

# Department of Civil & Architectural Engineering

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## *Department Executive Summary*

This document reports about progress and activities of the Department of Civil & Architectural Engineering (CAE) for the calendar year 2022. During this year, the department continued its strong activities, with excellent achievements, in all academic domains beside the industrial and community interactions.

In the domain of teaching and learning, beside the high quality work of curriculum and quality assurance committee as well as the postgraduate committee, the Department had a successful visit for the ABET exercise. The Department followed up and addressed all requirements for the proposal of Concentration in Environmental Engineering, which is now in the last step for approval by Board of Regents.

In the research domain, the main highlight is that the Civil Engineering subject at Qatar University has made it for the first time in the QS subject ranking within the top 151-200. Furthermore, the Civil Engineering subject at Qatar University has been maintained at top 151-200 in Shanghai Ranking in 2022. The Department published 115 Journal papers (94 top tier, 19 second tier and 2 others) in 2022 and 31 conference papers in 2022 in International Conferences. Four members of the Department were listed in the 2% highly cited of scientists in the world in 2021. One of the department members won the British Geotechnical Association Award for 2022 case studies. The department's students won several university awards in 2022 such as the top awards for graduate students, first place for best image, the Dissertation Award and Graduate Research Award in Science and Engineering.

With regard to service and interaction with the industry, the department received 2 new industrial projects from Qatar Rail in 2022 with funding exceeding 1.6 Million Qatari Riyal. The department also secured over 600 Thousand Qatari Riyal in 2022 for funding to the CIC 2023 (with other funds in 2023). The certificate on Lean for Infrastructure Training was signed and discussed with Ashghal for delivery in 2023. Ashghal Chair in the area of recycled materials was approved and the position has already been filled. Communications took place along with strong effort in 2022 to organize the 2nd version of CIC conference in 2023. The department received a visit in May 2022 for renewal of the ISO-17025 certification in Construction Materials and received the renewal with clean sheet. The Department built on the ISO-certification achievements and worked closely with Ashghal on the Interlab exercise for the verification of lab testing.

With regard to the effort on outreach, beside other activities such as schools' visits and the organization of annual bridge competition, the Department successfully organized for the first time the program of future engineer in collaboration with the National Service Academy and Qatar Society of Engineers. The program was done in January-February 2022 for a week for students in the National Service Academy.

The report shows details along with the dates of the activities and achievements for the CAE Department during the calendar year 2021.

## Department Profile

**Table 1: Executive Summary of Civil & Architectural Engineering Department**

Description	
<b>Academic and Support Staff</b>	
	<b>2022</b>
Faculty	21
Lecturers and Teaching Assistants	7
Graduate Assistants	2
Technical and Administrative Staff	4
On-Study Leave	0
<b>Total</b>	<b>34</b>
<b>Undergraduate Program</b>	
	<b>2022</b>
Enrollment (Fall 2022)	232
Registered (Fall 2022)	212
Graduates (Spring 2022)	23
Graduates (Summer)	2
Graduates (Fall 2022)	21
<b>Graduate Program</b>	
	<b>2022</b>
Enrollment (Fall 2022)	49
Registered (Fall 2022)	42
Graduates (Spring 2022)	1
<b>Research Projects (Awarded in 2022)</b>	
	<b>2022</b>
GSRA	0
NPRP	1
PDRA	0

UREP	5
Qatar University Grants	6
University Internal Students' Grants	3
MME	1
<b>Research Projects (Active in 2022)</b>	<b>2022</b>
GSRA	7
NPRP	7
PDRA	1
UREP	3
Qatar University Grants	5
University Internal Students' Grants	1
Industrial	0
MME	1
IRCC	1
<b>Publications (Appendix A1)</b>	<b>2022</b>
Refereed Journal Papers	115
Conference Papers	32
Technical Reports	1
Book Chapters	1
Books	0
Book Reviews	0
Editorials and Essays	0
<b>Seminars – Public Lectures – Short Courses (Appendix A2)</b>	<b>2022</b>

Seminars and Public Lectures Delivered by Departmental Faculty Members Inside Qatar University	7
Seminars and Public Lectures Delivered by Departmental Faculty Members Outside Qatar University	3
Short Course Delivered by Departmental Faculty Members	0
Seminars and Public Lectures Attended by Departmental Faculty Members	1
Invited Public Lectures/ Keynote Speakers	2
<b>Faculty Activities (Appendix A3)</b>	<b>2022</b>
Professional Service	11
Awards and Achievements	6
Conferences Attended	3
Workshops, Training and Visits Attended	28
Workshops, Training and Visits Delivered	9
Seminars & Trainings	6
Events Organized	5
Other Activities	4
<b>Students' Activities (Appendix A4)</b>	<b>2022</b>
Competitions	4
Awards	0
Field Trips, Social and Extra-Curricular Events	4

## Academic Staff

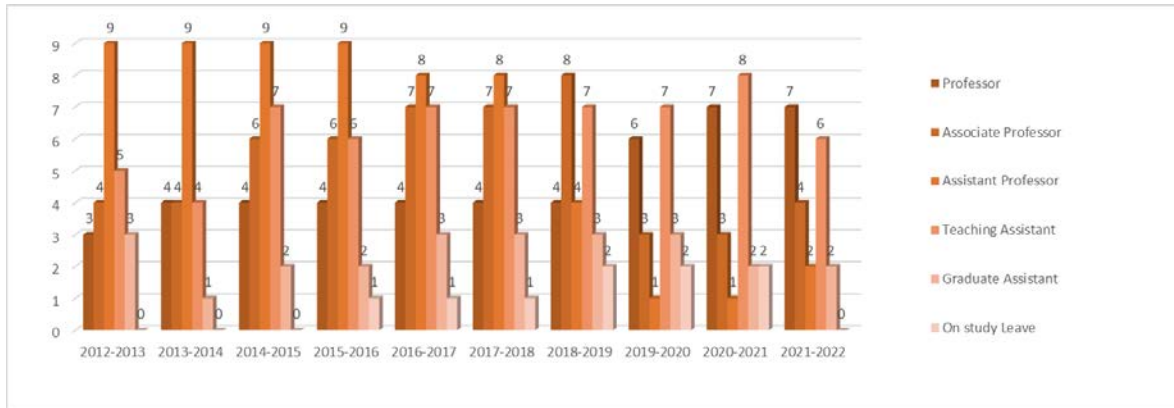


Figure 1: Academic Staff in CAE Department, 2012-2022

## Technical and Administrative Staff

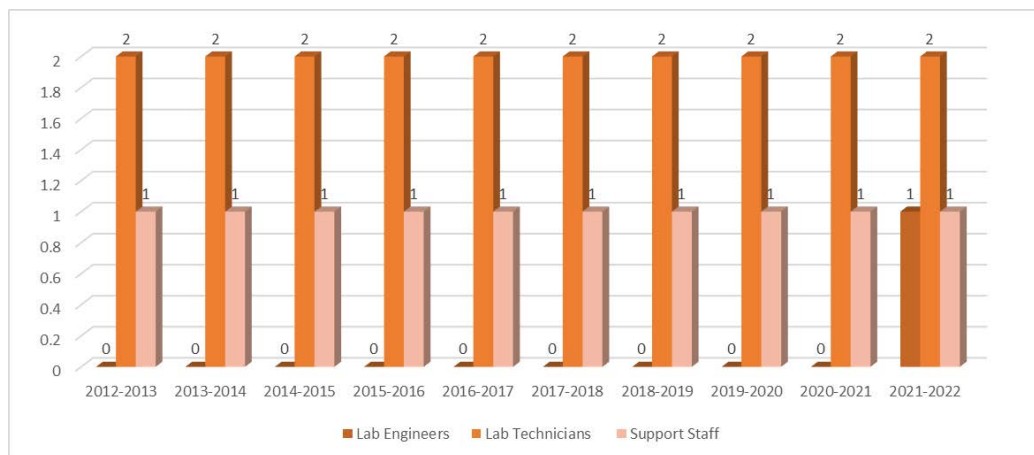


Figure 2: Non-Academic Staff in CAE Department, 2012-2022

## Department Committees and roles


The department has number of committees and coordination roles for 2022 as listed below:

- Departmental Board Committee: Dr. Mohammed Hussein (Chair), Eng. Nasser Al-Jurf (Minutes Recording), Faculty members in the Department.
- Curriculum and Quality Assurance Committee: Dr. Alaa Al-Hawari (Chair), Dr. Murat Gunduz, Dr. Hisham Eid, Dr. Usama Ebead.
- Research and Postgraduate Committee: Dr. Mohammed Elshafie (Chair and postgraduate program coordinator), Dr. Okan Sirin, Dr. Mohamed Ayari.
- CIC 2023 Conference:
  - Organizing Committee (from the Department): Dr. Mohammed Hussein (Chair), Dr. Wael Alnahhal, Dr. Mohammed Elshafie (QU Booth).
  - Technical Committee (from the Department): Dr. Wael Alnahhal (Chair), Dr. Mohammed Hussein, Dr. Murat Gunduz, Dr. Evangelos Plevris, Dr. Mohamed Ayari.

- Support staff (from the Department): Eng. Abdulrahman Abu Hijleh, Eng. Nasser Al-Nohmi, Eng. Khaled Rabie, Eng. Anas Alsharo, Eng. Soheb Salim, Eng. Siju Joseph, Eng. Abdul Azeez Kilayil.
- Engineer of the future for students in the National Service Academy: Dr. Mohammed Hussein (Chair), Dr. Wael Alnahhal, Dr. Mohammed Elshafie, Dr. Alaa Al-Hawari, Eng. Nasser Al-Nohmi, Eng. Nasser Al-Jurf, Eng. Abdulrahman Abu Hijleh, Eng. Khaled Rabie, Eng. Anas Alsharo, Eng. Siju Joseph, Eng. Abdul Azeez Kilayil.
  - Developing the concentration in Environmental Engineering: Dr. Mohamed Ayari, Dr. Mohammed Hussein, with input from Dr. Alaa AlHawari.
  - Recruiting Committees:  
Ashghal Chair (Spring 2022): Dr. Okan Sirin (Chair), Dr. Usama Ebead, Dr. Wael Alnahhal, Dr. Hany Hussein (Ashghal).  
TA position: Dr. Hisham Eid (Chair), Dr. Mohammed Elshafie, Dr. Evangelos Plevris.
  - Initiative on Digital Construction and Management: Dr. Khalid Naji (Chair), Dr. Mohammed Hussein, Dr. Mohammed Elshafie.
  - Changing the Department name: Dr. Mohammed Hussein, Eng. Kais Douier (Support staff).
  - Scheduling Coordinator: Dr. Wael Alnahhal.
  - Minor in Engineering Project Management coordinator: Dr. Mohammed Elshafie.
  - Coordinators of Senior design project: Dr. Murat Gunduz (Quality Coordinator), Eng. Nasser Al-Jurf (Logistics Coordinator).
  - Newsletter coordinator: Dr. Alaa Al-Hawari.
  - Technical manager of laboratories and coordinator of the ISO review: Dr. Wael Alnahhal.
  - Bridge Competition coordinator: Dr. Wael Alnahhal.
  - Library Liaison: Dr. Evangelos Plevris.
  - ASCE student chapter Academic Liaison: Dr. Okan Sirin.
  - Support of students: Department Office.
  - Administrator for outreach, events plus shared folder and software: Eng. Nasser Al-Nohmi
  - Administrator for Curriculum committee, website and P-card: Eng. Abdulrahman Abu Hijleh
  - Assistant coordinator for scheduling, course registration, coaching system: Eng. Khaled Rabie.
  - Administrator for Postgraduate committee plus workshop coordination: Eng. Anas Alsharo.
  - Assistant staff for tendering, labs safety and requirements: Eng. Abdul Azeez Kilayil.
  - Assistant staff for accreditation and lab development: Eng. Siju Joseph.

## Faculty Profile

Table 2: CAE Faculty Profile 2022






Photo	Faculty Name	Rank/Position	Area of Specialization
<b>Faculty Members with Administrative Roles</b>			
	Mohammed Hussein	Head of the Department of Civil and Architectural Engineering	Railway Engineering, Ground-borne Vibration, Structural Dynamics, Structural-Health Monitoring, Soil-structure interaction, Human-structure interaction.



	Hassan Al-Derham	QU President	Procurement of construction projects, productivity of construction projects, housing projects, evaluation of consulting offices
	Omar Al-Ansari	Qatar University Vice-President for Academic Affairs	Geotechnical Engineering
	Khalid Naji	Dean of College of Engineering	Computer applications in construction engineering with emphasis on project management, cad and graphical simulation techniques, virtual environments
	Nasser Alnuaimi	Associate Vice President for Research and Graduate Studies	Structural concrete properties and behavior, concrete materials engineering and the design of reinforced concrete structures, concrete durability and concrete repair
<b>Full Professors</b>			
	Hisham Eid	Professor	Soil and rock mechanics, geo-environmental engineering, soil-structure interaction
	Usama Ebead	Professor	Structural Engineering, Rehabilitation of reinforced concrete structures, Finite element modeling of reinforced concrete structures, Durability of FRP reinforcement in concrete

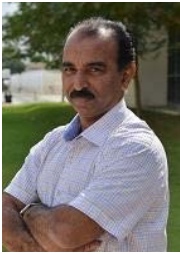

	Murat Gunduz	Professor	Construction engineering and management, construction productivity measurement and improvement, construction health and safety, data collection and analysis
	Riyadh Al-Raoush	Professor	Fate and transport of contaminants in subsurface systems, Environmental fluid dynamics, Multiphase and multistate modeling of flow through porous media
	Alaa Al Hawari	Professor	Water and waste water treatment (membrane rejection and fouling, bio sorption and selective adsorption), solid waste management and sustainability
	Okan Sirin	Professor	Pavement materials and design, Superpave technology, Accelerated pavement testing, Traffic engineering
	Mohammed Al-Ansari	Professor	earthquake response of structures, analytical modeling of structures, and design and analysis of offshore structures.
Associate Professors			
	Wael Ibrahim Alnahhal	Associate Professor	Structural Engineering, Application of advanced composite materials (FRP) in the infrastructure and in upgrading deteriorating structures, Computational mechanics, Finite Element Analysis, Floor vibrations serviceability, and Earthquake Engineering.



