8). Congratulations to our professors and we wish them continuous success.



Figure 8. Twelve professors affiliated with Alfaisal University were named in Stanford’s ‘World’s Top 2% Scientists’ list 2023 based on citation count.

2.6.4 Arab Environmental Excellence Award 2024 for Environmental Science

Souraya Goumri Said Professor of Physics at the College of Science and General Studies was awarded the **Arab Environmental Excellence Award 2024 for Environmental Scientific Innovation** in recognition of her impactful research project. Dr. Souraya's research centred on developing new materials based on nanostructures for advanced water purification, contributing to essential environmental solutions for the region (Figure 9 RHS). Likewise, Edreese Alsharaeh Professor of Chemistry and Director of the Nanotechnology Lab was also awarded the **Arab Environmental Excellence Award 2024 for Environmental Scientific Innovation** in recognition of his impactful research project. Dr. Edreese's work addressed the challenge of water retention in arid environments, focusing on innovative solutions for preserving rainwater to reduce irrigation needs in desert climates (Figure 9 LHS).



Figure 9. Arab Environmental Excellence Award 2024 for Environmental Scientific Innovation. *LHS:* Edreese Alsharaeh Professor of Chemistry and Director of the Nanotechnology Lab. *RHS:* Souraya Goumri Said Professor of Physics

2.6.5 Researcher Ranked Among Top Global Biosensors Scientists by Scholar GPS

Mohammed Zourob, Professor of Chemistry at Alfaisal University, was ranked as the 15th top scholar in Biosensors worldwide in Highly Ranked Scholars by ScholarGPS (<https://scholargps.com/scholars/83886573435738/mohammed-zourob>) (Figure 10). Highly ranked scholars comprise the top 0.05% Scholars for exceptional productivity and impact based on publications and citation metrics. They are identified by ScholarGPS system, which classifies over 200 million publications into 350,000 specialties. Professor Zourob's groundbreaking work in biosensors has significantly propelled the commitment to advancing global healthcare. Alfaisal University is proud of his exemplary contributions!



Figure 10. Mohammed Zourob, Professor of Chemistry at Alfaisal University, was ranked as the 15th top scholar in Biosensors worldwide in *Highly Ranked Scholars* by *ScholarGPS*

2.6.6 Chemist Wins Silver Medal at International Exhibition of Inventions

Edreese Alsharaeh, Professor of Chemistry at the College of Science & General Studies had the honour of representing the University and receiving the silver medal for his team's patent "*Polymer-sand nanocomposite for water shutoff*" (Figure 11). As part of a contract with Saudi Aramco, the project goal is to enhance oil recovery. The University joined the exhibition as part of the Saudi Universities participation with +25 local universities exhibition in this international platform.



Figure 11. Alfaisal Chemist, Edreese Alshareah, wins Silver Medal at International Exhibition of Inventions-Geneva 2024

2.6.7 Alfaisal Eco Team at Shell Eco Marathon 2024

Shell Eco-marathon- Asia-Pacific and the Middle East 2024 was held from 2-6 July 2024 at the Pertamina Mandalika International Street Circuit, in Lombok, Indonesia. Alfaisal University was proud to announce that a dedicated team of 10 brilliant students from the College of Engineering successfully showcased their self-designed energy-efficient hydrogen fuel cell vehicle at this prestigious event, representing the University and the Kingdom (Figure 12).

Over the past two years, the team has been working tirelessly to perfect their energy-efficient vehicle, putting their design, technology and engineering skills to the ultimate test under the guidance of their mentor Dr. Abdel Naser Daoud

Director of Alfaisal Automotive Center, and Automotive Center Supervisor Mr Asem Al Aqeel. The teams' hard work and ingenuity paid off in Indonesia, where their Hydrogen fueled prototype successfully passed all rounds of rigorous technical inspection at the competition and completed several rounds on the track.



Figure 12. Engineering students taking part in the *Shell Eco-marathon- Asia-Pacific and the Middle East 2024* that was held from 2-6 July 2024 at the Pertamina Mandalika International Street Circuit, in Lombok, Indonesia. Students successfully showcased their self-designed energy-efficient hydrogen fuel cell vehicle at this prestigious event, representing the University and the Kingdom

Shell Eco-marathon is one of the world's leading energy-efficiency engineering programs for students. It aims to push the boundaries of what is technically possible and inspire young people to become leading scientists and engineers of future energy solutions. The University takes immense pride in our student teams' continuous involvement with the Shell Eco-Marathon since 2015. This is a result of the countless hours put into design, research, fine-tuning and testing by our student teams and their mentors, incorporating cutting-edge technology and advanced materials to maximize the energy efficiency of their vehicles. Their work reflects our commitment to empower our students to use the skills they acquire at university to address real-world challenges, embodying the spirit of sustainability and innovation that Alfaisal University celebrates.

