

Department of Civil & Architectural Engineering

Department Executive Summary

This document reports about progress and activities of the Department of Civil & Architectural Engineering (CAE) for the calendar year 2021. 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 submitted a new proposal for a Concentration in Environmental Engineering. The Department also submitted a new Certificate in Water Resources Engineering. The Department launched the Minor in Engineering Project Management in Fall 2021. This was preceded by a promotional campaign including video materials and motivational session for the students. The Department also continued leading activities on Project Based Learning and pioneered implementation of other activities in higher education including the application of Game Based Learning. Two academics from the Department joined TIEE (with joint-affiliation) to take a lead in the college activities in higher education.

In the research domain, the Department maintained the 151-200 place in Shanghai Ranking in the Civil Engineering subject in 2021, same as last year and better than the position of 201-300 in 2019. The Department published 90 Journal papers (67 top tier, 15 second tier and 8 others) in 2021. Three members of the Department were honored by QU President in April 2021, among the distinguished scientists who have made remarkable efforts and achieved outstanding recognition in their field of study.

The Department had strong interaction with the industry in 2021. This is demonstrated by the success in attracting industrial funding; including 50,000 QAR from Delphine Energy, 700,000 QAR from Qatar Rail. The Department also received the funding promised last year of 951,000 QAR for a project with the Supreme Committee of Delivery and Legacy. Other than research, the Department received 100,000 QAR from QAPCO for outreach activities. The Department organized 13 different workshops, some of which were organized in collaboration with Qatar Society of Engineers, Institution of Civil Engineers, and Engineers Australia. The Department also continued its strong collaboration with Ashghal, which resulted in the development of new Certificate on Lean for Infrastructure Training.

The Department had strong activities in outreach in 2021. This includes community outreach demonstrated by seven articles in the local newspapers about research activities beside several appearances highlighting the Bridge Competition. The Department also continued its outreach for high school students through the Bridge Competition, school visits and support of other college and university effort in this domain. A campaign was initiated during Summer 2021 that resulted in the development of videos with high-quality contents to promote the Civil Engineering Program. The videos involved graduates of the Civil Engineering at top positions in Ashghal, MME, Qatar Rail, Qatari Emiri Corps of Engineers, Barwa Group, and the Green Building Council. The videos were used as key component in the enhancement of website carried in 2021. A new collaboration was also established in 2021 with the National Service Academy to have a “Program of Engineer of the Future” as an outreach program for the students in the academy in 2022.

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	
Academic and Support Staff	2021
Faculty	20
Lecturers and Teaching Assistants	8
Graduate Assistant	2
Technical and Administrative Staff	3
On-Study Leave	2
Total	35
Undergraduate Program	2021
Enrollment (Fall 2021)	248
Registered (Fall 2021)	217
Graduates (Spring 2021)	18
Graduates (Summer)	1
Graduates (Fall 2021)	18
Graduate Program	2021
Enrollment (Fall 2021)	35
Registered (Fall 2021)	22
Graduates (Spring 2021)	1
Research Projects (Awarded in 2021)	2021
GSRA	0
NPRP	1
PDRA	1

UREP	3
Qatar University Grants	2
University Internal Students' Grants	2
Research Projects (Active in 2021)	2021
GSRA	6
NPRP	5
PDRA	2
UREP	1
Qatar University Grants	2
University Internal Students' Grants	0
Industrial	2
MME	1
Publications (Appendix A1)	2021
Refereed Journal Papers	90
Conference Papers	17
Technical Reports	0
Book Chapters	1
Books	0
Book Reviews	1
Editorials and Essays	0
Seminars – Public Lectures – Short Courses (Appendix A2)	2021
Seminars and Public Lectures Delivered by Departmental Faculty Members Inside Qatar University	3
Seminars and Public Lectures Delivered by Departmental Faculty Members Outside Qatar University	4
Short Course Delivered by Departmental Faculty Members	0

Seminars and Public Lectures Attended by Departmental Faculty Members	8
Invited Public Lectures/ Keynote Speakers	1
Faculty Activities (Appendix A3)	2021
Professional Service	87
Awards and Achievements	3
Conferences Attended	4
Workshops, Training and Visits Attended	65
Workshops, Training and Visits Delivered	12
Seminars & Trainings	13
Events Organized	5
Other Activities	6
Students' Activities (Appendix A4)	2021
Competitions	5
Awards	1
Field Trips, Social and Extra-Curricular Events	4