	Mohammed Elshafie	Associate Professor	Acquiring and understanding in-depth new information about Civil Engineering infrastructure; using novel sensing techniques on real world assets combined with advanced modelling techniques, provides the missing feedback loop between design, construction and operation.
	Vagelis Plevis	Associate Professor	Structural Engineering
	Mohamed Arslan Ayari	Associate Professor	Computational Thermo-Fluid Dynamics (CFD), design and analysis of heating ventilation, air conditioning and refrigeration (HVAC/R) systems, Renewables Energy and Energy Management, Environmental modeling focused on contaminant distribution and indoor air quality, Sustainable Development.
Assistant Professors			
	Tayyab Ahmad	Assistant Professor	Built environment, project success frameworks, decision-making frameworks, Building Information Modelling, sustainable development, life cycle assessment, Green Building development; Construction project planning and management
Affiliated academics from Qatar Traffic and transportation safety center			
	Wael Alhajyaseen	Research Associate Professor	Traffic Engineering

	Charitha Dias	Assistant professor for Research	Crowd dynamics, Traffic simulation, Human behavior Modelling
	Deepti Muley	Research Associate	Transpiration Engineering
	Shahram Tahmasseby	Research Associate	Transportation Planning
Lecturers			
	Hamad Al- Nuaimi	Assistant Professor	Structural Engineering
	Salem Alnaimi	Lecturer	Transportation Engineering

	Nasser Al-Jurf	Lecturer	Engineering Systems Management with Construction Management Concentration
<b>Teaching Assistants</b>			
	Abdulrahman Z. Abu-Hijleh	Teaching Assistant	Construction Management & Analysis and Design of Structures
	Nasser Al-Nohmi	Teaching Assistant	Analysis and Design of Structures, concrete durability, Structural concrete properties and behavior & Construction Management
	Khaled Rabie	Teaching Assistant	Geotechnical Focusing on Landslides ,slope stability and soil shear strength
	Anas Al-Sharo	Teaching Assistant	Surveying, Structural Analysis and Design
<b>Lab Engineers</b>			
	Soheb Salim	Lab Engineer	Land Surveying, Materials Testing & Concrete and Soil Mechanics
<b>Lab Technicians</b>			

	<p>Abdulazeez Kilayil</p>	<p>Senior Lab Technician</p>	<p>Land Surveying, Materials Testing &amp; Concrete and Soil Mechanics</p>
	<p>Joseph Valiya Parambil Siju</p>	<p>Lab Technician</p>	<p>Traffic, Transportation &amp; Pavement and Material Testing</p>
<p>Administrative Assistants</p>			
	<p>Ms.Maryam Laram</p>	<p>Administrative Coordinator</p>	

## Department/Program FTE

The tables below show the teaching load for the core academics in the CAE Department. The load covered by collaborating Centers is not shown here.

**Table 3: Teaching load of 2021-2022**

Categ.	Names	Courses	SDPs	PG Supervision	Total	Required	Difference (+ means overload)
CAE Core Academics	Dr. Al-Ansari	12	3.70074	0	15.70074	18	-2.29926
	Dr. Al-Hawari	9	1.65033	4.333667	14.984	15	-0.016003
	Dr. Al-Nahhal	15	3.875775	3.5	22.37578	18	4.375775
	Dr. Al-Nuaimi	0	0	0	0	0	0
	Dr. Al-Raoush	15	5.142695	1	21.1427	18	3.142695
	Dr. Ayari	12	1.30026	1	14.30026	12	2.30026
	Dr. Ebead	9	4.40088	2.5	15.90088	15	0.90088
	Dr. Eid	15	1.8337	1	17.8337	18	-0.1663
	Dr. Elshafie	9	4.63426	0	13.63426	12	1.63426
	Dr. Gunduz	18	1.96706	4	23.96706	18	5.96706
	Dr. Hussein	6	0	1.417	7.417	6	1.417
	Dr. Naji	6	0	5.25	11.25	3	8.25
Dr. Plevris	12	4.75095	0.5	17.25095	18	-0.74905	
Dr. Sirin	15	0.5001	3	18.5001	18	0.5001	
QTSC Academics jointly affiliated with the CAE Department	Dr. Alhajyaseen	6	0	2.418	8.418		
	Dr. Dias	6	0.875175	0.5	7.375175		
	Dr. Muley	6	1.0002	0.25	7.2502		
	Dr. Tahmasseby	6	1.375275	0	7.375275		
Other QU Academics	Dr. Baabbad	6	0	0	6		
	Dr. Das	6	0	0	6		
	Dr. Zaidi	6	0	0	6		

**Table 4: Teaching load of 2022-2023**

Categ.	Names	Courses	SDPs	PG Supervision	Total	Required	Difference (+ means overload)
CAE Core Academics	Dr. Al-Hawari	9	1.61699	4.5	15.11699	15	0.11699
	Dr. Al-Nahhal	9	3.25065	4.75	17.00065	18	-0.99935
	Dr. H Al-Nuaimi	3	0.93352	0	3.93352	4	0.06648

	Dr. Al-Raoush	15	1.93372	1.5	18.43372	18	0.43372
	Dr. Ayari	12	2.342135	0.25	14.592135	15	-0.407865
	Dr. Ebead	12	2.90058	0	14.90058	15	0.09942
	Dr. Eid	15	2.13376	0.5	17.63376	18	-0.36624
	Dr. Elshafie	9	2.55051	1.5	13.05051	12	1.05051
	Dr. Gunduz	15	0	6	21	18	3
	Dr. Hussein	6	0	2.25	8.25	6	2.25
	Dr. Naji	0	0	5.5	5.5	3	2.5
	Dr. Plevris	15	3.625725	0.5	19.12573	18	1.125725
	Dr. Sirin	10	0	1.75	16.75	18	-1.25
	Dr. Tayyab	15	2.41715	0	17.41715	18	-0.58285
QTTSC Academics jointly affiliated at the CAE Department	Dr. Alhajyaseen	6	0	3.584	9.584		
	Dr. Dias	6	0	0.5	6.5		
	Dr. Muley	6	0.46676	0	6.46676		
	Dr. Tahmasseby	6	0.46676	0	6.46676		
Other QU Academics	Dr. Ayub	6	0	0	6		
	Dr. Das	6	0.70014	0.25	6.95014		
	Dr. Zaidi	6	0	0	6		
Other Academics	Qinaat	6	0	0	6		
	Abi Nader	3	0	0	3		
	Mashal	6	0	0	6		

## Undergraduate Majors and Minors

### Bachelor of Science in Civil Engineering

The Department of Civil and Architectural Engineering at Qatar University awards the Bachelor of Science (B.Sc.) in Civil Engineering. Civil Engineering is the broadest and oldest of the engineering disciplines, spanning across many technical specialties which are not independent, but rather interact with each other. Civil engineers plan, design, construct and maintain the physical and naturally built environment including buildings; roads; bridges; airports; railways; ports; water distribution and wastewater collection systems; waste disposal facilities; tunnels; stadiums; offshore structures; dams; and other infrastructure projects. As civil engineers develop their skills, they can advance into the area of engineering management, overseeing the completion of the whole project.

Our students have to complete a total of 131 credit hours in order to graduate with the B.Sc., degree. Our curriculum ensures an excellent coverage of mathematics and basic sciences; general education; communication skills development; engineering fundamentals; core and upper level civil engineering courses' requirements; and design experience. Additional opportunities to enhance professional development include industrial training; field visits; presentations by practicing engineers; involvement in research projects and competitions;

participation in the ASCE Student Chapter; and participation in students' exchange through the International Association for the Exchange of Students for Technical Expertise (IAESTE) Program.

The department has 21 faculty members and 7 lecturers and TAs. Four of those faculty members are fully engaged in upper administration duties. All faculty members have PhDs from various reputable institutions in three countries (USA, Canada and the UK). The faculty members' specialties cover various areas of Civil Engineering including structures; transportation; geotechnical and materials; water resources; environmental engineering; and construction management and engineering. A number of faculty members are also holders of the professional engineering license from the USA, Canada and Jordan. Our faculty members are also active in research and other scholarly work, professional service, and community engagement.

We are proud of our students, faculty, teaching assistants, and other supporting staff. We are also proud that the Civil Engineering Program is accredited by the Engineering Accreditation Commission of ABET. Accreditation ensures that the students, parents, employers, and the society we serve can be confident that a program meets the quality standards that produce graduates prepared to enter a global workforce.

#### Minor in Engineering Project Management

The Minor in Engineering Project Management was approved by Qatar University in November 2020 and started in Fall 2021.

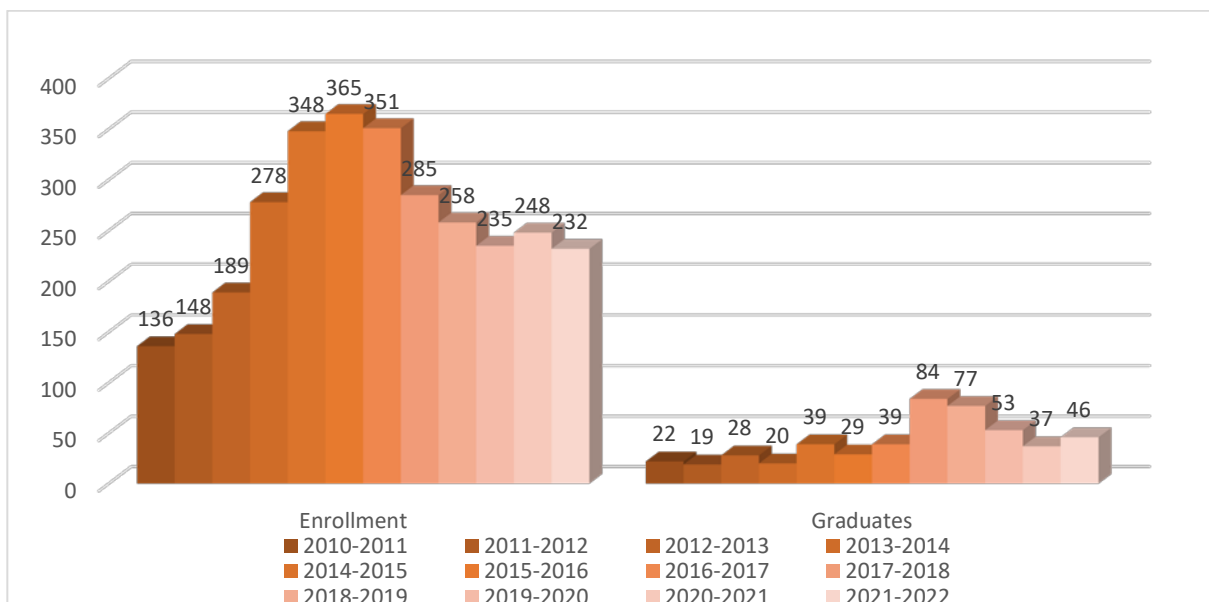


Figure 3: Number of enrolled and graduating undergraduate students in CAE department, 2010–2022

## Postgraduate Programs

The Department of Civil and Architectural Engineering started its graduate programs in 2010 as part of the graduate program of the College of Engineering, CENG. It participates in two interdisciplinary master's programs: The Engineering Management and the Environmental Engineering Programs, offered under the umbrella of the College of Engineering. In addition, the department has started to offer master's and Ph.D. degrees in other Civil Engineering disciplines.

The details of the department's graduate degrees can be summarized as follows:

1. Master of Science in Civil Engineering: A program that was initiated in Fall 2011. It includes specialization in structures, geotechnical, transportation, and hydraulics and water resources. This program started enrolling students in Fall 2012.
2. Ph.D. in Civil Engineering: This program was set up in 2010 and accepted two students in the area of structures/materials in Fall 2011. It grew in the following years and expected to further grow in the future.
3. Master of Science in Engineering: The Department of Civil and Architectural Engineering participates in two CENG Master of Science degrees in Engineering:
  - a) Engineering Management (Construction Track), in collaboration with the Department of Mechanical and Industrial Engineering: This track started in Fall 2012.
  - b) Environmental Engineering, in collaboration with the Chemical and Mechanical and Industrial Engineering Departments: This program started offering courses in Fall 2011

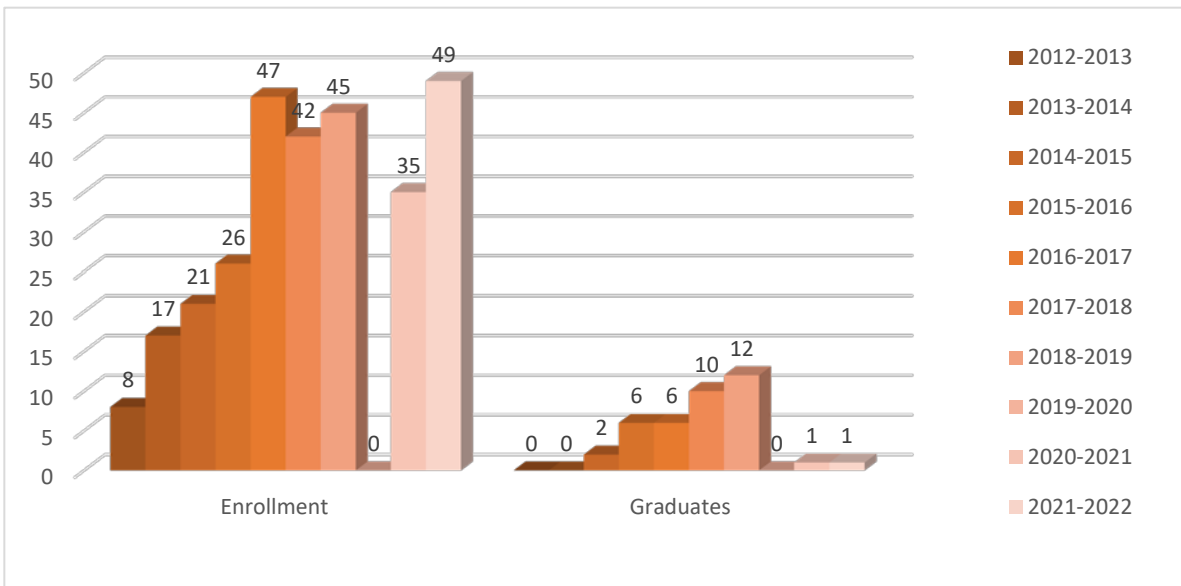


Figure 4: Number of enrolled and graduating graduate students in CAE department, 2012– 2022



## Internal, External Grants and Research

The following table illustrates the awarded research projects in the Department of CAE 2022

**Table 5: Awarded Research Projects and Grants in the Department of CAE in 2022**

Project Number	Project Title	Co-LPI/LPI
QUEX-QatarRail-22/23-4.	Prediction and Attenuation of Ground-borne noise and Vibration in Buildings	Mohammed Hussein (LPI)
MME03-1015-210003	Sustainable Agriculture in Arid Climate	Alaa Al Hawari,
UREP29-034-2-011	Biofuel production from algal biomass using an economic and environmentally friendly	Alaa Al Hawari
NPRP14S-0317-210064	Multi-layered hierarchically porous membranes for high-quality wastewater treatment for irrigation purposes	Alaa Al Hawari
Student Grant	Design Optimization of Truss Structures using Swarm Intelligence Methods	Vagelis Plevris
Student Grant	Exploring the Potential of Blockchain Technology in Civil Engineering, Architecture and the Construction Industry	Vagelis Plevris
QU Internal Grants, High Impact GRANT, Cycle 05	Managed Aquifer Recharge (MAR) in Qatar: A Multiscale Investigation of Clogging of Qatari Groundwater Aquifer	Riyadh Al Raoush (LPI) Arslan Ayari (PI)