We extend our heartfelt congratulations to the Alfaisal Eco Team of Mohanad Shamsan and Anas Yaseen (Team Managers), Doha Melliti and Janaden Solaiman (Drivers), Zeina Badran, Abeer Khan, Albaraa Alsalti, Sulaiman Darwish, Sarah Darwish, Riyadh Alsahil and Ghait Aljabra for representing our university with such distinction. Their achievement not only brings us great pride but also sets a shining example for future generations of engineers aspiring to advance technologies and drive innovation for a sustainable future.

2.6.8 Annual Research Day Student Poster Competition

One of Alfaisal University's priorities is competence building by helping to develop a student's intellectual abilities through involvement in focused research that address strategic problems of concern to the country and the region. The "Research Day" was held annually to strengthen the vision that research is indeed one of the missions of Alfaisal University. Students presented their summer research activities/ proposals/ future programs (<https://research.alfaisal.edu/poster-comp>). All posters had to be physically posted in the Venue. Any undergraduate or graduate student currently enrolled at a university was eligible to participate. Students could submit a research paper in one of the following categories: Business, Management & Law; Engineering & Technology; Medicine, Pharmacy & Health Science; and Science & Humanities

The annual competition has been a great success. In 2010, the first year of the competition, there were 22 posters taking part. By 2024 this number had grown to 403 (Table 14) (Figure 13). In 2021 due to the COVID 19 Pandemic, the venue was modified. Rather than having the competition in one large room, it was moved to the 1st floor hallways with the posters separated by at least 15 feet. That year no visitors were allowed, only student participants & faculty judges. The posters were left up for one month to allow other students, faculty, and staff to view them.

Table 14. Increase in number of posters in competition from 2010 to 2022

Competition #	Year	Number of Posters
1 st	2010	22
2 nd	2011	28
3 rd	2012	30
4 th	2013	42
5 th	2014	54
6 th	2015	81
7 th	2016	111
8 th	2017	140
9 th	2018	141
10 th	2019	157
11 th	2020	204
12 th	2021	178
13 th	2022	212
14 th	2023	304
15 th	2024	403



Figure 13. On 7 March 2024, H. E. Mohammed Al-Suwaiyel, former President of KASCT and Minister of Telecommunications & Information Technology, joined the leadership of Alfaisal University on a tour of the 15th Annual Research Day Student Posters. He had the opportunity to witness students showcasing their posters, each highlighting their respective majors and areas of study.

2.7 Institutional Review Board (IRB)

In compliance with the provisions of the Saudi Law of Ethics of Research on Living Creatures and regulations, and under guidelines of the National Committee of Bioethics (NCBE), Alfaisal University founded and registered an Institutional Review Board (IRB) under the number (HA-01-R-058). The Board consists of 13 members: a chairman, vice chairman, and 11 members in various specialties, including Medicine, Business, Engineering, Science, Pharmacy, Biostatistics, Epidemiology, and Public Health, and a community representative. In addition, the IRB has a designated coordinator.

The IRB is regulated by the NCBE with the mandate to review human subject research studies that take place within Alfaisal University. The purpose of review is to determine if the proposed research meets certain established regulatory, and ethical criteria of the Law of Ethics of Research on Living Creatures. and its regulations, and in compliance with the guidelines of the NCBE. The IRB licenses and monitors the conduct of human subject research at Alfaisal University.

Alfaisal University IRB Mission:

- To protect the rights and welfare of human research participants
- To facilitate excellence in human research by providing timely and high-quality review of human research
- To provide professional support to the Alfaisal research community

The application system is online <https://irb.alfaisal.edu/apply-here/> (Figure 14).