Academic Staff

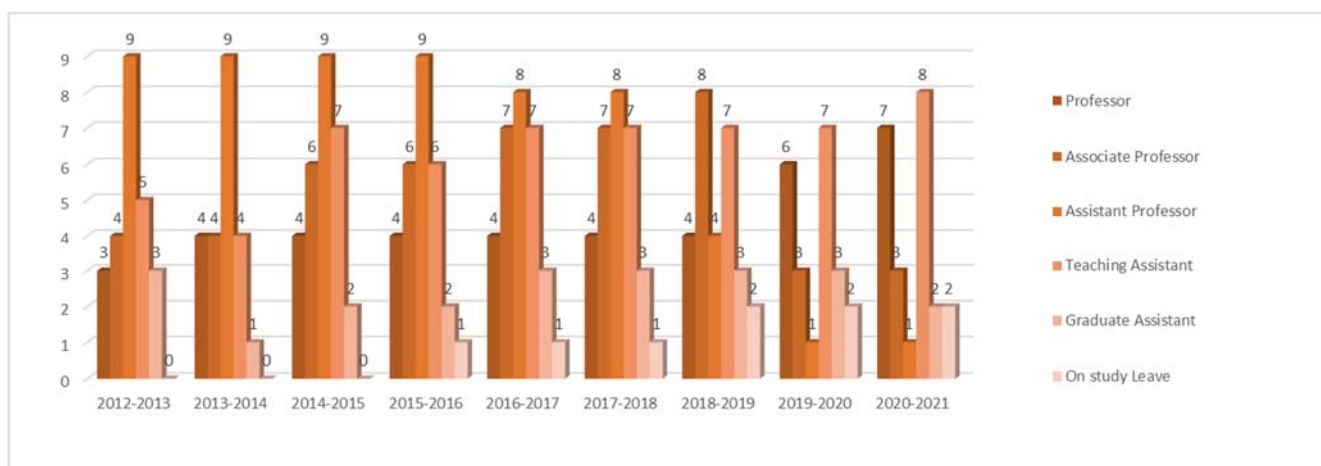


Figure 1: Academic Staff in CAE Department, 2012-2020.

Technical and Administrative Staff

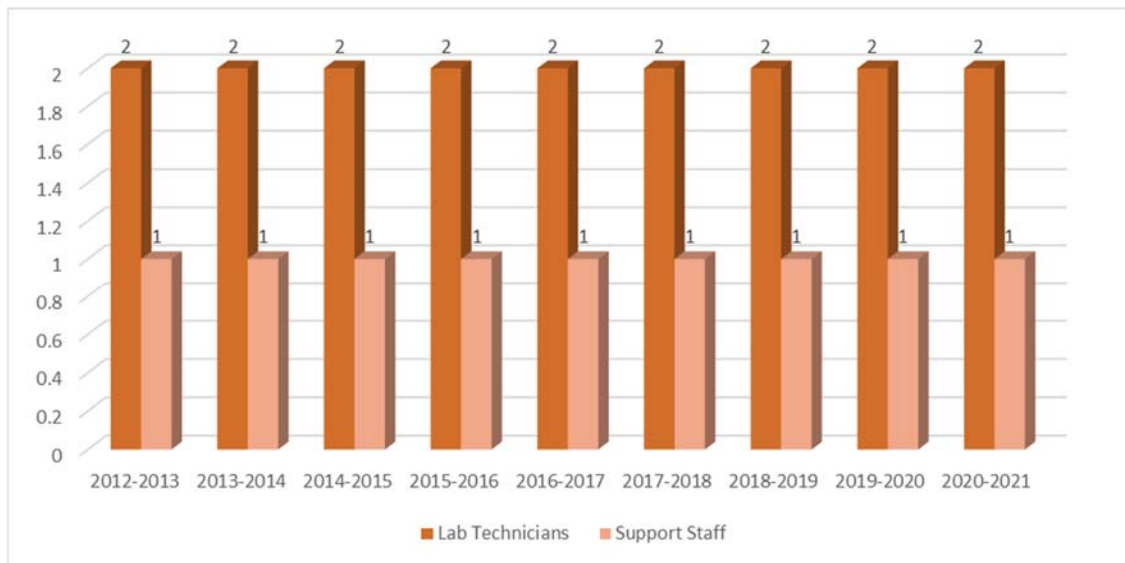


Figure 2: Non-Academic Staff in CAE Department, 2012-2020.