UREP29-047-2-017	Pore-scale investigation of the dynamics of contact angels for geological carbon	Riyadh AlRaoush (LPI)
QU Internal Grants, IRCC-CD	Managed Aquifer Recharge (MAR) in Qatar: A Multiscale Investigation of Clogging of Qatari Groundwater Aquifer	Riyadh Al-Raoush (LPI) Hasan Khan (PI), Fadhil Sadooni (PI), Arslan Ayari (PI)
Fund by Office of Research Support at Qatar University	Groundwater Recharge in Qatar: A Microscale Investigation of Clogging of Qatari Aquifers	Riyadh AlRaoush (LPI)
Student grant	Tensile characterization of sustainable fabric reinforced geopolymer matrix (FRGPM) in strengthening applications	Usama Ebead
UREP29-022-2-009	How is time pressure associated with driving performance? A driving simulator study on taxi drivers	Qinaat Hussain (LPI) Wael Alhajyaseen
UREP29-029-5-002	Analysis of Car Following Behavior Considering Heterogeneous Driving Population in Qatar: The Risk of Tailgating	Charitha Dias (LPI) Wael Alhajyaseen
QUEX-TrafficTech-23/24	Examining the Preference of Personnel Electric Vehicles such as e-scooters among Residents in the State of Qatar	Wael Alhajyaseen (LPI)
QU internal grants, Collaborative grants	Role of e-Scooters in Future Urban Mobility: Empirical Analysis and Modelling of Shared Space Users' Behavior and Safety	Charitha Dias (LPI) Wael Alhajyaseen
QUST-2-CENG-2022-671	Gender Effect on Microscopic Characteristics of Crowd Dynamics	Charitha Dias

UREP 29-123-2-034	Explainable machine learning-based efficient prediction tool for modeling of FRP-steel confined reinforced concrete columns and its applications	Usama Ebead
QUCG-CENG-22/23-561	Sustainable concrete using locally discarded Materials and Treated Domestic wastewater: Mechanical, Durability and Applications in RC Elements	Dr. Wael Alnahhal (LPI); Dr. Mohammed Elshafie (PI), Dr. Mohammed Irshidat (PI)
QUEx – QatarRail – 22/23 – 3	Development of Geotechnical Assessment Charts for assets within Railway Protection Zones in Qatar.	Dr. Mohammed Elshafie (LPI) and Hisham Eid (PI)

**Table 6: Research Projects Active (running) during any time from January 2022 to the end of December 2022 which were awarded in previous years.**

Project Number	Project Title	Co-LPI/LPI
GSRA6-1-0301-19005	Basalt FRP Bars: Durability and Applications in RC Elements	Wael Alnahhal
GSRA6-1-0509-19022	Sustainable Concrete Using Treated Municipal Wastewater and Locally Discarded Materials: Mechanical, Durability, and Applications in RC Element	Wael Alnahhal
GSRA7-1-0419-20019	Structural and Durability Performance of FRP Reinforcements and Sustainable Green Concrete”	Wael Alnahhal
QUEx-CENG-QR-21/22-1	Control of Ground-borne Noise and Vibration from Doha Metro	Mohammed Hussein

NPRP13S-0209-200311	Advanced Composites for Internal and External Reinforcement of Concrete Structures: Experimental and Life Cycle-Assessment Studies	Usama Ali Ebead
PDRA5-0228-19001	The Utilization of TBM Muck and Substation Excavation Wastes Generated in Qatar for Construction Applications	Mohammed Al-Ansari
NPRP11S-1211-170085	SELF-HEALING BIO-CONCRETE FOR SUSTAINABLE AND RESILIENT CIVIL INFRASTRUCTURE	Nasser Al Nuaimi
NPRP11S-1228-170143	Examining Driving Behavior of Adults with Higher Functioning Autism Spectrum Disorders to develop and evaluate an innovative driving instructor training program.	Wael Alhajyaseen (LPI)
NPRP 13S-0130-200211	Development of a Mobility-as-a-Service (MaaS) Ecosystem with Qatar's Context	Shahram Tahmasseby (LPI) Wael Alhajyaseen
M-QJRC-2020-8	Development of Innovative Measures for Improving Pedestrian Safety Considering the Presence of Autonomous Vehicles	Wael Alhajyaseen, PI: Charitha Dias
UREP28-085-2-033	Cyclist Safety on Local Roads: Quantitative & Qualitative Assessment	Wael Alhajyaseen (LPI)
QU internal Graduate Student Grant ID 384	Promoting cycling activities in the State of Qatar: Challenges and potential treatments	Wael Alhajyaseen (LPI)

UREP27-029-5-003	Assessment of driver behavior using smartphone-based application data	Deepti Muley; Charitha Dias
QUEX-CAM-SC-20/21-1	Research Project on Qatar World Cup Stadiums	Dr. Nasser Alnuaimi (LPI) and Dr. Mohamed Elshafie (PI)
NPRP12S-0314-190366	A novel Data-driven approach for designing dewatering systems in randomly fractured rock masses	Dr. Mohammed Elshafie (PI), Dr. Hisham Eid (LPI)
IRCC-2019-011	Transforming Locally Available Industry by-products to Innovation in Road Construction Materials.	Okan Sirin (LPI) Murat Gunduz (PI)
QUHI-CENG-2022-517	Pore-scale investigation of the dynamics of contact angles for geological carbon sequestration	Riyadh Al-Raoush (LPI), Fadhil Sadooni (PI), Arslan Ayari (PI)
GSRA7-1-0217-20002	Fines influence on Dynamic Contact Angles in Qatari Porous Media using Synchrotron Microtomography and Microfluidics	Riyadh Al Raoush
QUCG-CENG-22/23-492	Developing Magnetic nanoparticles draw solution for the reclamation of municipal wastewater using forward osmosis for irrigation of food crops	Alaa Alhawari
MME01-0906-190024	Hydrogel Agriculture to Support Food Security in Qatar	Alaa Al Hawari (LPI)

NPRP13S-0205-200263	Converting Salinity Gradient of Seawater Brine and Sewage Effluent into Energy Source	Alaa Al Hawari (LPI)
NPRP12C-0828-190023	Promoting sustainable development of K12 STEM education in Qatar in a digital age	Arslan Ayari (PI)
GSRA8-L-2-0509-21037	Microalgal bioremediation of aquaculture wastewater and simultaneous production of high-value feed ingredient	Dr. Alaa AlHawari
GSRA7-1-0429-20028	Enhancing capacitive deionization performance by using Chitosan/Lignosulfonate as a binder to the MXene electrode	Dr. Alaa AlHawari
GSRA6-1-0509-19021	Hybrid system of FO-RO to produce high quality irrigation water	Dr. Alaa AlHawari
PDRA6-0602-20007	Treatment of Municipal and Industrial Sludge Using New Low-Cost Ionic Solvents	Dr. Alaa Al Hawari

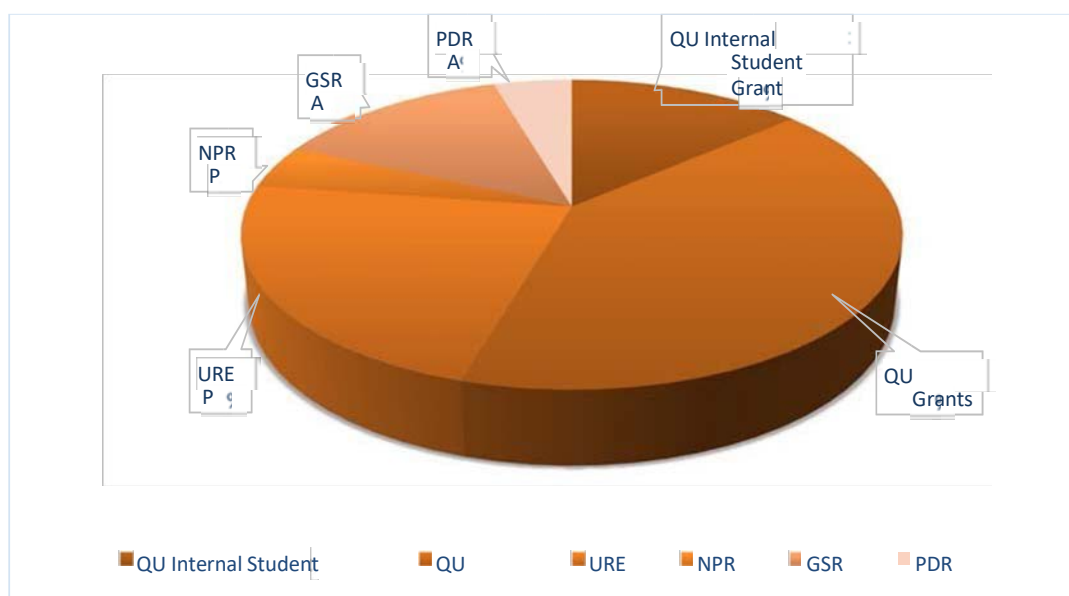


Figure 5 Research Projects Awarded in 2019

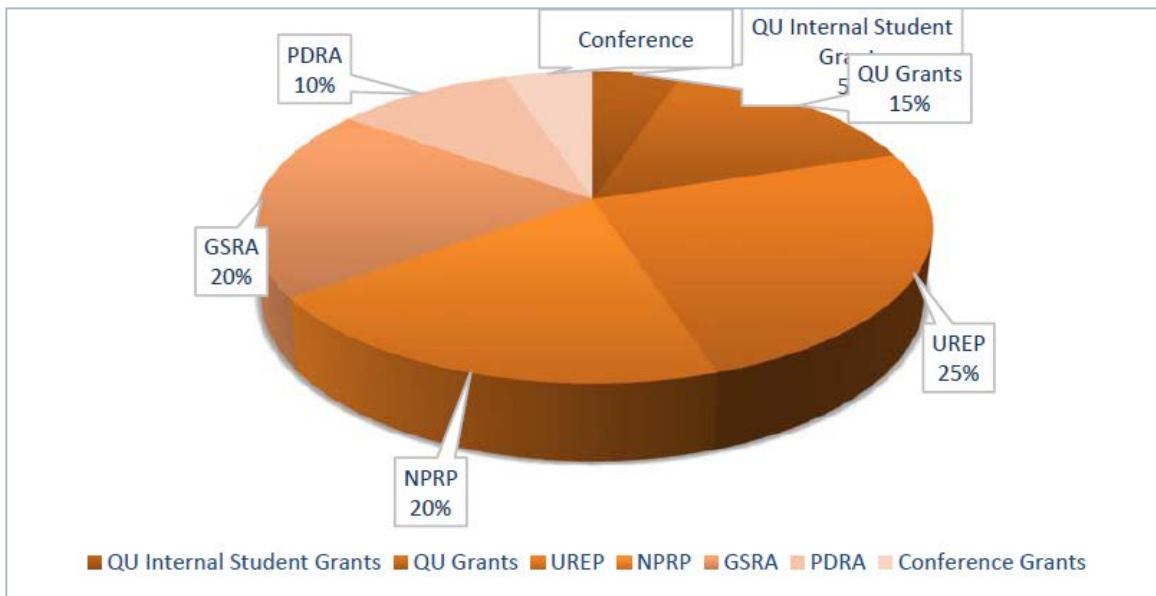


Figure 6 Research Projects Awarded in 2020

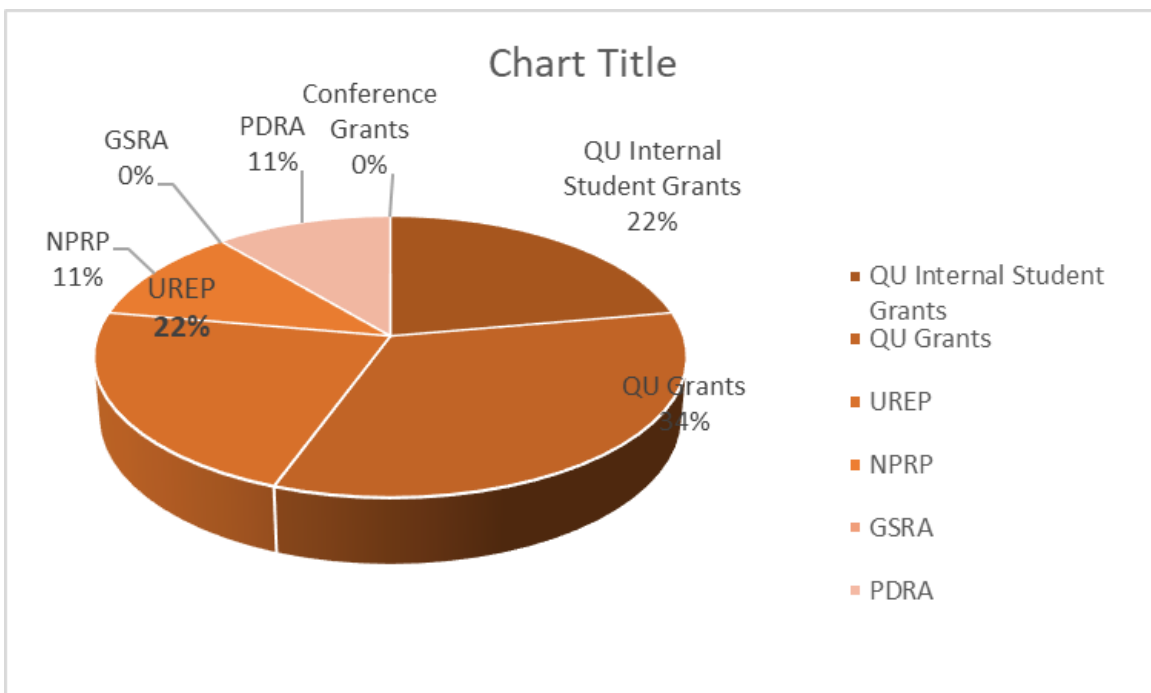


Figure 7 Research Projects Awarded in 2021

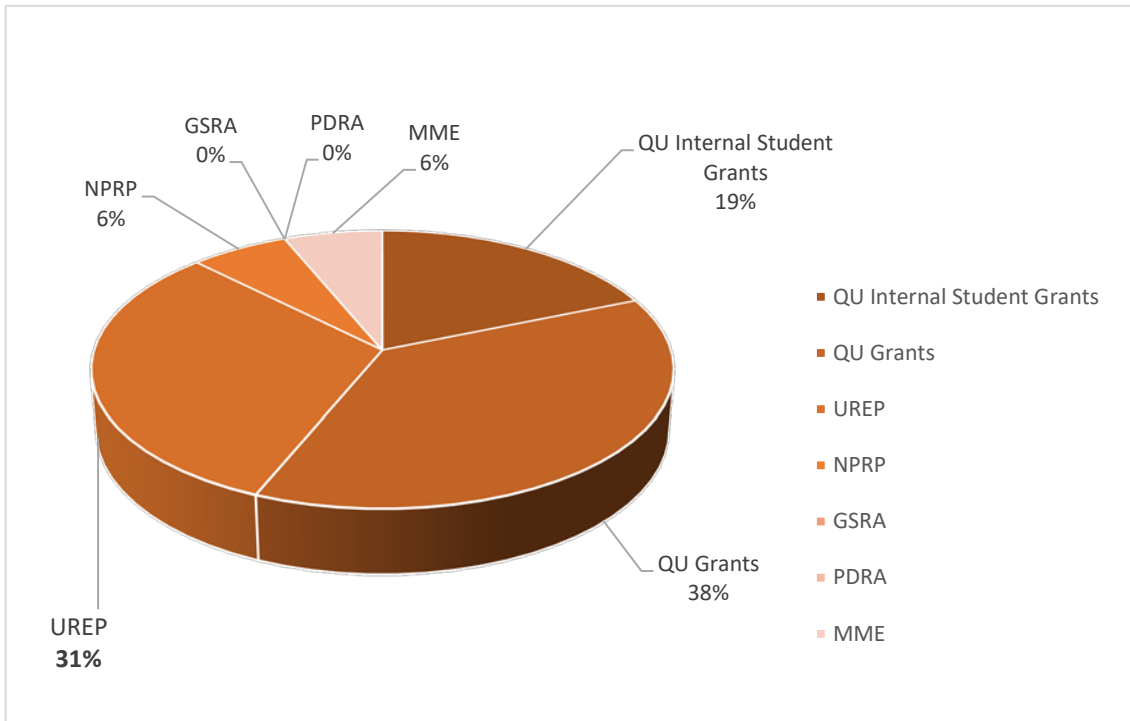


Figure 8 Research Projects Awarded in 2022

## Publications

The Figures below illustrate the publications in the Department of CAE 2019-2022. List of publications in 2022 is shown with details in appendix A1.