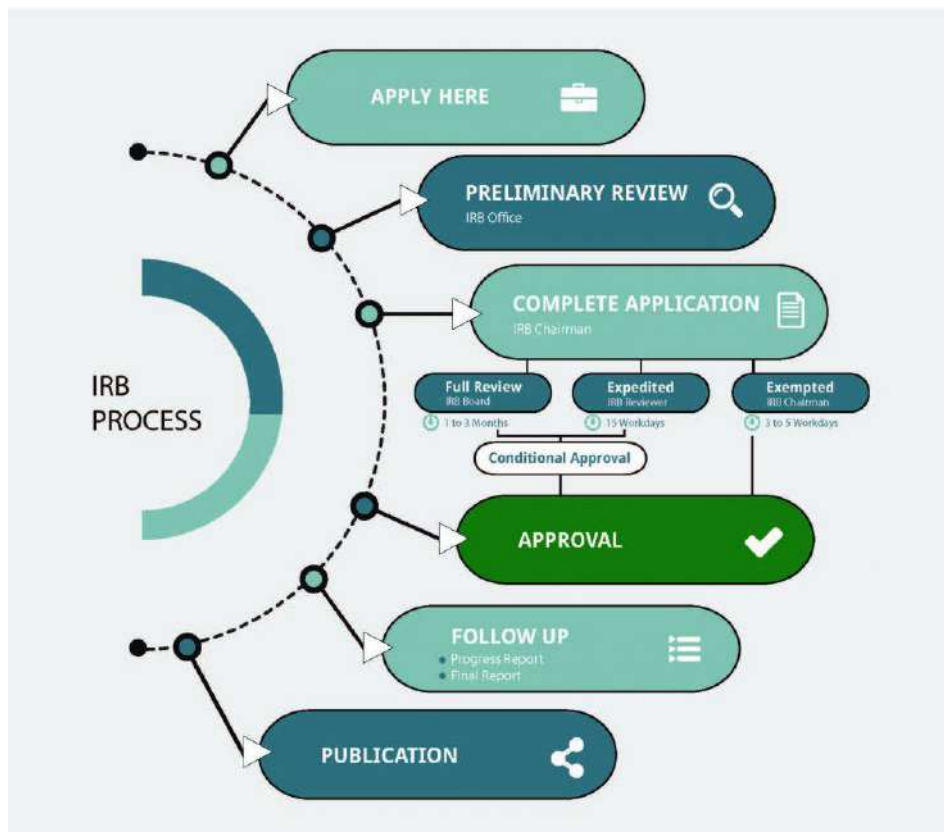


Figure 14. IRB online submission process

2.8 Laboratories & Research Infrastructure

The university has a total of 118 laboratories, workshops and studios to support research and teaching (data from Dec 2023). Many laboratories have a dual function of both research and teaching (*Alfaisal Core Laboratories & Research Infrastructure*). Oversight of laboratory usage is provided by the *Laboratory Supervisory Committee* which is chaired by the VP External Relations, and which has members from the colleges as well as Facilities Department (see section 1.4.8 *Laboratory Supervisory Committee* for more details). In addition to its own research laboratories, the University also utilizes facilities at affiliate institutions and organizations such as KFSHRC, KACST and KAUST. These facilities are designated for use by both the University and respective party's faculty. Each facility has its own policies and criteria. The Office of Research and Innovation and College Deans are responsible for facilitating requests by Alfaisal faculty for the use of facilities and laboratories at collaborating institutions, and for making periodic announcements pertaining to availability.

Research, teaching, and graduate education are major priorities of Alfaisal University that often require substantial infrastructure, including laboratory space. The space requirements for research activities can vary depending on the academic disciplines. Consequently, a university policy is required for colleges and departments to manage laboratory research and teaching space to make informed decisions regarding research space creation, allocation, renovation, or discontinuation. However, irrespective of the diverse needs of each academic discipline, some overarching principles regarding assignment of research space must be in place to help colleges and department to work under a central administration and to efficiently use the allocated laboratory space. Accordingly, the following guidelines were developed initially by an ad-hoc Alfaisal University Laboratory Policy and Structure Committee and then revised by the Laboratory Supervisory Committee which was established in 2023 to plan and assign research and teaching space and align these decisions with the campus wide regulatory practices. College and departments of Alfaisal University should refer to these guidelines when allocating or assigning both sponsored and non-sponsored research space.

The mission of Core Laboratories & Research Infrastructure is to provide research support, training, collaboration and services with state-of-the-art facilities and technical expertise, to enhance the economic development of the country. The Core Labs and Research Infrastructure supports the University's vision by to be an internationally recognized user-facility that delivers scientific innovations and solutions for the community & industry.