Department Standing Committees

The department has number of committees and coordination roles for 2021 as listed below:

- Departmental Board Committee: Dr. Mohammed Hussein (Chair).
- Curriculum and Quality Assurance Committee: Dr. Alaa Al-Hawari (Chair), Dr. Murat Gunduz, Dr. Hisham Eid, Dr. Usama Ebead (Fall 2021).
- Research and Postgraduate Committee: Dr. Mohammed Elshafie (Chair and postgraduate program coordinator), Dr. Okan Sirin, Dr. Mohamed Ayari.
- Developing the concentration in Environmental Engineering (Fall2021): Dr. Mohamed Ayari (Lead), with input from Dr. Mohammed Hussein, Dr. Alaa AlHawari, and Dr. Riyadh Al-Raoush.
- Developing the certificate in Water Resources Management (Fall2021): Dr. Riyadh Al-Raoush (Lead), with input from Dr. Mohammed Hussein, Dr. Alaa AlHawari, and Dr. Mohamed Ayari.
- Recruiting Committee: Dr. Mohammed Elshafie (Chair), Dr. Murat Gunduz, Dr. Okan Sirin, Dr. Evangelos Plevris (Fall 2021).
- Taskforce for exploring potential new programs and proposing a new program for the CAE Department: Dr. Mohammed Elshafie (Chair), Dr. Usama Ebead, Dr. Alaa Al-Hawari, Dr. Wael Alnahhal, Eng. Anas Alsharo (Support staff), Eng. Kais Douier (Support staff).
- Scheduling Coordinator: Dr. Wael Alnahhal.
- Minor in Engineering Project Management coordinator: Dr. Mohammed Elshafie.
- Coordinator of Senior design project: Dr. Riyadh Al-Raoush.
- University Senate representative: Dr. Wael Alnahhal.
- Newsletter coordinator: Dr. Alaa Al-Hawari.
- Technical manager of laboratories: Dr. Wael Alnahhal.
- ASCE Academic contact: Dr. Okan Sirin.
- ICE Academic contact: Dr. Mohammed Elshafie.
- Support of students: Department Office.
- Minutes recorder for Board meetings: Eng. Muhammad Shekab Afzal.
- Administrator for Senior design projects: Eng. Muhammad Shekaib
- 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 and course registration: 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 2020

Photo	Faculty Name	Rank/Position	Area of Specialization
Faculty Members with Administrative Roles			
	Mohammed Hussein	Head of the Department of Civil and Architectural Engineering	Railway Engineering, Ground-borne Vibration, Structural Dynamics, Structural-Health Monitoring, Soilstructure 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 the 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

Full Professors


	Mohammed Al-Ansari	Professor	Reinforced concrete design; solid mechanics, Earthquake Engineering, Numerical Analysis
	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, biosorption and selective adsorption), solid waste management and sustainability

	Okan Sirin	Professor	Pavement materials and design, Superpave technology, Accelerated pavement testing, Traffic engineering
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 Plevris	Associate Professor	Structural Engineering
Assistant Professors			
	Mohamed Arslan Ayari	Assistant 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.



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 Alnuaimi	Lecturer	Analysis and Design of Structures (On-Study Leave)

	Salem Alnaimi	Lecturer	Transportation Engineering
	Nasser Al-Jurf	Lecturer	Engineering Systems Management with Construction Management Concentration
Teaching Assistants			
	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
	Muhammad Shekaib Afzal	Teaching Assistant	Experimental testing of Large scale reinforced strengthened beams using textile-reinforced mortars and Finite Element Modeling of reinforced concrete structures.