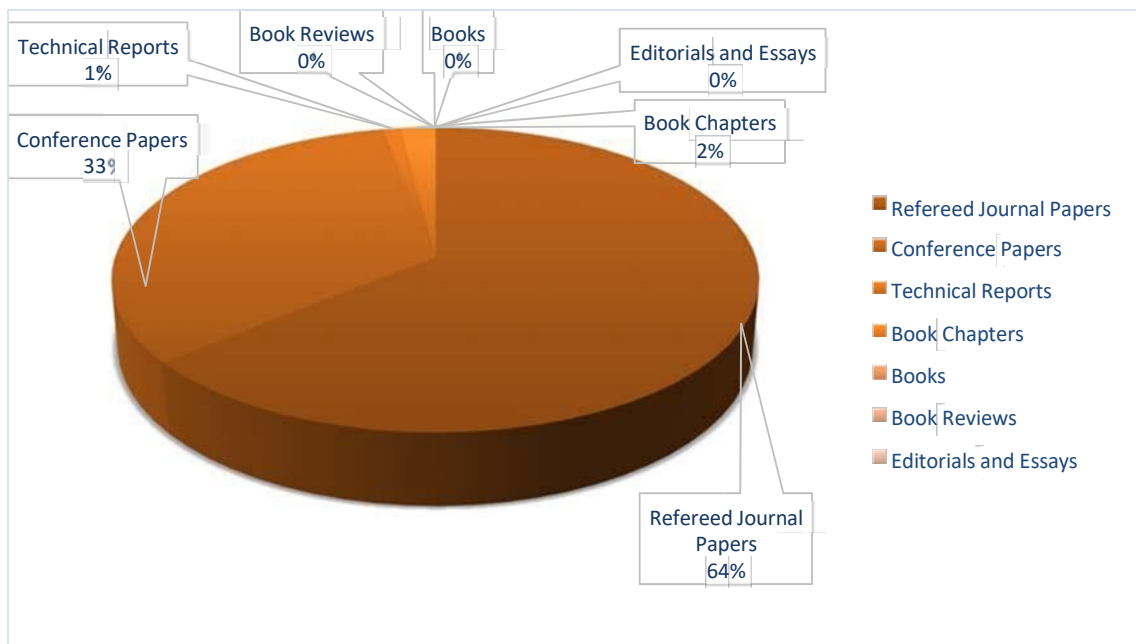


Figure 9: Publications by Faculty in 2019



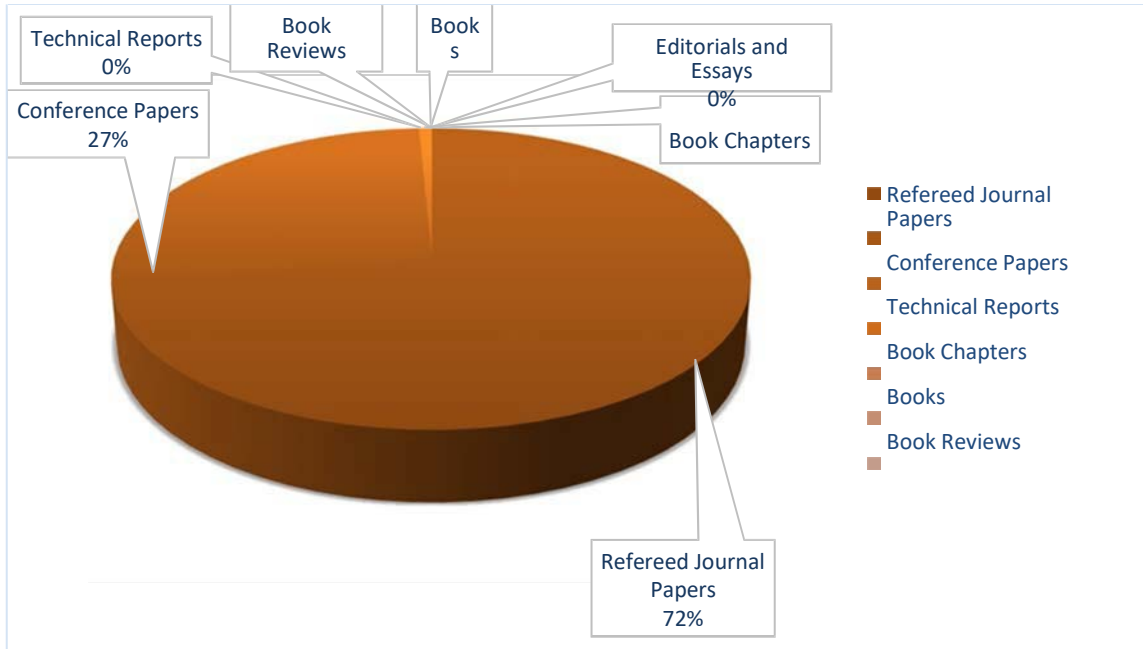


Figure 10: Publications by Faculty in 2020

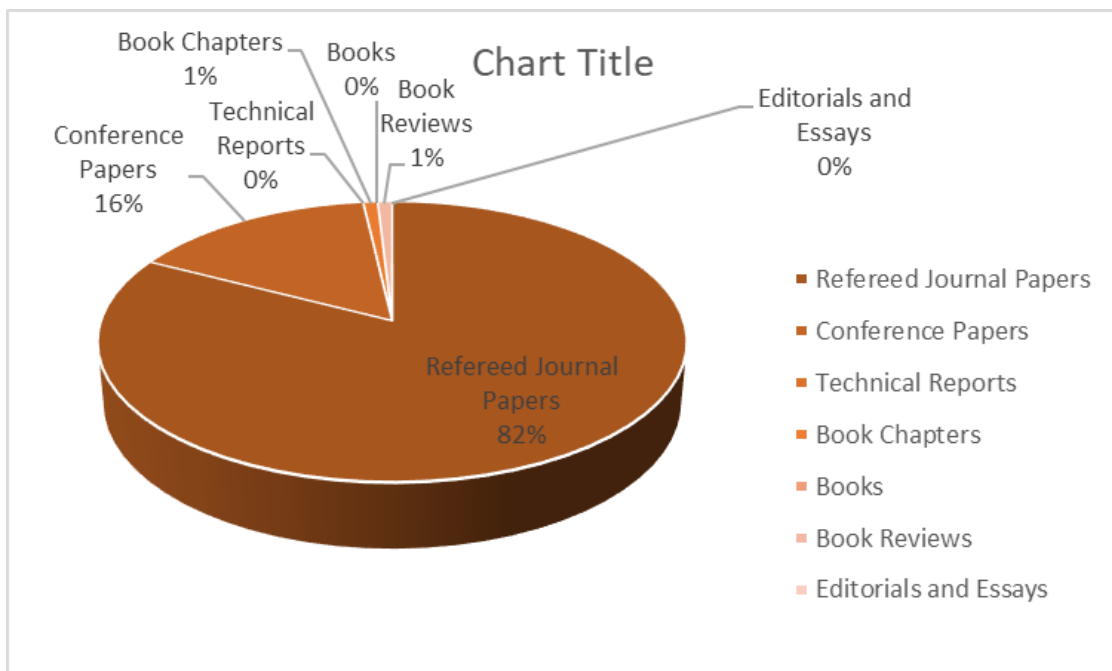


Figure 11: Publications by Faculty in 2021

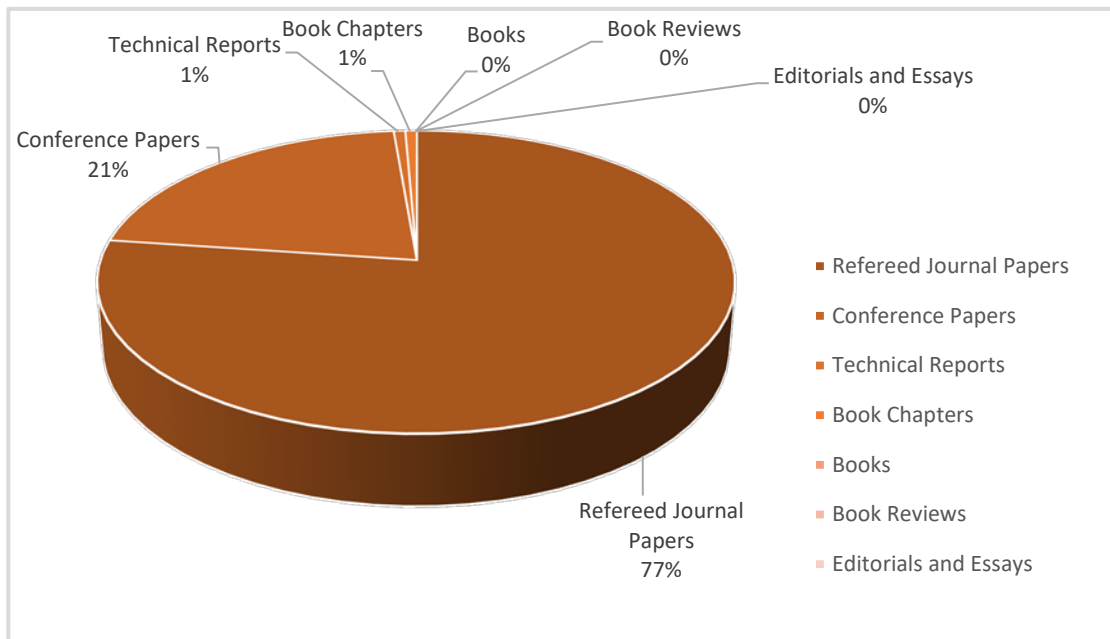


Figure 12: Publications by Faculty in 2022

### Seminars, Public Lectures

The Department of Civil and Architectural Engineering held many seminars for the calendar year 2022. Department seminars were organized with the objective of sharing scientific researches and academic experiences. Appendix A2 lists detailed data for seminars and public lectures.

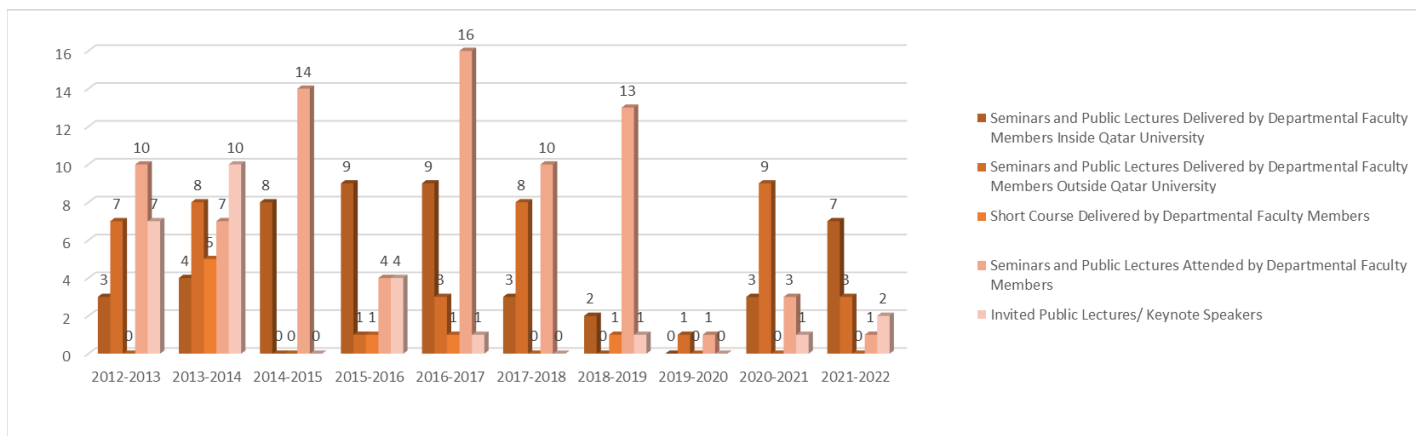


Figure 13: Seminars & Public Lectures in 2012-2022

## Academic experiences.

Appendix A2 lists detailed data for seminars, public lectures and short courses.

## Professional Developments

A list of attended events namely conferences attended, workshops, training and visits attended and delivered, and other organized events is available in Appendix A3.

## Service to Community and Outreach Programs

Appendix A3 lists detailed data for Service to Community and Outreach Programs.

## Consultancies

List of consultancies provided are given in Appendix A3.

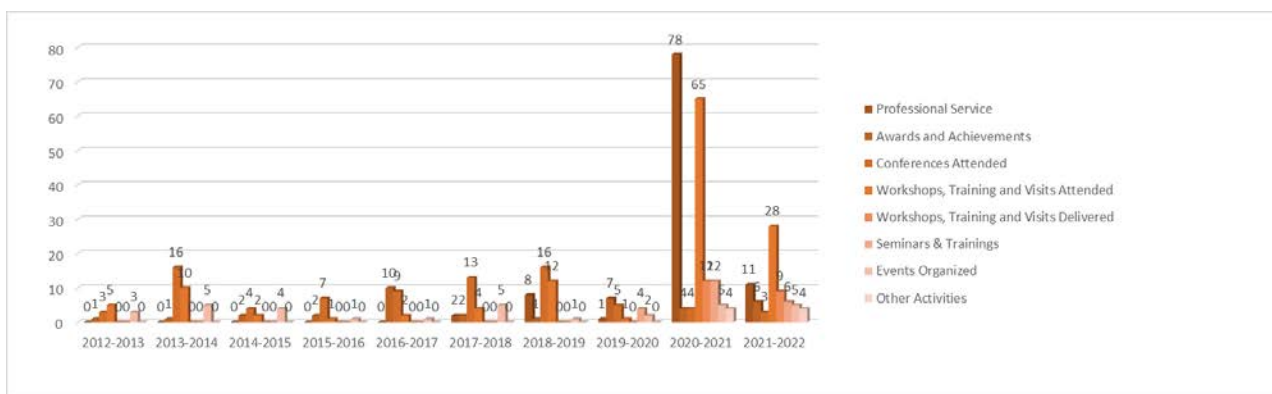


Figure 14: Faculty Activities in 2012-2022

# Appendix A1: List of Publications

## Journal Papers

1. Avci, O., Alkhamis, K., Abdeljaber, O., Alsharo, A., & Hussein, M. (2022, March). Operational modal analysis and finite element model updating of a 230 m tall tower. In *Structures* (Vol. 37, pp. 154-167).
2. Badri, Y., Sassi, S., Hussein, M., & Renno, J. (2022). Experimental and numerical investigation of damping in a hybrid automotive damper combining viscous and multiple-impact mechanisms. *Journal of Vibration and Control*, 28(23-24), 3676-3687.
3. Lamprea-Pineda, A.C., Connolly, D.P., Hussein, M.F.M., 2022, Beams on elastic foundations—a review of railway applications and solutions, *Transportation Geotechnics*, 33, 100696.
4. Soliman, K., Naji, K., Gunduz, M., Tokdemir, O., Faqih, F., & Zayed, T. (2022). BIM-based facility management models for existing buildings. *Journal of Engineering Research*, 10(1A), 21-37.
5. Maki, O., Alshaikhli, M., Gunduz, M., Naji, K. K., & Abdulwahed, M. (2022). Development of Digitalization Road Map for Healthcare Facility Management. *IEEE Access*, 10, 14450-14462.
6. Naji, K. K., Gunduz, M., & Naser, A. F. (2022). An Adaptive Neurofuzzy Inference System for the Assessment of Change Order Management Performance in Construction. *Journal of Management in Engineering*, 38(2), 04021098.
7. Ahmad, A. M., Trejo, S. R., Hafeez, M. A., Dawood, N., Kassem, M., & Naji, K. K. (2022). Drivers for energy analysis towards a BIM-enabled information flow. *Smart and Sustainable Built Environment*, (ahead-of-print).
8. Abir, F. F., Alyafei, K., Chowdhury, M. E., Khandakar, A., Ahmed, R., Hossain, M. M., ... & Naji, K. K. (2022). PCovNet: A presymptomatic COVID-19 detection framework using deep learning model using wearables data. *Computers in biology and medicine*, 147, 105682.
9. Naji, K. K., Gunduz, M., & Naser, A. F. (2022). The Effect of Change-Order Management Factors on Construction Project Success: A Structural Equation Modeling Approach. *Journal of Construction Engineering and Management*, 148(9), 04022085.