3 Graduate Studies

3.1 Graduate School & Changes in Ministry of Education Rules

The university has a stand-alone Graduate School with a Director for Graduate Studies and reporting the Vice President for Graduate Studies, Research & Innovation (<https://gradschool.alfaisal.edu/>).

The Ministry of Education (MOE) has made changes in the rules and regulations related to private universities. The latter have been empowered to approve and administer their own graduate programs including doctoral (i.e., PhD degrees). While this has increased the freedom and flexibility of universities such as Alfaisal it has also increased an institution’s responsibilities.

3.2 Accreditation of Graduate Programs

All master’s programs must be accredited within the next two years otherwise they may be put on hold by the MOE. Before a PhD program can start the relevant master’s program must be accredited. Two new committees (i.e., *Permanent Committee for Graduate Studies*; and *Institutional Quality Assurance & Accreditation Committee*) were established to provide general oversight & quality assurance as per the new rules & regulations. See also section 1.3. *Establishment of New Committees, Councils, Boards & Offices*. In a major achievement the *Biomedical Sciences Master’s* program with its 12 track was successfully accredited by the *Royal Society of Biology* in the UK. This was a critical stage since the University started its first *PhD program in Biomedical Sciences* in 2024. The status of graduate programs undergoing accreditation are listed in Table 15.

Table 15. Accreditation of Graduate Programs at Alfaisal University

Master Program	Accreditation Body	Status
Applied Health Research (MAR)	Accreditation Agency for Health and Social Sciences (AHPGS) from Germany	Fully accredited in 2024
Biomedical Sciences (MBS) & its tracks: <ul style="list-style-type: none"> • <i>Analytical Biochemistry</i> • <i>Biotechnology</i> • <i>Cancer Nanoscience</i> • <i>Clinical Anatomy</i> • <i>Clinical Embryology & Reproductive Biology</i> • <i>Infection Control</i> • <i>Laboratory Quality Management</i> • <i>Molecular & Cell Biology</i> • <i>Nanomedicine & Nanodiagnostics</i> • <i>Thrombosis & Hemostasis</i> • <i>Transfusion Medicine & Stem Cells</i> 	Royal Society of Biology (RSB) in UK	Fully accredited in 2024
Business Administration (MBA)	Association to Advance Collegiate Schools of Business (AACSB)	In progress, expected 2025
Clinical Psychology (MCP)	Accreditation Agency for Health and Social Sciences (AHPGS) from Germany	Fully accredited in 2024
Clinical Speech Language Pathology (MSP)	AHPGS	Fully accredited in 2024
Engineering & Systems Management (MEM)	Accreditation Board for Engineering & Technology ABET	In progress, Expected 2025-2026

Genetic Counselling (MGC)	AHPGS	Fully accredited in 2024
Health Research Management (MRM)	AHPGS	Fully accredited in 2024
Public Health (MPH)	AHPGS	
Radiological & Imaging Sciences (MRS)	AHPGS	

3.3 Graduate Programs

3.3.1 New Admissions Enrolment, Graduation Rates & Achievements

In the past two academic years (i.e., 2022-2023 and 2023-2024) the intake of new students has held roughly constant at 266 and 254 respectively. (Table 16). The number of graduated students has dropped from 145 to 100 during the same periods respectively. Graduate School achievements are listed in Table 17.

Table 16. Number of newly enrolled & graduated students

Graduate Programs	2022-2023		2023-2024	
	Enrolled	Graduated	Enrolled	Graduated
Business	114	84	119	73
Medicine	136	54	113	14
Engineering	10	4	21	13
Science	6	3	1	0
Cumulative Totals	266	145	254	100

Table 17. Graduate School Achievements

- *Biomedical Sciences master's programs* with its 12 tracks successfully accredited by *Royal Society of Biology (RSB)* in UK
- First PhD program in *Biomedical Sciences* started at Alfaisal
- *Permanent Committee* established to oversee all aspects of graduate studies, as per MOE requirements.
- International accreditation of seven graduate programs (i.e., *MCP, MSP, MGC, MPH, MRS, MAR, MRM*) by *German Accreditation Agency for Health and Social Sciences (AHPGS)*

3.3.2 PhD Program in Biomedical Sciences

The program is a four-year doctoral (PhD) program in the Biomedical Sciences at Alfaisal University in collaboration the King Faisal Specialist Hospital and Research Center (KFSHRC), one of the co-founders of the University. Research projects would be conducted at Alfaisal University, KAUST, KACST, as well as at KFSHRC. <https://gradschool.alfaisal.edu/phd>.