	Anas Al-Sharo	Teaching Assistant	Surveying, Structural Analysis and Design
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Lab Technicians

	Abdul Azeez Kilayil	Senior Lab Technician	Land Surveying, Materials Testing & Concrete and Soil Mechanics
	Joseph Valiya Parambil Siju	Lab Technician	Traffic, Transportation & Pavement and Material Testing

Administrative Assistants

	Aisha Al- Kuwari	Administrative Coordinator	
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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 2020-2021

2020-2021 Teaching Load for the CAE Department							
Categ.	Names	Courses	SDPs	Thesis	Total	Required	Difference (+ means overload)
CAE Core Academics	Dr. Al-Ansari	12	4.2509	0	16.25085	18	-1.74915
	Dr. Al-Hawari	9	1.0836	2.75	12.83355	12	0.83355
	Dr. Al-Nahhal	18	1.5003	2.5	22.0003	18	4.0003
	Dr. Al-Nuaimi	3	0	0	3	3	0
	Dr. Al-Raoush	12	3.5007	1.5	17.0007	18	-0.9993
	Dr. Ayari	12	2.1254	0.25	14.37543	15	-0.624575
	Dr. Ebead	6	1.3336	2.5	9.8336	9	0.8336
	Dr. Eid	15	1.2086	0	16.20858	18	-1.791425
	Dr. Elshafie	9	3.1256	0	12.12563	12	0.125625
	Dr. Gunduz	15	2.0838	4	20.833	18	2.833
	Dr. Hussein	6	0	0.41667	6.41667	6	0.41667
	Dr. Naji	3	0	3.5	6.5	3	3.5
	Dr. Plevris	9	0	0	9	9	0
Dr. Sirin	15	2.3755	0.5	17.87548	18	-0.124525	
QTTSC Academics	Dr. Alhajyaseen	6	1.2503	0.25	7.50025		Load covered by QTTSC = 28.08 CHs
	Dr. Dias	6	1.3336	0	7.3336		
	Dr. Muley	6	0.6668	0.25	6.9168		
	Dr. Tahmasseby	6	0.3334	0	6.3334		
Other QU Academics	Dr. Baabbad	3	0	0	3		Load covered by other QU academics = 12 CHs
	Dr. Das	3	0	0	3		
	Dr. Zaidi	6	0	0	6		
Part-timers	Dr. Abi Nader	6	0	0	0		Load covered by Part-timers =6 CHs

Table 4: 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	4.25	24.21706	18	6.21706
	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
QTTSC Academics jointly affiliated at 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		

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 16 faculty members, 7 full-time teaching assistants, 2 engineering technicians, and 1 administrator. Three 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.

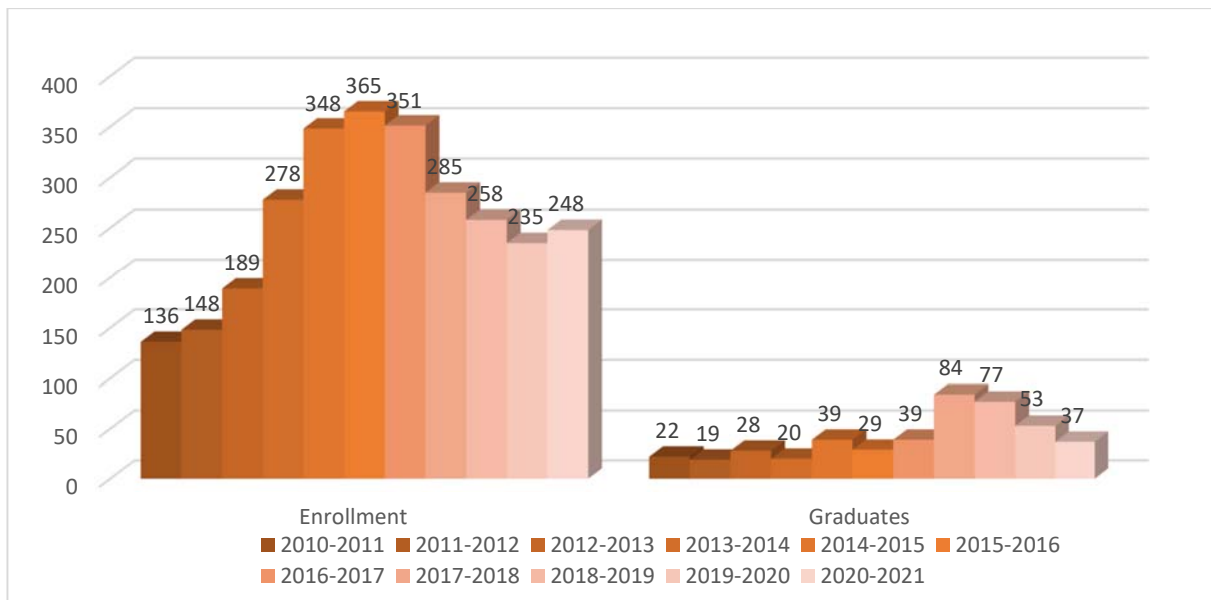


Figure 3: Number of enrolled and graduating undergraduate students in CAE department, 2010–2021.