10. Naji, K. K., Gunduz, M., & Falamarzi, M. H. (2022). Assessment of Construction Project Contractor Selection Success Factors considering Their Interconnections. *KSCE Journal of Civil Engineering*, 26(9), 3677-3690.
11. Alyafei, K., Ahmed, R., Abir, F. F., Chowdhury, M. E., & Naji, K. K. (2022). A comprehensive review of COVID-19 detection techniques: From laboratory systems to wearable devices. *Computers in Biology and Medicine*, 106070.
12. Naji, K. K., Gunduz, M., & Naser, A. F. (2022). Construction change order management project support system utilizing Delphi method. *Journal of Civil Engineering and Management*, 28(7), 564-589.
13. Naji, K. K., Gunduz, M., & Hamaidi, M. F. (2022). Major Factors Affecting Construction Waste Management in Infrastructure Projects Using Structural Equation Model. *Journal of Construction Engineering and Management*, 148(10), 04022101.
14. Rabie M, Irshidat MR, Al-Nuaimi N. Ambient and Heat-Cured Geopolymer Composites: Mix Design Optimization and Life Cycle Assessment. *Sustainability*. 2022; 14(9):4942.
15. Hawileh, R. A., Al Nuaimi, N., Nawaz, W., Abdalla, J. A., & Sohail, M. G. (2022). Flexural and Bond Behavior of Concrete Beams Strengthened with CFRP and Galvanized Steel Mesh Laminates. *Practice Periodical on Structural Design and Construction*, 27(1), 04021068.
16. Eltantawi, I., Alnahhal, W., El Refai, A., Younis, A., Alnuaimi, N., & Kahraman, R. (2022). Bond performance of tensile lap-spliced basalt-FRP reinforcement in high-strength concrete beams. *Composite Structures*, 281, 114987.
17. Sohail, M. G., Al Disi, Z., Zouari, N., Al Nuaimi, N., Kahraman, R., Gencturk, B., ... & Yildirim, Y. (2022). Bio self-healing concrete using MICP by an indigenous *Bacillus cereus* strain isolated from Qatari soil. *Construction and Building Materials*, 328, 126943.
18. Roja, K. L., Aljarrah, M. F., Sirin, O., Al-Nuaimi, N., & Masad, E. (2022). Rheological, Thermal, and Chemical Evaluation of Asphalt Binders Modified Using Crumb Rubber and Warm-Mix Additive. *Journal of Materials in Civil Engineering*, 34(5), 04022049.
19. Sirin, O., Gunduz, M., Shamiyeh, M.E. (2022), "Assessment of Pavement Performance Management Indicators Through Analytic Network Process," *IEEE Transactions on Engineering Management*, Volume 69, Issue 6, pp. 2684 – 2692, <https://doi.org/10.1109/TEM.2019.2952153>

20. Irshidat, M. R., Al-Nuaimi, N., & Rabie, M. (2022). Sustainable alkali-activated binders with municipal solid waste incineration ashes as sand or fly ash replacement. *Journal of Material Cycles and Waste Management*, 24(3), 992-1008.
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22. Hao, R., Lin, W., Al-Nuaimi, N. A., Hawileh, R. A., Abdalla, J. A., & Elshafie, M. Z. (2022). Short-term and long-term behavior of RC beams strengthened by galvanized steel mesh laminate. *Construction and Building Materials*, 340, 127763.
23. Mohsen, M. O., Abdel-Jaber, M. T., Al-Nuaimi, N. A., Senouci, A., & Taha, R. A. (2022). Determination of Surfactant Content for Optimum Strength of Multi-Walled Carbon Nanotube Cementitious Composites. *Sustainability*, 14(19), 12433.
24. Sohail, M. G., Wasee, M., Al Nuaimi, N., Alnahhal, W., & Hassan, M. K. (2022). Behavior of artificially corroded RC beams strengthened with CFRP and hybrid CFRP-GFRP laminates. *Engineering Structures*, 272, 114827.
25. Ebead, U., Lau, D., Lollini, F., Nanni, A., Suraneni, P., & Yu, T. (2022). A review of recent advances in the science and technology of seawater-mixed concrete. *Cement and concrete research*, 152, 106666.
26. Wakjira, T. G., Ibrahim, M., Ebead, U., & Alam, M. S. (2022). Explainable machine learning model and reliability analysis for flexural capacity prediction of RC beams strengthened in flexure with FRCM. *Engineering Structures*, 255, 113903.
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28. Wakjira, T. G., Ebead, U., & Alam, M. S. (2022). Machine learning-based shear capacity prediction and reliability analysis of shear-critical RC beams strengthened with inorganic composites. *Case Studies in Construction Materials*, 16, e01008.
29. Younis, A., El-Sherif, H., & Ebead, U. (2022). Shear strength of recycled-aggregate concrete beams with glass-FRP stirrups. *Composites Part C: Open Access*, 8, 100257.

30. Sbahieh, S., Rabie, M., Ebead, U., & Al-Ghamdi, S. G. (2022). The Mechanical and Environmental Performance of Fiber-Reinforced Polymers in Concrete Structures: Opportunities, Challenges and Future Directions. *Buildings*, 12(9), 1417.
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93. Toriumi, A., Abu-Lebdeh, G., Alhajyaseen, W., Christie, N., Gehlert, T., Mehran, B., ... & Nakamura, H. (2022). A multi-country survey for collecting and analyzing facts related to road traffic safety: legislation, enforcement, and education for safer drivers. *IATSS research*, 46(1), 14-25.
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99. Zhu, H., Han, T., Alhajyaseen, W. K., Iryo-Asano, M., & Nakamura, H. (2022). Can automated driving prevent crashes with distracted Pedestrians? An exploration of motion planning at unsignalized Mid-block crosswalks. *Accident Analysis & Prevention*, 173, 106711.
100. Reinolsmann, N., Alhajyaseen, W. K., & Hussain, Q. (2022). The impact of rural expressway environments: drivers' attention allocation to variable message signs. *International journal of injury control and safety promotion*, 1-11.
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109. Abd Rahman, N., Johari, M. S. M., & Dias, C. (2022). Exploratory study on self-awareness and self-preparedness of Malaysian rail passengers for emergency evacuations. *Transportation Engineering*, 7, 100105.
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113. Tahmasseby, S. (2022). The Implementation of Smart Mobility for Smart Cities: A Case Study in Qatar. *Civil Engineering Journal*, 8(10), 2154-2171.
114. Jaekel, B., & Muley, D. (2022). Transport impacts in Germany and State of Qatar: An assessment during the first wave of COVID-19. *Transportation research interdisciplinary perspectives*, 13, 100540.
115. Ghanim, M. S., Muley, D., & Kharbeche, M. (2022). ANN-Based traffic volume prediction models in response to COVID-19 imposed measures. *Sustainable cities and society*, 81, 103830.

### Top Tier Journals

Table 7: List of Top Tier Journals out of the publications

No.	Journal	Number of publications
1	Structures	3
2	Journal of Engineering Education	1
3	Journal of Management in Engineering	2
4	Computers in biology and medicine	3
5	Journal of Construction Engineering and Management	2
6	Journal of Civil Engineering and Management	1
7	Sustainability	5
8	Composite Structures	5
9	Construction and Building Materials	6
10	<i>Journal of Materials in Civil Engineering</i>	1
11	<i>Engineering Structures</i>	3

12	<i>Cement and concrete research</i>	1
13	Case Studies in Construction Materials	2
14	<i>IEEE Access</i>	1
15	Buildings	2
16	Materials Today Communications	1
17	<i>Powder Technology</i>	1
18	<i>Computers &amp; Geosciences</i>	1
19	<i>Journal of Cleaner Production</i>	1
20	<i>Water Resources Management</i>	1
21	<i>Journal of Natural Gas Science and Engineering</i>	1
22	<i>Renewable Energy</i>	1
23	<i>Membranes</i>	1
24	<i>Energy</i>	1
25	<i>Science of The Total Environment</i>	<b>2</b>
26	<i>Advances in nano research</i>	1
27	<i>Sensors</i>	4
28	<i>Processes</i>	1
29	<i>Polymers</i>	1
30	<i>Sustainable Production and Consumption</i>	1
31	<i>Diagnostics</i>	1
32	<i>Scientific Reports</i>	1
33	<i>Pharmaceutics</i>	1
34	<i>Bioengineering</i>	2
35	<i>Energy Reports</i>	1
36	<i>Journal of Vibration and Control</i>	2
37	<i>Journal of Vibration Engineering &amp; Technologies</i>	1
38	<i>Canadian Geotechnical Journal</i>	1
39	<i>Frontiers in Built Environment</i>	3
40	<i>Neural Computing and Applications</i>	1



41	<i>Data</i>	1
42	<i>Archives of Computational Methods in Engineering</i>	1
43	<i>Applied Sciences</i>	2
44	<i>PLoS one</i>	1
45	<i>Transportation research part F: traffic psychology and behaviour</i>	2
46	<i>Accident Analysis &amp; Prevention</i>	2
47	<i>Journal of Safety Research</i>	1
48	<i>Physica A: Statistical Mechanics and its Applications</i>	1
49	<i>Journal of Transport Geography</i>	1
50	<i>Sustainable cities and society</i>	1
51	<i>Engineering, Construction and Architectural Management</i>	2
52	<i>Transportation Geotechnics</i>	1
53	IEEE Transactions on Engineering Management	1
54	Journal of Environmental Chemical Engineering	1
55	Environmental Technology & Innovation	1
56	Desalination	1
57	Algal Research	1
58	Pharmaceuticals	1
59	<i>Civil Engineering Journal</i>	1
	<i>Total</i>	94

## Second Tier Journals

Table 8: List of Second Tier Journals out of the publications

No.	Journal Name	No of Publications
1	<i>Smart and Sustainable Built Environment</i>	1
2	<i>KSCE Journal of Civil Engineering</i>	1

3	<i>Journal of Engineering Research</i>	1
4	<i>Practice Periodical on Structural Design and Construction</i>	1
5	<i>Journal of Material Cycles and Waste Management</i>	1
6	<i>Energies</i>	1
7	<i>Journal of Transportation Engineering, Part B: Pavements</i>	1
8	<i>IATSS research</i>	3
9	<i>Iranian Journal of Science and Technology, Transactions of Civil Engineering</i>	1
10	<i>International journal of injury control and safety promotion</i>	6
11	<i>Journal of Performance of Constructed Facilities</i>	1
12	<i>Transportation Engineering</i>	1
	<b>Total</b>	<b>19</b>

### Other Journals

Table 9: List of other Journals out of the publications

No.	Journal Name	No of Publications
1	Composites Part C	1
2	<i>Transportation research interdisciplinary perspectives</i>	1
	<b>Total</b>	<b>2</b>

### Conference Publications

1. Ahmad, Tayyab, and Christhina Candido (2022, November). Perceptions of Architecture Degree Students towards Sustainability in Buildings. Proceedings of the 45th Australasian Universities Building Education Association Conference – (AUBEA) 2022, Sydney, Australia, 23-25 November 2022

2. Tayyab Ahmad, Husnain Arshad Qazi, Ajibade Ayodeji Aibinu (2022, November). Construction Engineering and Management: A Review of Australia-based Research. Proceedings of the 45th Australasian Universities Building Education Association Conference – (AUBEA) 2022, Sydney, Australia, 23-25 November 2022
3. Alfahel R., Hafiz, M., Hassan, M. K., Mahmoud, K., Hawari, A. H. (2022) Fabrication of Antifouling Forward Osmosis Membrane Using Ti3C2Tx (MXene), 11th International Membrane Science and Technology Conference, Clayton, Australia, 4-8 December 2022.
4. Hafiz, M., Alfahel, R., Altaee, A., Hawari, A. H. (2022) Evaluating the performance of forward osmosis as a pre-treatment process for multi-stage flash seawater desalination at a pilot scale, 11th International Membrane Science and Technology Conference, Clayton, Australia, 4-8 December 2022.
5. Alfahel R., Hafiz, M., Hassan, M. K., Mahmoud, K., Hawari, A. H. (2022) Fabrication of Antifouling Forward Osmosis Membrane Using Ti3C2Tx (MXene), 11th International Membrane Science and Technology Conference, Clayton, Australia, 4-8 December 2022.
6. Hafiz, M., Alfahel, R., Altaee, A., Hawari, A. H. (2022) Evaluating the performance of forward osmosis as a pre-treatment process for multi-stage flash seawater desalination at a pilot scale, 11th International Membrane Science and Technology Conference, Clayton, Australia, 4-8 December 2022.
7. Hafiz, M., Alfahel, R., Ayari, M., Altaee, A., Hawari, A. H. (2022) Brine Reclamation in Agriculture Industry Using Forward Osmosis Process, 2nd World Conference on Sustainability, Energy and Environment, Berlin, Germany, 8-11 December 2022.
8. Haroon, M., Kharbeche, M., Alhajyaseen, W., Hawari, A. H. (2022) Impact of Speed Hump on Noise Pollution, Australian Transport Research Forum 2022, Adelaide, Australia, 28-30 September 2022.
9. Abouelela, A., Mussa, A., Talhami, M., Das, P., Hawari, A. H. (2022) Cost Effective Treatment of Sludge Using Protic Ionic Liquids: Unlocking the Potential Application of Sludge in Agriculture and Biofuel, Qatar University Annual Research Forum and Exhibition 2022, Doha, Qatar, 3-4 October 2022.
10. Kashem, A., Quadir, M., Das, P., Khan, S., Thaher, M., Nagappan, S., Mahata, C., Alghasal, G., Hawari, A.H., Al-Jabri, H. (2022) Microalgal bioremediation of saline aquaculture wastewater and simultaneous production of biomass, Qatar University Annual Research Forum and Exhibition 2022, Doha, Qatar, 3-4 October 2022.
11. Dias, C., Kharbeche, M., Muley, D., Kashem, A., Fahed, M. A., Iral, S. V., & Abdelfattah, N. (2022). Are Professional Drivers more Aggressive than General Drivers? A Case Study from Doha, Qatar. *Procedia Computer Science*, 201, 16-23. The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal
12. Muley, D., Dias, C., Umlai, A. H., AlArdah, H., Shah, M., Murtaza, M., & Abou-sido, F. (2022). Assessment of turn signal use at two-lane roundabouts in Doha city. *Procedia Computer Science*, 201, 79-86. The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal

13. Salam, S., Muley, D., & Kharbeche, M. (2022). Assessment of School Bus Assistant's Safety Perspective in the State of Qatar. *Procedia Computer Science*, 201, 142-149. The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal
14. Plevris, V. A Brief Introduction to Blockchain Technology and its Applications in Civil Engineering and Construction. 1st International Conference on Advances in Civil & Environmental Engineering, University of Engineering & Technology Taxila, Pakistan, 22 -23 Feb 2022.
15. Plevris, V., Solorzano, G., Bakas, N. P., & Seghier, M. E. A. B. INVESTIGATION OF PERFORMANCE METRICS IN REGRESSION ANALYSIS AND MACHINE LEARNING-BASED PREDICTION MODELS. The 8th European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS Congress 2022 5 – 9 June 2022, Oslo, Norway
16. Solorzano, g., & Plevris, v. Ann-based surrogate model for predicting the lateral load capacity of rc shear walls. The 8th european congress on computational methods in applied sciences and engineering eccomas congress 2022 5–9 june 2022, oslo, norway
17. Kioumarsis, m., Plevris, v., & shabani, a. Vulnerability assessment of cultural heritage structures. The 8th european congress on computational methods in applied sciences and engineering eccomas congress 2022 5 – 9 june 2022, oslo, norway
18. Bakas, N. P., Koutsantonis, D., Plevris, V., Langousis, A., & Chatzichristofis, S. A. (2022, July). Inverse Transform Sampling for Bibliometric Literature Analysis. In 2022 13th International Conference on Information, Intelligence, Systems & Applications (IISA) (pp. 1-7). IEEE.
19. Seghier, m. E. A. B., Plevris, v., & Solorzano, g. Using artificial intelligence techniques for the accurate estimation of the ultimate pure bending of steel circular tubes. The 8th european congress on computational methods in applied sciences and engineering eccomas congress 2022 5 – 9 june 2022, oslo, norway
20. Mamo, W. G., Ross, V., Alhajyaseen, W. K., Reinolsmann, N., & Brijs, K. (2022). A study on the determinants of Ethiopian minibus taxi drivers' speeding behaviour: An application of the 'major theorists' model. *Procedia Computer Science*, 201, 189-196. The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal
21. Samson, C. J., Hussain, Q., & Alhajyaseen, W. K. (2022). Analysis of Stopping Sight Distance (SSD) Parameters: A Review Study. *Procedia Computer Science*, 201, 126-133. The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal
22. Almallah, M., Alhajyaseen, W., Hussain, Q., Mohammad, A., & AlQaradawi, M. (2022). Promoting cycling activities in the State of Qatar: Challenges and potential treatments. *Procedia Computer Science*, 201, 117-125. The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal
23. Dirix, H., Brijs, K., Huysmans, E., Neven, A., Brijs, T., Jongen, E., ... & Ross, V. (2022). Experiences with licensing by autistic drivers: An exploratory study. *Procedia Computer Science*, 201, 330-337. The 13th

- International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal
24. Rillagodage, Y., Mehran, B. and Alhajyaseen, W. (2022) 'A Reliability-based Weather-responsive Variable Speed Limit System for Rural Highways using Connected Vehicle Technology', 14th ITS European Congress, Toulouse, 30 May – 1 June 2022.
  25. Lamprea-Pineda, A, Connolly, D., Hussein, M.F.M., Alves Costa, P., and Woodward, P., Modelling the Critical Speed Amplification Effect on Railway Track-Ground Systems, The Fifth International Conference on Railway Technology: Research, Development and Maintenance, Montpellier, France, 22-25 August 2022.
  26. Shamayleh, H.Y.A. and Hussein, M.F.M., Investigating the effect of preload on the behavior of rail pads for railway tracks under quasi-static and dynamic loads, The 10th International Conference on Wave Mechanics and Vibrations (WMVC), Lisbon, Portugal, 4-6 July 2022.
  27. Douier, K., Hussein, M. F., & Renno, J. (2023). Reconstruction of Road Defects from Dynamic Vehicle Accelerations by Using the Artificial Neural Networks. The 10th International Conference on Wave Mechanics and Vibrations (WMVC), 4-6 July, 2022. Lisbon, Portugal
  28. Douier, K., Hussein, M.F.M., and Renno, J., Periodic road roughness Profile using dynamic vehicle accelerations and Artificial Neural Networks, The 28th International Congress on Sound and Vibration (ICSV), Singapore 24-28 July 2022.
  29. Avci, O., Alkhamis, K., Abdeljaber, O., Hussein, M.F.M., 2022, Operational Modal Analysis and Finite Element Model Updating of a 53-Story Building, the 39th IMAC, A Conference and Exposition on Structural Dynamics, Orlando, Florida, USA, 8-11 February.
  30. Avci, O., Abdeljaber, O., Kiranyaz, S., Hussein, M.F.M., Gabbouj, M., and Inman, D., 2022, A New Benchmark Problem for Structural Damage Detection: Bolt Loosening Tests on a Large-Scale Laboratory Structure, the 39th IMAC, A Conference and Exposition on Structural Dynamics, Orlando, Florida, USA, 8-11 February.
  31. Abushanab, A., & Alnahhal, W. (2022). Characteristics of Concrete Made with Treated Domestic Wastewater. In Proceedings of 2021 4th International Conference on Civil Engineering and Architecture (pp. 231-235). Springer, Singapore.
  32. Shabani, A., Skamantzari, M., Tapinaki, S., Georgopoulos, A., Plevris, V., & Kioumarsis, M. (2022). 3D simulation models for developing digital twins of heritage structures: challenges and strategies. *Procedia Structural Integrity*, 37, 314-320.

## Conferences references in Web of science

**Table 10: List of Top Tier Conferences**

No.	Conference Name	No of Publications
1	<i>13th International Conference on Information, Intelligence, Systems &amp; Applications, Greece 18-20 July 2022</i>	1
2	<i>The 5<sup>th</sup> International Conference on Railway Technology: Research, Development and Maintenance</i>	1
3	<i>Procedia Structural Integrity (ICSI 2021 The 4th International Conference on Structural Integrity)</i>	1
	Total	3

## Conferences references in Scopus

**Table 11: List of Scopus Conferences**

No.	Conference Name	No of Publications
1	<i>The 13th International Conference on Ambient Systems, Networks and Technologies (ANT) March 22-25, 2022, Porto, Portugal</i>	7
2	<i>The 28th International Congress on Sound and Vibration (ICSV)</i>	1
3	<i>14th ITS European Congress, Toulouse, 30 May – 1 June 2022.</i>	1
4	<i>2nd World Conference on Sustainability, Energy and Environment, Berlin, Germany,</i>	1
	Total	10

## Other Conferences

**Table 12: List of other Conferences**

1	The 10th International Conference on Wave Mechanics and Vibrations (WMVC)	2
2	The 39th IMAC, A Conference and Exposition on Structural Dynamics, Orlando, Florida	2
3	<i>4th International Conference on Civil Engineering and Architecture</i>	1
4	<i>1st International Conference on Advances in Civil &amp; Environmental Engineering, University of Engineering &amp; Technology Taxila, Pakistan</i>	1
5	<i>The 8th European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS Congress 2022 5 – 9 June 2022, Oslo, Norway</i>	4
7	45th Australasian Universities Building Education Association Conference	2
8	11th International Membrane Science and Technology Conference	4
9	Australian Transport Research Forum 2022, Adelaide, Australia, 28-30 September 2022.	1
10	Qatar University Annual Research Forum and Exhibition	2
	Total	19

## Book Chapters

Abraham, J., Arro, C., El-Samak, A., **Hawari, A. H.**, Ponnamma, D. (2022) Chapter 9: Biowastes for Ethanol Production, Book: Energy from Waste Production and Storage. CRC Press, Taylor & Francis Group, First Edition.

## Technical Reports Editorials and Essays

### Dr. Riyadh Al Raoush

- Technical Reports on Research Project to Office of Research Support, QU

## Appendix A2- Seminars – Public Lectures – Short Courses

### Seminars and Public Lectures Delivered by Departmental Staff Members Inside Qatar University

#### Dr. Shahram Tahmasseby

- Environmental & Sustainability Achievements within the Al Bustan South Project” (Feb 2022).
- Workshop: Engineering Solutions for FIFA World Cup Qatar 2022 (March 2022).
- Smart City Expo 2022 (March 2022).
- Construction Dewatering in Qatar- Current Practice and New Developments” (May 2022).

#### Dr. Tayyab Ahmad

- EMP 534, Fall 2022, Learning from Case Studies, Anonymous brainstorming sessions - online.
- CVEN 481, Fall 2022, Learning from Case Studies, Anonymous brainstorming sessions - online.

#### Dr. Wael Alhajyaseen

- Road Safety Behavioural Studies and The Application of Advanced Simulation Technologies, Presenter and Moderator, 18 Jan 2022, online.

### Seminars and Public Lectures Delivered by Departmental Staff Members Outside Qatar University

#### Dr. Alaa Al-Hawari

- Presented a lecture for the Program of Engineer of the Future at the National Service Academy. 31st of January.

Guest in TV program, Qatar TV, 13<sup>th</sup> of Mar. 2022. Discussed the contribution of the department in Qatar International Agricultural and Environmental Exhibition 2022.

**Dr. Murat Gunduz**

- Value engineering training to ASHGHAL engineers (17-19 May 2022)

**Dr. Wael Alhajyaseen**

- Transportation Management and Operation during Mega Events: Lessons from Beijing 2022 Winter Olympics, International workshop, April 21, 2022, online, Moderator of the event.

**Seminars and Public Lectures Delivered by Visiting Academics and Professionals****Dr. Wael Alhajyaseen**

- Workshop on Crowd Management, , 16 October 2022, organized by TASMU Innovation Lab, Ministry of Communications and Information Technology, Doha Qatar.

**Invited Public Lectures/Keynote Speakers****Dr. Vagelis Plevriss**

- Invited keynote lecture at the 1st International Conference on Advances in Civil & Environmental Engineering (1st ICACEE-2022), University of Engineering & Technology Taxila, Pakistan, 22-23 February 2022. Title of lecture: "A Brief Introduction to Blockchain Technology and its Applications in Civil Engineering and Construction" (online).

**Dr. Wael Alhajyaseen**

- Advance Application of Simulation Tools in Road Safety, December 5<sup>th</sup> 2022, Nagoya University, Japan.

## Appendix-A3-Faculty-Activities

**Teaching and learning****Dr. Usama Ebead:**

- CVEN 320, Design of Reinforced Concrete Members - Fall 2022. The course was taught in a mixed mode, PBL (60% and LBL 40%).

**Dr. Riyadh Al Raoush**

- EEMP 607, SP2022, Flipped classroom.

**Dr. Arslan Ayari**

- CVEN350, Environmental Engineering Course Problem Based Learning



### **Dr. Wael Alhajyaseen**

- CVEN 661 Geometric Design of Highways, Spring 2022, Independent Learning
- CVEN 661 Geometric Design of Highways, Spring 2022, Project Based Learning

### **Dr. Deepti Muley**

- CVEN360 – Spring – 2022 – Guest lecture from industry expert, short report, use of Civil 3D software for lab project.
- CVEN461 – Fall – 2022 – Field study-based assignments, exposure to SYNCHRO software, real data-based lab project.

### **Eng. Nasser Al Jurf**

- GENG 107: Engineering Skills and Ethics (Fall 2022): the philosophy was based on linking their course knowledge to real life cases and real-life applications. For examples, explained the sustainable development goals SDGs and the importance on tackling these goals to solve global issues, discussed Boeing 737-max case, explaining the unethical behavior from Boeing company in rushing out the production with lack of proper explanation on the changes happened to the plane. Discussed James Web Telescope and the advancement of material engineering to achieve their goal.
- GENG 111: Engineering Graphics (Fall 2022): the teaching philosophy was based on active learning, where Eng. Al Jurf taught theoretical lessons using animated easy to understand slides, involved the student during the theoretical session through given examples, and provided hands-on practice questions to strengthen the theoretical knowledge and strengthen their hand/CAD skills.

### **Eng. Khalid Rabie**

Traffic Engineering (CVEN 461), Fall 2022. Field studies. The students were requested to collect data from the field for different intersections and sites in Doha Qatar. Students analyzed the data, modelled it, and wrote academic reports about their findings.

### **Consultancy**

#### **Dr. Alaa Al-Hawari**

- Review of Environmental Impact Assessment Reports for the Ministry of Environment and Global Warming, December 2022.

### **Professional Service**

#### **Dr. Mohammed Hussein:**

- Chair of organizing committee, the International Conference on Civil Infrastructure and Construction (CIC 2023), April 2022-February 2023.
- Member of the Editorial Board for Transportation Geotechnics Journal, March 2021- current.

#### **Dr. Murat Gunduz:**

- Associate Editor, ASCE Journal of Management in Engineering.

**Dr. Vagelis Plevris:**

- Appointed ACI (American Concrete Institute) Certification Committee member in Qatar (1st December 2021), responsible for Advanced Construction Technology Services W.L.L. ACTS Qatar.

**Dr. Riyadh Alraoush**

- External Examiner of MSc thesis
- Reviewer to several journals.

**Dr. Wael Alhajyaseen**

- Associate Editor of Case Studies on Transport Policy, Elsevier since Feb 2022.
- Chair of the Special Interest Group C4 "Traffic Safety Analysis and Policy", World Conference on Transport Research Society WCTRS.
- Appointed as member of the Advisory Committee of "Traffic and Security Cooperative Management and Control System in the Winter Olympic Games, Beijing, China Jan 12 2022 to 1<sup>st</sup> Sep 2022.

**Dr. Charitha Dias**

- Academic Editor/ Editorial board member, PLOS ONE Journal, From Oct 2022. Guest Editor, Sustainability journal MDPI, [https://www.mdpi.com/journal/sustainability/special\\_issues/G9QZZQB0U5](https://www.mdpi.com/journal/sustainability/special_issues/G9QZZQB0U5)

**Awards and Achievements****Dr. Mohammed Hussein**

- Listed among the top 2% highly cited scientists for 2022.

**Dr. Riyadh Al Raoush**

- Top 2% of most cited researchers in 2022; According to a study published by Stanford University

**Dr. Wael Alhajyaseen**

- Best Poster Award for the category of Faculty & Postdocs in Qatar University Annual Research Forum, 3rd of October 2022.
- Best Poster Award for the category of FIFA World Cup 2022 Contribution in Qatar University Annual Research Forum, 3rd of October 2022.

**Dr. Charitha Dias**

- Best Poster Award for the category of FIFA World Cup 2022 Contribution in Qatar University Annual Research Forum, 3rd of October 2022.
- Best Poster Award in Social Sciences and Humanities discipline for Graduate Students category at Qatar University Annual Research Forum, 3rd of October 2022.