Doctoral students in Biomedical Sciences register for 15 credits of core and electives, 6 credits of lab rotations and 36 credits for the Dissertation, giving a total of 57 credits. Electives are chosen by students in consultation with their supervisors. Alfaisal works on the semester system with fall and winter (Spring) semesters. The recommended course plan over four years is outlined in **Table 18**.

Table 18. Credit Hours Required for a PhD Biomedical Science

Type of Courses Required	Credit Hours
Core	3
Lab rotations	6
Elective	12
Dissertation	36
TOTAL	57

3.3.3 Master's Programs

There are currently 25 two-year master's programs and tracks in the university. These consist of both course work masters such as MBA & its tracks and thesis masters such as MBS (Table 19).

Table 19. Masters' Programs & Tracks

Accounting & Taxation (MBA)
Digital Marketing (MBA)
Finance (MBA)
General (MBA)
Healthcare Management (MBA)
Human Capital Management (MBA)
Clinical Psychology (MCP)
Clinical Speech Language Pathology (MSP)
Engineering and Systems Management (MEM)
Genetic Counselling (MGC)
Nanoscience and Nanotechnology (MNT)
Biostatistics and Epidemiology (MPH)
Health Policy & Management (MPH)
Public Health (MPH)
Radiological and Imaging Sciences (MRIS)
Analytical Biochemistry (MBS)
Biotechnology (MBS)
Clinical Anatomy (MBS)
Clinical Embryology and Reproductive Biology (MBS)
Infection Control (MBS)
Laboratory Quality Management (MBS-LQM)
Molecular and Cell Biology (MBS)
Transfusion Medicine and Stem Cell (MBS TMS)
Health Research Management (MRM)
Applied Health Research (MHR)

3.3.4 Higher Diplomas

Students may now obtain a Higher Diploma for example either as an exit from a thesis master's program or as a one year stand alone program. As an example of the latter, there is a one year 18 credit *Higher Diploma in Engineering & Systems Management* at Alfaisal University which helps to equip early to mid-career technical professionals with the necessary foundation in the areas of analysis, modeling, improvement and design of complex data-intensive systems including those found in the manufacturing and supply chains, software and service industries, with special emphasis on advanced

career opportunities in the Kingdom of Saudi Arabia. This program is not an MBA; it is a technical degree on business intelligence, Intelligent Industrial Systems and Industry 4.0 related fields. "Systems thinking" is an important part of the degree, whether applied to the improvement of existing systems and operations or the creation of new products and services.

4 Business Centre & Consultancies

The *Alfaisal Centre for Research and Consultancy Studies* (ACRCS) vision is to be in the forefront of innovation, education, and free enterprise at the national and regional level by providing applied research solutions and consultations by delivering state-of-the-art applied research solutions, educational training and consultation services that contribute to sustainable economic and social development by exploiting the University's human resources expertise and through building strategic partnerships. The ACRCS has six main services: research & consultancy, labs, training, advanced manufacturing, IP licensing, and the accelerator of which are organized around four initiatives. These include sustainability, health innovation, advanced manufacturing, and human capital.

In 2023 and 2024, a total of 10.2 and 2 million SAR was brought into the university (Table 20). This was based on 3-year averages since project normally lasts 3 years. For details on specific projects and consulting service by category, types of clients served, and services provided, see Tables 21 to 23.

Table 20 Business Center

Year	2020	2021	2022	2023	2024
TOTAL (3 yr avg) (SAR)	11,600,000	5,100,000	5,700,000	10,200,000	23,700,000

Table 21. Business Center Sources of Funding in 2023 & 2024

Project Title	Source of Financial Support	Year Awarded
Mystery Visitor Program.	Ministry of Health	2023
Design & Deliver a Training Program	Integrated Telecom Company (SALAM)	2023
Study Next Generation Family Business Leaders in Saudi Arabia	Pearl Initiative	2023
Design & building the strategy, operations, & concept at King Faisal Specialist Hospital & Research Center	King Faisal Specialist Hospital & Research Center	2023
Agreement between Mohammed Al-Mana College for Medical Sciences & Alfaisal University	Mohammed Al-Mana College for Medical Sciences	2024
Providing Consultancy Services to Municipality of Tabouk	Municipality of Tabouk	2024
Robojoint Project	Saudi Electricity Company	2024
Executive of the World Economic Forum Survey	National Competitiveness Center	2024
Preparation Program	Saudi Electronic University	

Table 22. Types of clients served, & services provided

Client Type	Services Provided
Government Agencies	Project Management, Change Management, Market Research
Private Businesses	Strategy Development, Business Analysis, Market Research, Product Development

Table 23. Consulting services by category.

Category
Strategy Development
Business Analysis
Training
Advisory
Other

4.2 Research & Consultation

Currently, in the Center there are four (4) projects in collaboration with governmental agencies comprised of on-going and new projects. Under Consultancy, there are currently 17 projects in conjunction with governmental agencies that are new, on-going, and submitted projects.

4.2.1 Alfaisal Corporate Governance Center

The *Corporate Governance Center (CGC)* at the Alfaisal Center for Research and Consultancy was established in 2016 to monitor and promote good governance practices in Saudi Arabia. A team from Alfaisal University developed the Corporate Governance Index (CGI) in collaboration with consultants and with partial financial support from the former Saudi Arabia General Investment Authority (SAGIA), currently the Ministry of Investment.

CGI is an evidence-based index to measure the performance of companies across multiple dimensions of corporate governance that affect their competitiveness. The index helps companies gauge their corporate governance performance and identify areas of potential improvement. This index is the only one in the GCC region and is making it easier for companies to measure their progress on corporate governance. It is based solely on good corporate governance principles set by the CMA, SAMA, and the OECD. The index consists of four key areas of measurement, including Board of Directors, Shareholder Rights, Stakeholder Relations, and Public Disclosure and Transparency. Furthermore, CGC also hosts conferences, forums and webinars related to important global topics of interest. In 2021, the CGC offered conferences on “Investing in ESG” and “Effective Corporate Governance & the Independence of the Board Audit Committee.”

The internal policies, procedures, and systems a company uses to manage its operations—is vital to creating a successful, competitive business. Corporate governance has become increasingly important in recent years, as companies look to optimize their business performance, maintain a high degree of financial transparency, and ensure that their stakeholders’ interests are aligned, especially in the Kingdom of Saudi Arabia.

4.2.2 Alfaisal Competitiveness Consultancy Center

Saudi Arabia, a major economic player in the Middle East region, has an active role in engaging with the World Economic Forum (WEF) over the past decade. The Kingdom has been an active participant in key WEF initiatives, including the Global Competitiveness Index (GCI) and the Global Risk Report.

Since 2013, *the Competitiveness Center* has been providing consulting services related to collecting and analysing Saudi market performance data from multiple

aspects, including institutions, economy, health, education, market efficiency, market size, labor efficiency, banking, tourism and technical sector, level of invention and development through specialized studies and research (Figure 15). This data is categorized using global frameworks for comparison with the global economies through which the Kingdom is ranked globally. The latest report entitled “The Global Competitiveness Report” (2020) can be found using this link: https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2020.pdf



Figure 15. The Global Competitiveness Report

The Kingdom has made great strides in improving its competitiveness. The WEF’s 2019 Global Competitiveness Index ranked Saudi Arabia 23rd out of 140 countries in innovation and infrastructure. The country has made significant investments in addressing both topics since the 2015 launch of Vision 2030, the country’s long-term development and economic strategy. The Kingdom has also been actively engaged in the Global Risk Report. The region has identified and addressed several key risk factors, including the impact of oil volatility and the need for further economic diversification.

4.2.3 Alfaisal Center for Health Economics & Finance

Through expertise, research, and instruction, this Center seeks to promote the understanding and application of health economics and finance in KSA. This center has several objectives. It includes economic models’ development, testing and validation; support assessment of health needs and care demand; consultancy on healthcare investments, financing, and business intelligence; embracing translational research in the field of health economics; and training of healthcare professionals (short courses/modules, MSc courses and programs). The expertise of the center encompasses data intelligence, business intelligence, publishing, value creation and strategy.

4.2.4 Alfaisal Statistical Consulting Unit

The Alfaisal Statistical Consulting Unit (ASCU) is a professional statistical service team of internationally renowned experts that aims to promote and strengthen research by assisting researchers and other clients with using statistical methods in their research in the most optimal way. Services include consulting, instructions, and proposal preparation.