## Conferences Attended:

### Dr. Mohammed Hussein:

- The 10th International Conference on Wave Mechanics and Vibrations (WMVC), Lisbon, Portugal, 4-6 July 2022.

### Dr. Vagelis Plevris:

- Attended several scientific conferences in 2022, for details, see the published conference papers above.

### Dr. Wael Alhajyaseen

- The World Conference on Transport Research Society (WCTRS) Virtual Meet, 24-29 July 2022.

## Workshop, Training, and Visits Attended

### Dr. Mohammed Hussein:

- Musaimeer Pump station and outfall project – Design Construction and Operation, CAE Workshop, 26 October 2022, Qatar University.
- Accelerated Bridge Construction and Innovative Seismic Resilient Technologies, CAE Workshop, 24 October 2022, Qatar University.
- Management of review of designs, Lecture organized online by Qatar Society of Engineers, 14 June 2022.
- Construction Dewatering in Qatar- Current Practice and New Developments, CAE Workshop, 24 May 2022, Qatar University.
- Recycled materials in pavement engineering: fundamental research and collaboration with the industry, CAE Workshop, 11 May 2022, Qatar University.
- RICS: Membership Advantages, CAE Workshop, 13 April 2022, Qatar University.
- Thoughts of Architectural Engineer, Lecture organized online by Qatar Society of Engineers, 15 March 2022.
- Moving past sticks and bricks with Construction 4.0, CAE Workshop, 2 March 2022, Qatar University.
- Environmental & Sustainability Achievements within the Al Bustan South Project, CAE Workshop, 16 February 2022, Qatar University.
- Training, from a hall to a screen, Lecture organized online by Qatar Society of Engineers, 24 January 2022.

### Dr. Murat Gunduz:

- Workshop: Environmental & Sustainability Achievements within the Al Bustan South Project (17-02-2022)
- Workshop: Moving past sticks and bricks with Construction 4.0 (02-03-2022)
- Artificial Intelligence Week (14-16 March 2022)
- Construction Dewatering In Qatar- Current Practice and New Developments (25-05-2022)

### Dr. Vagelis Plevris:

- Attended the Course “8th Online e-learning seminar for university professors”, Catholic University of Ávila, Ávila, Spain, 19-23 September 2022 (online).

- “Musameer Pump station and outfall project – Design Construction and Operation”. Speaker: Eng. Gary Peach (Mott MacDonald-Qatar). Date and time: Wednesday, 26 October 2022, 6:00 pm - 7:00 pm (online)
- “College of Engineering - On line introductory session (ISNSC) + (SCC)” from the Inclusion and special needs support center (ISNSC) and the Student counseling center (SCC) of Qatar University. Monday, September 19, 2022, 12:30 PM-1:30 PM (online)

#### **Dr. Wael Alhajyaseen**

- Delivered series of training sessions as part of the workforce training program entitled “FIFA World Cup Qatar 202: Crowd Management at Sporting Events”, on August 24th and September 14th and October 5th and 24th, organized by Supreme Committee for Delivery & Legacy, Qatar.
- Scientific Visit under project “M-QJRC-2020-8”, Nagoya University, Japan, Nov 22nd to Dec 21st 2022.

#### **Dr. Charitha Dias**

- Visiting Researcher, Kochi University of Technology, Kochi, Japan. From 22 Nov 2022 to 18 Dec 2022.

#### **Eng. Khalid Rabie**

- Predicting Geotechnical Capacity of Drilled Shafts in Bedrock, Are We Close? January 27, 2022, The Virtual Seminars, Canada
- Environmental & Sustainability Achievements within the Al Bustan South Project, February 16, 2022, Qatar
- ABET Essentials: Criteria, and Reviewing Processes Workshop, March 21, 2022, Qatar
- Probabilistic data-driven framework for performance assessment of retaining walls against rockfalls, April 27, 2022, The Virtual Seminars, Canada
- Construction Dewatering in Practice – Qatar Experience, May 24, 2022, Qatar.
- A Novel Data-Driven Approach To Estimate Rock Permeability and Develop Guidelines For Design of Dewatering systems, May 24, 2022, Qatar.
- Geosynthetic Reinforced Soil (GRS) Slopes and Earth Retaining Structures, July 27, 2022, The Virtual Seminars, Canada
- Is there a role of teacher wellbeing in the way they teach?, October 18, 2022, CETL, Qatar

### **Events Organized**

#### **Dr. Mohammed Hussein**

- Organized program of engineer of the future for students at the national service academy from 30 January to 3 February 2022.

**Dr. Okan Sirin**

- Organized the First Civil Engineering Football Tournament, March 31, 2022, Qatar University Sports Complex.

**Dr. Vagelis Plevris:**

- Mini-symposium “Parallel Computing” (S10), at the 24th International Conference on Computer Methods in Mechanics and the 42nd Solid Mechanics Conference (CMM 2022 & SolMech 2022), Świnoujście, Poland, 5 - 8 September 2022.
- Mini-symposium “Computational intelligence techniques and applications in civil engineering” (MS78), at the 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2022), Oslo, Norway, 5 - 9 June 2022.
- Mini-symposium “Modeling and simulation of concrete structures: recent advances” (MS76), at the 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2022), Oslo, Norway, 5 - 9 June 2022.

**Dr. Murat Gunduz**

- CIC 2023 Conference

**Dr. Arslan Ayari**

- CIC2023 technical committee

**Dr. Wael Alhajyaseen**

- International Workshop with Nagoya University, (Graduate Program for Lifestyle Revolution based on Transdisciplinary Mobility Innovation), with title “Road Safety Behavioural Studies and The Application of Advanced Simulation Technologies”, 18 Jan 2022, Presenter and Moderator.
- International Workshop, “Transportation Management and Operation during Mega Events: Lessons from Beijing 2022 Winter Olympics”, April 21, 2022, online.
- WCTRS Virtual Event, 25th -29th July 2022, two online sessions entitled “Road Safety Analysis using Advanced Simulation Tools”, Organizer and presenter.

**Eng. Khalid Rabie**

- 9<sup>th</sup> High School Wooden Bridge Competition, March 22, 2022, Organization committee.

**Community Service****Dr. Mohammed Hussein**

Member of technical committee of Qatar Rail and Qatar University’s noise and vibration, May 2021-current

**Eng. Nasser Al Jurf**

- Meqdam Winter Camp, presenting environmental experiments.

### Dr. Charitha Dias

- Committee member, The scientific committee of the Pedestrian and Evacuation Dynamics Conference (PED 2023), June 28th-30th 2023, TU/Eindhoven, The Netherlands, <https://ped23.phys.tue.nl/scientific-committee/>

### Students' Activities

#### Dr. Riyadh Al-Raoush

- 14<sup>th</sup> annual undergraduate research experience program competition, 18th of October 2022  
Research title: "Bioremediation of petroleum hydrocarbon-contaminated soil and groundwater in coastal areas of Qatar" Students participated in the competition: Mhd. Taisir Albaba, and Abdulrahman Hafez

### Site visits organized for students:

#### Dr. Vagelis Plevris:

- Visit to a residential building under construction (concrete structure) with the students doing the Senior Design Project 1, CVEN 401 Date of visit: 3 March 2022. Photos from the visit are available here: <https://tinyurl.com/sitevisit20220303>
- Visit to a warehouse building (steel structure) with the students doing the Senior Design Project 2, CVEN 402. Date of visit: 30 September 2022. Photos from the visit are available here: <https://tinyurl.com/sitevisit20220930>

### Other Activities:

#### Dr. Vagelis Plevris:

- Member of the PhD examination committee of the PhD Thesis of Mr. Tadesse G. Wakjira, entitled "**Application of Steel Reinforced Composites for Strengthening of Reinforced Concrete Beams and Columns: Experimental, Analytical, Numerical, and Machine Learning Based Studies**".

Organization of special issues and research topics in scientific journals:

- Special issue (Research topic) "Earthquake performance of buildings with structural irregularities. Current practice and required developments for their resilient seismic design" (2022), Journal: **Frontiers in Built Environment**, by Frontiers. Topic Editors: A. Tena-Colunga, E.A. Godínez-Domínguez, H. Varum, V. Plevris.
- Special issue (Research topic) "Horizons in Built Environment 2022" (2022), Journal: **Frontiers in Built Environment**, by Frontiers. Topic Editors: I. Takewaki, S. Azhar, V. Plevris, J. R. Casas, Z. Tao, H. B. Awbi, G. Tsiatas, B. Zanuttigh, J. Han, G. A. Kopp.
- Special issue (Research topic) "Insights in Computational Methods in Structural Engineering: 2022" (2022), Journal: **Frontiers in Built Environment** – Computational Methods in Structural Engineering, by Frontiers. Topic Editors: V. Plevris and G. Tsiatas.

### ❖ Overview of Site Development Plans Requirements

Dr. Mohammad Shareef Ghanim, Transportation Engineering Expert, from Ministry of Transport-Land Transport Planning Department, delivered a presentation titled: Overview of Site Development Plans Requirements on 25th April 2022.



*Figure 15 – Overview of Site Development Plans Requirements 25th April 2022*

❖ **Environmental Impact Assessments**

Dr. Dila Ersenkhal from Mott Macdonald presenting to the students about Environmental Impact Assessments in Class of Selected topics in Environmental Engineering on 5<sup>th</sup> April 2022.



*Figure 16 –Environmental Impact Assessments in Class of Selected topics in Environmental Engineering on 5th April 2022*

❖ **PPPs (Public Private Partnerships)**

Eng Rameshbabu Settypalli from Mott Macdonald company presenting to the students about PPPs (Public Private Partnerships) on 19<sup>th</sup> April 2022.



*Figure 17 – PPPs (Public Private Partnerships) on 19th April 2022*

❖ **Musameer Pumping Station and Outfall (MPSO) Project**

Mr. Gary Peach Delivered a presentation on Musameer Pumping Station and Outfall (MPSO) Project with an overview of all aspects for management on March 29, 2022.



Figure 18 –MPSO Project with an overview of all aspects for management on March 29, 2022

❖ **Important topics in civil engineering**

Three lectures on "Important topics in civil engineering", that took place on Tuesday Feb 1 Titled: (friction), 2022, Feb 3 2022 Titled (Centroids Moments of Inertia) and on Feb 10 2022 Titled: (Moments of inertia), for course CVEN 213.



Figure 19 – Three lectures on "Important topics in civil engineering" by Dr. Vagelis Plevris 1<sup>st</sup>, 3<sup>rd</sup>, 10<sup>th</sup> February 2022



## ❖ Construction Dewatering In Qatar- Current Practice and New Developments

The Civil & Architectural Engineering Department at Qatar University organized a Workshop Titled: “Construction Dewatering in Qatar- Current Practice and New Developments” on Tuesday, May 24, 2022 (from 7:00 PM to 9:00 PM), 70 People attended the workshop.

**College of Engineering**  
جامعة قطر  
Qatar Foundation

**HYDROSERV INTERNATIONAL**

**FUGRO**

**UNIVERSITY OF EDUCATION**  
جامعة التعليم

### CONSTRUCTION DEWATERING IN QATAR- CURRENT PRACTICE AND NEW DEVELOPMENTS

Day: Tuesday  
24, May 2022

Time: 07:00pm - 09:00pm.

Venue: Qatar University  
Building H10 Auditorium

**SPEAKERS**

**PROF. HISHAM EID**  
Professor of Civil Engineering,  
Qatar University

**DR. MOHAMMED ELSHAFIE**  
Associate Professor of Civil  
Engineering  
Qatar University

**MR. BARRY O'SULLIVAN**  
Engineering Director of  
HYDROSERV International  
Doha, Qatar

**ABSTRACT:**

Construction dewatering is an essential activity required for many building and infrastructure projects in Qatar. The performance of such activity mainly depends on the suitability of the dewatering system to the existing hydrogeological conditions and the accuracy of estimating the permeability of the material to be dewatered. In case of rock masses, permeability is difficult to be identified from conventional site investigation works. Accordingly, the observation (trial and error) method is typically used for design of these systems. Such practice could have significant financial and environmental effects.

This workshop presents the results of a recent investigation\* that seized the unique opportunity of acquiring the most extensive data base ever available on the permeability of randomly fractured rock and the associated performance of dewatering systems. The data have been provided by two major international firms working in Qatar, and used by the presenters to develop a novel and efficient approach for estimating the permeability of randomly fractured rock masses. Consequently, a major modification is suggested for the guidelines currently used in practice for choosing and designing dewatering systems in rock.

\*Funded through NRP# 125-0314-180366

**SESSION 1: CONSTRUCTION DEWATERING IN PRACTICE – QATAR EXPERIENCE**  
Speaker: Barry O'Sullivan

**SESSION 2: A NOVEL DATA-DRIVEN APPROACH TO ESTIMATE ROCK PERMEABILITY AND DEVELOP GUIDELINES FOR DESIGN OF DEWATERING SYSTEMS**  
Speaker: Prof. Hisham Eid & Dr. Mohammed Elshafie

SCAN FOR REGISTRATION

NOTE: Confirmation emails along with location and parking details will be sent upon registration.

Figure 20 – Construction Dewatering In Qatar- Current Practice and New Developments May 24, 2022

## Events Organized:

### CENG’s Recognition and Networking Day:

The recognition and networking event was organized by the College of Engineering on Tuesday, May 24, 2022. The event contained a career fair for engineering students where they had excellent opportunity to interact with potential employers.



Figure 21 – CENG’s Recognition and Networking Day May 24, 2022

**Other event co-organization:  
Media Appearance:**

The Department had several appearance in the media including 7 articles in the newspaper: Alraya, 4 March 2022; Al-Watan, 14 April 2022; Lusail, 16 March 2022; Alarab, 28 April 2022; Alwatan, 28 April 2022; Alraya, 28 April 2022; Dr. Alaa AlHawari, guest in TV program Qatar TV, 13 of March 2022.



Figure 22 – Alraya- 4 March 2022 & Al-Watan- 14 April 2022



Figure 23 – Lusail- 16 March 2022

# عبر زيارات ميدانية شملت 6 «برامج تطوير» في 3 مناطق «أشغال» تطلع طلاب الهندسة على مشاريع «العقود المحسنة»

الدوحة - العرب



نظمت هيئة الأشغال العامة «أشغال» زيارات ميدانية لـ (73) من طلاب وطالبات الهندسة المدنية والهندسة الصناعية بجامعة قطر لتعريفهم بمبادئ التنفيذ الفعال (Lean Construction) بمشاريع العقود المحسنة.

ونأتي هذه المشاريع ضمن برنامج تطوير البنية التحتية للمناطق تحت إدارة مشروعات الطرق، في ظل استراتيجية الإدارة للتخصيص لعام 2022. وتهدف الزيارات الميدانية إلى توسيع معرفة وخبرة الطلاب والطالبات وإطلاعهم على الجانب العملي لفهم تخصصاتهم عن قرب وتعريفهم بمشاريع إدارة مشروعات الطرق وتوفر «أشغال» فرصة حقيقية لمشاهدة الممارسة الجيدة لتنفيذ وتطبيق مبادئ التنفيذ الفعال، سعياً لنشر ثقافة عمل أكثر فاعلية والمساهمة في إعداد مهندسي المستقبل.