4.3 Laboratories

One of the six services offered at the Center includes laboratory usage. From the 66 labs that Alfaisal University holds on campus, there are six (6) Core Laboratories that include: Biomedical Sciences, Materials Nanotechnology,

Imaging and Characterization, Analytic Chemistry, Pharmaceuticals, and High-Speed Computing & AI. The services being offered at these laboratories include training, full-service usage of the labs, and/or independent usage. For details on the specific core laboratories & services offered please see the link: <https://corelabs.alfaisal.edu/>.

4.4 Alfaisal Extension

Educational training is to develop strong professional education portfolio to increase AU's non-academic earnings and participation in transforming KSA's economy and society. With the use of one of the most powerful learning platforms, *Alfaisal Extension*, the training center, offers face-to-face, online and/or hybrid courses that focuses on both standard and customized/tailored programs for any organization's needs.



There are many different approaches to learning, and the specific methods and technologies the Center uses can vary significantly depending on the goals of the course and the preferences of the learners. Some common methods of online learning include:

1. Asynchronous learning: This type of online learning allows students to access course materials and complete assignments on their own schedule, rather than following a set timetable.
2. Synchronous learning: This type of online learning involves real-time interactions between students and instructors, typically through video conferencing or other live-streaming technologies.
3. Self-paced learning: This type of online learning allows students to work through course materials at their own pace, rather than following a set schedule.
4. Blended learning: This type of online learning combines traditional in-person classes with online elements, such as online discussions or video lectures.

The Alfaisal Center for Research and Consultancy Studies partnered with Coursera, a global online learning platform that offers anyone, anywhere, access to online courses and degrees from leading universities and companies. Coursera partners with more than 250 leading universities and companies to bring flexible, affordable, job-relevant online learning to individuals and organizations worldwide, and Alfaisal University is one of them. They offer a range of learning opportunities—from hands-on projects and courses to job-ready certificates and degree programs. In collaboration with the Center, Coursera and KLD, the Center supplies courses in Arabic that focuses on leadership, management, business, and soft skills. Currently, the platform is home to over 100 Arabic courses that targets 5.2 million learners. Since May 2022, over 38,000 learners enrolled with an excellent course rating of 4.7.

4.5 Advanced Manufacturing

The Center for Advanced Manufacturing (CamX) aims at advancing the state of manufacturing in the Kingdom, fusing traditional approaches with emerging

technologies such as IoT, AI/ML, additive manufacturing, and agile prototyping. The aim of this center is to advance the state of manufacturing in the Kingdom through expertise, innovation, and education. Likewise, there are many different types of advanced manufacturing technologies, and the specific technologies used can vary depending on the industry and the specific manufacturing processes involved. Some of the Center's common advanced manufacturing technologies include:

1. Robotics: Robotics technologies can be used to automate manufacturing processes and to improve the speed, accuracy, and flexibility of production.
2. 3D printing: 3D printing technologies can be used to manufacture complex, custom parts and products quickly and inexpensively.
3. Additive manufacturing: Additive manufacturing technologies, such as laser sintering and selective laser melting, can be used to produce high-precision, complex parts and products.
4. Advanced materials: Advanced materials, such as high-strength alloys and composite materials, can be used to improve the performance and durability of manufactured products.

The services CamX offers includes a wide array of services, including support for product innovation, design, modeling, and prototyping; consultancy on product viability and market need; introduction artificial intelligence and machine learning in management and factory operation; and training through impactful, modular packages matching industry needs.

Overall, advanced manufacturing technologies are driving significant improvements in the efficiency, productivity, and quality of manufacturing operations around the world, and they are likely to continue to play a key role in the development of the manufacturing sector in the future.

4.6 IP Licensing

The Center through the *Office of Research & Innovation* offers *IP licensing*, the process of granting permission to use intellectual property (IP) rights, such as patents, trademarks, and copyrights, in exchange for payment or other consideration. IP licensing allows companies to access and use IP rights that they do not own, and it can be an important source of revenue for IP owners. The Technology Transfer Office (TTO) is the entity responsible for all aspects of technology and Intellectual Property (IP) creation, management, transfer, and release at the University (<https://tto.alfaisal.edu/>). A total of 52 patents has been assigned and granted to Alfaisal University and its faculty under this office. See section 2.3 *for more detail*. IP licensing can be an important tool for companies to access and use IP rights that they do not own, and it can also be a valuable source of revenue for IP owners. However, it is important for companies to carefully consider the terms of an IP license and to ensure that they are obtaining the rights they need to meet their business goals.