وقال المهندس سعود التميمي، مدير إدارة مشروعات الطرق في «أشغال» «نسعى إلى تشكيل حلقة وصل بين التكوين النظري والعملي، وتوفير كافة الفرص الممكنة للكفاءات الصاعدة لتطوير مهاراتهم والعمل مع أفضل الخبرات المحلية وأضاف أن المهندسين الجدد يتلقون اهتماماً خاصاً في «أشغال» حيث يوفر لهم حجم الأعمال والتنوع والعدد الكبير للمشاريع فرصة كبيرة

التحذية في شمال وشرق الخبيسة (الحرمة الثانية)، وتطوير الطرق والبنية التحتية في الخريبطات وإزغوى (الحرمة الثالثة)، والطرق والبنية التحتية غرب اشاف (الحرمة التاسعة)، وطريق الاحفالات (الحرمة الثانية)، وتطوير الطرق والبنية التحتية في شرق الموجبة (الحرمة الثالثة)، وأشار المهندس محمد يوسف السبيعي، مدرس مساعد في كلية الهندسة بجامعة قطر، الذي صاحب المجموعة الأولى من الطلبة خلال زيارتهم الميدانية لأحدى مشاريع تطوير البنية التحتية، إلى أن الزيارات الميدانية سمحت للطلاب استكشاف الجانب التطبيقي الذي يشكل تطبيق «أشغال» للتحديات عمل متطورة وخبرات مختلفة، إلى جانب مبادئ التنفيذ الفعال لضمان إنجاز المشاريع بكفاءة عالية وبشكل يحافظ على الطبيعة والبيئة.

وأعربت الدانة العاتق، طالبة بكلية الهندسة بجامعة قطر، عن شكرها لفرق العمل في «أشغال» لإتاحة الفرصة للزيارة الميدانية، وقالت: «تمثل الزيارة إضافة رائعة إلى مجال دراستي فختلني من تعزيز فهمي وتوسيع قاعدة معرفتي. وأضافت: «من خلال زيارتي مركز متابعة أداء المشروع الفعّال، استلذت أن أرى مستوى التخطيط المسبق والإسرا تيجيات التي وضعت للتنفيذ.

المروية وتقنية الحجر النقلي العميق والخرسانة المدفئة. كما تم شرح وتعريف مبادئ التنفيذ الفعال التي يتم تطبيقها في مشاريع العقود المحسنة لبرنامج تطوير البنية التحتية للمناطق واهمية تنفيذها من خلال عرض تقديمي في مواقع العمل الخاصة بكل مشروع تلاه جولة استطلاعية لأعمال التطوير في المشروع. وضمت المشاريع التي زارها الطلاب مشروع تطوير الطرق والبنية التحتية في الجب والعيبب (الحرمة الثانية)، وتطوير الطرق والبنية

للطلاب للحصول على خبرة عملية وميدانية من خلال التدريب العملي والزيارات الميدانية التي قد لا تتوفر لهم في مكان آخر. لافتاً إلى أن «أشغال» تسعى لإطلاع الطلاب على آخر تطورات ومستجدات مجال التشييد والبناء لاسيما مبادئ التنفيذ الفعال. وامتدت الزيارات الميدانية لـ 6 أيام تم خلالها زيارة 6 مشاريع من برنامج تطوير البنية التحتية في المناطق الغربية والشمالية والجنوبية. وقد تمت مناقشة مواضيع مختلفة في كل مشروع من المشاريع مثل أعمال الأسفلت والتحويلات

Figure 24 – Alarab 28 April 2022

عبر تنظيم زيارات ميدانية لهم إلى المشاريع

## «أشغال» تدرب طلاب «الهندسة»



نظمت هيئة الأشغال العامة «أشغال» زيارات ميدانية لـ (73) من طلاب وطالبات الهندسة المدنية والهندسة الصناعية بجامعة قطر لتعريفهم بمبادئ التنفيذ الفعال (Lean Construction) بمشاريع العقود المحسنة. وذلك في ظل استراتيجية الإدارة للتخصيص لعام 2022

اطلا عهم على الجانب العملي لفهم تخصصاتهم عن قرب

تدربهم على مبادئ التنفيذ الفعال في مشاريع برنامج تطوير البنية التحتية

### م. التميمي: إعداد الأجيال القادمة مسؤولية مشتركة لكل عناصر المجتمع

البنية التحتية، من أن الفرصة التي تحصل عليها الطلاب وإعدادات جيوتقنية مستدامة، من خلال مشاريع تطوير البنية التحتية للمناطق واهمية تنفيذها من خلال عرض تقديمي في مواقع العمل الخاصة بكل مشروع تلاه جولة استطلاعية لأعمال التطوير في المشروع. وضمت المشاريع التي زارها الطلاب مشروع تطوير الطرق والبنية التحتية في الجب والعيبب (الحرمة الثانية)، وتطوير الطرق والبنية

برنامج تطوير البنية التحتية للمناطق في المناطق الغربية والشمالية والجنوبية، وقد تمت مناقشة مواضيع مختلفة في كل مشروع من المشاريع مثل أعمال الأسفلت والتحويلات التي قد لا تتوفر لهم في مكان آخر. لافتاً إلى أن «أشغال» تسعى لإطلاع الطلاب على آخر تطورات ومستجدات مجال التشييد والبناء لاسيما مبادئ التنفيذ الفعال. وامتدت الزيارات الميدانية لـ 6 أيام تم خلالها زيارة 6 مشاريع من برنامج تطوير البنية التحتية في المناطق الغربية والشمالية والجنوبية. وقد تمت مناقشة مواضيع مختلفة في كل مشروع من المشاريع مثل أعمال الأسفلت والتحويلات

Figure 25 – Alwatan 28 April 2022

## زيارات ميدانية لطلاب الهندسة بمشروعات أشغال

طالب كلية الهندسة بجامعة قطر، من شكرها وامتنانها لمبرمج العمل في «أشغال» لإتاحة الفرصة لعمل الزيارة الميدانية لمشروع حي، قائلة: «تمثلت الزيارة إضافة رائعة إلى مجال دراستي فكتسبت من معرفتي، وأضفت: «من خلال زيارة مركز متابعة أداء المجموعة الأولى من الطلبة خلال زيارتهم الميدانية لأحد مشاريع تطوير البنية التحتية، إلى أن الفرصة التي حصل عليها الطلاب والمهندسين سمحت لهم باستكشاف الجانب التطبيقي الذي يتكفل دراستهم للمجانب التطري، والاطلاع على كيفية تطبيق «أشغال» لتقنيات عمل متطورة وخبرات مختلفة، إلى جانب مبادئ التنفيذ الفعال لضمان إنجاز المشاريع بكفاءة عالية وبشكل يحافظ على الطبيعة والبيئة، ويعزز التنمية البيئية، والإحصاءات والكميات».



المهندس محمد السبيعي



المهندس سعود التميمي

كما تم شرح وتعرف مبادئ التنفيذ الفعال التي يتم تطبيقها في مشاريع العقود الهندسية للمناطق وأهمية تنفيذها في مواقع العمل الخاصة بكل مشروع تلاه جولة استطلاعية لأعمال التطوير في المشروع، وضمت للمشروع قتي زارها الطلاب مشروع تطوير الطرق والبنية التحتية في شمال شرق الجزيرة الحزمية

من الأنشطة التي تستهدف طلاب الجامعة إلى إطلاعهم على آخر تطورات ومستجدات مجال التشييد والبناء لا سيما مبادئ التنفيذ الفعال والتعميم أن المهندسين الجدد يكون اهتماماً خاصاً في «أشغال» حيث يوفر لهم حجم الأعمال والتنوع وعدد كبير للمشاريع فرصة كبيرة للطلاب للحصول على خبرة عملية وميدانية من خلال التدريب العملي والزيارات الميدانية التي قد لا تتوفر لهم في مكان آخر، كما تسمى «أشغال» من خلال العديد

الدوحة: الأولى: شملت هيئة الأشغال العامة «أشغال» زيارات ميدانية لـ 73 من طلاب ومهندسات الهندسة المدنية والهندسة الصناعية بجامعة قطر لتزويهم على مبادئ التنفيذ الفعال التي يتم تطبيقها في مشاريع التطوير الهندسية للمناطق تحت إدارة مشروعات الطرق، وذلك في ظل استراتيجية الإدارة للتميز لعام 2022. ومن خلال هذه الزيارات الميدانية التي تهدف إلى توسيع معرفتهم وخبرتهم الطلاب والمهندسين المتدربين على الجانب العملي لهم تخصصاتهم من قرب وتحريفهم بمشاريع إدارة مشروعات الطرق، توفر «أشغال» فرصة حقيقية لمشاهدة الممارسات الحية لتنفيذ وتطبيق مبادئ التنفيذ الفعال، حيث تسمى من خلالها إلى نشر ثقافة عمل أكثر

Figure 26 – Alraya 28 April 2022



Figure 27 – Dr. Alaa AlHawari, guest in TV program Qatar TV, 13 of Mar. 2022

# Appendix-A4-Students Activities

## ❖ Engineer of the future Program

A program organized by the College of Engineering at Qatar University and the National Student Service Academy from January 30 to February 3, 2022. The program aims to introduce the fields of engineering in general and civil engineering in particular, and motivate students to consider engineering as a field of study in the future to contribute effectively to building the renaissance of Qatar.



Figure 28 – Engineer of the future Program from January 30 to February 3, 2022

### 9th Wooden Bridge Competition 2021:

The Department of Civil and Architectural Engineering organized the 9th High School Wooden Bridge Competition (HSWBC) to motivate students to join the field of engineering in general and civil engineering in particular. Teams of high school students constructed bridge models using sticks and glue as per the instructions and guidelines provided by the faculty and staff during their visit to the school as part of the outreach program. The competition aims to equip secondary school students with the main skills of civil engineering and to enable them to test, design and build small bridges of different usages. On the final day of the competition, loads were applied at the center of each bridge to measure how much load each bridge can withstand. The team with the largest load Carrying Capacity Bridge would win the first place. twenty-one Independent High Schools participated in the competition.



Figure 29 – Wooden Bridge Competition 2021

The Winners in the 9th Wooden Bridge Competition 2021:

SR.NO	School Name	Position
1	Qatar Banking Studies & Business Administration Secondary School	1 <sup>st</sup> Place
2	Ibn Taymiyyah Secondary School	2 <sup>nd</sup> Place
3	Mohammed bin Abdulaziz Al Mana Secondary School	3 <sup>rd</sup> Place

**Spaghetti-Marshmallow Tower Competition 2022:**

The Spaghetti-Marshmallow Tower Competition” organized by the Department of Civil and Architectural Engineering at Qatar University on Tuesday: March 22, 2022, at Ibn Khaldoun Hall, in this Competition, students need to build the highest possible tower using two bags of spaghetti and three bags of marshmallow during the 7th HSWBC 2022. There were three teams Each team composed of three members. The winning team awarded vouchers with a value of 2000 QR.



Figure 30– Spaghetti-Marshmallow Tower Competition 2022

### Senior Design Poster Competition Spring 2022:

The Senior Design –II spring 2022, Contest was held on the 18th of April 2022. Five groups participated in this competition. Students presented their projects to the Jury members as well as to internal and external examiners. Here are the details of the winners:

Position	Student ID	Student Name	Primary Instructor	Project
<b>1st</b>	1	201704358	Moumen Sarikozal	Qatar University Auditorium
	2	201701803	Talha Mohammed	
	3	201707933	Ahmed Abounahia	
	4	201709557	Mohammed Al lulu	
	5	201517621	Saad Ayed Alhamad	
<b>2nd</b>	1	201704030	Abdulrahman Al-Hajri	Design of a Landfill for Municipal Waste generated from Umm Salal-Muhamed
	2	201701551	Khalid Hendi	
	3	201802513	Mansour AlNaimi	
	4	201517950	Khalifa AL-Sulaiti	
<b>3rd</b>	1	201509936	Faisal ALNaimi	Last mile connectivity by Active and Micro-mobility Transportation Modes to Qatar University
	2	201707600	Ismail Elias	
	3	201609079	Ghanim altamimi	
	4	201105028	Mohammed AlMahsin	
	5	201403786	Ali Al-Kuwari	

Figure 31– Senior Design –II Poster Competition Spring 2022 Winners





Figure 32 – Poster Competition Spring 2022

### Senior Design –II Contest Spring 2022:

The Senior Design –II Spring 2022 Contest was held on the 20th of April 2022. seven groups participated in this competition. Students presented their projects to the Jury members as well as to internal and external examiners. Here are the details of the winners:

SDP –II Contest Winner Details

Top Three Positions (SDP-II, Spring 2022)				
Positions	Student ID	Students name	Project Title	Supervisors
1st	1	201702990 Abdulrahaman Doleh	Analysis and Design of a large-scale civil engineering structure	Dr Vagelis Plevris
	2	201704376 Tarik Abouselo		
	3	201701601 Tarek Sabahie		
	4	201708750 Anas Gavoci		
2nd	1	201703076 Mahmoud Mohammed	Alternative Design for the College of Engineering at Qatar University.	Dr. Wael Alnahhal
	2	201705105 Omar Elbehiry		
	3	201708369 Badran Mansour		
	4	201803048 Omar Ibrahim		
3rd	1	201704320 Karim Ibrahim		

2	201603887	Hassan Aldaname	Analysis and Design of High Rise Building Municipal Waste generated from Al-Keesah	Dr. Mohammed Salem Al-Ansari
3	201800432	Firas abousido		
4	201800848	Amr Elsherif		

Figure 33 – Senior Design –II Contest Spring 2022 Winners



Figure 34 – Senior Design –II Contest Spring 2022

### Field Trips, Social and Extra-Curricular Events

A site visit to Doha North Sewage Wastewater Treatment Plant was organized for male and female students. A total of 16 female students attended on the 24<sup>th</sup> of March-2022, and a total of 8 male students attended on the 31<sup>st</sup> of March-2022.



Figure 35 – site visit to Doha North Sewage Wastewater Treatment Plant March-2022

A site visit to Ashghal PWA-RPD Enhanced Projects was organized on the 30/31-March-2022.



Figure 36 – site visit to Ashghal PWA-RPD Enhanced Projects 30/31-March-2022

### Squash Tournament 2022:

Qatar University (QU) Squash Tournament 2022 took place on 29 and 30 March 2022. This event was held at QU Sports Complex (A-07). Both students and faculty from QU participated in the event. There were 12 participants in total. Eng. Shekaib from Civil Engineering Department also participated in the competition and won first place.



*Figure 37 – Squash Tournament 29/30 March 2022*

### **Football Tournament 2022:**

The First Civil Engineering Football Tournament was organized on March 31, 2022, at the Sports Complex by the ASCE (American Society of Civil Engineers) and ICE (Institution of Civil Engineers) student chapters at Qatar University. The tournament featured eight teams comprised of students and faculty members from the civil and architectural engineering department. Dr. Khalid Naji, Dean of the College of Engineering, and Prof. Mohammed Hussein, Head of the Department of Civil and Architectural Engineering, also played against the students' teams in the tournament. The tournament ended with presenting the medals and the cup to the winning team named “Trusses” including Moumen Sarikozal, Mohammed Al Lulu, Amr Elsherif, Firas Abousido, Mohamed Elemam, and Karim Ibrahim.



Figure 38 – Football Tournament March 31, 2022