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

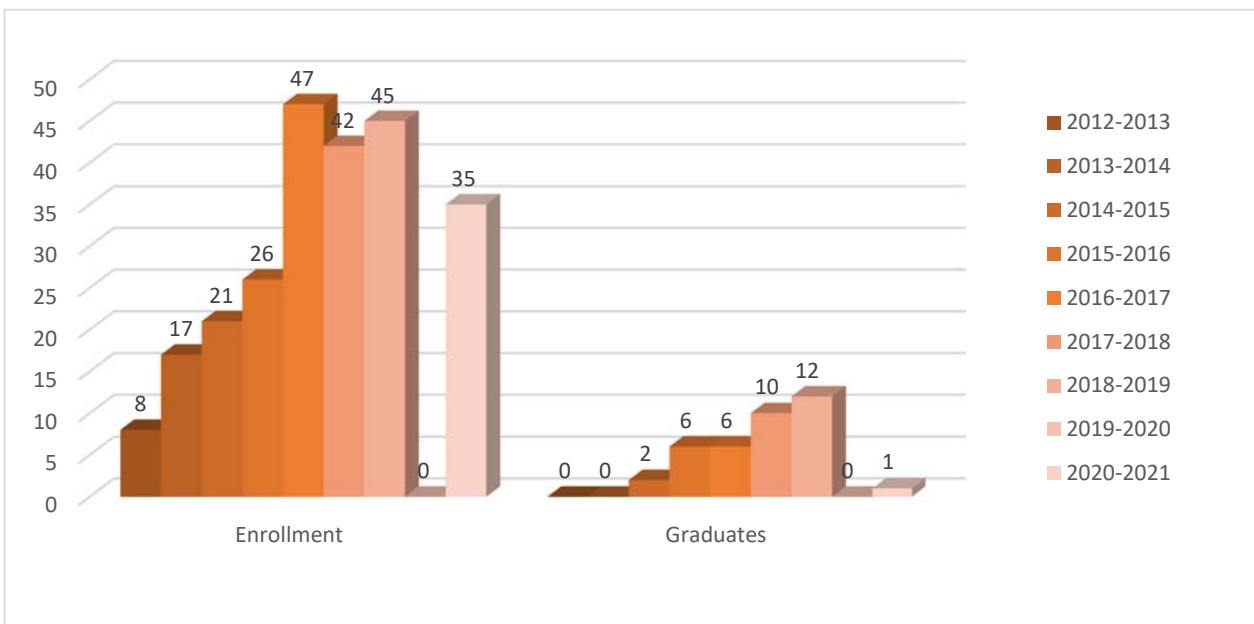


Figure 4: Number of enrolled and graduating graduate students in CAE department, 2012–2021

Internal, External Grants and Research

The following table illustrates the awarded research projects in the Department of CAE 2021

Table 5: Awarded Research Projects and Grants in the Department of CAE in 2021

Project Number	Project Title	Co-LPI/LPI
UREP28-242-2-066	Mechanical and durability properties of sustainable concrete incorporating recycled aggregates, fly ash, and basalt fibers	Wael Alnahhal
QUST-1-CENG-2021-20	Mechanical and Durability Characteristics of Concrete Made with Treated Domestic Wastewater and Various Admixtures	Wael Alnahhal
QUST-1-CENG-2021-21	Shear Strength of One-way High Strength Fiber Reinforced Concrete Slabs Reinforced with Sand Coated BFRP Bars”	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
UREP27-029-5-003	Assessment of driver behavior using smartphone-based application data	Deepti Muley (LPI); Charitha Dias
PDRA6-0602-20007	Treatment of Municipal and Industrial Sludge Using New Low-Cost Ionic Solvents	Alaa AlHawari

QUHI-CENG-2022-517	Pore scale investigation of the dynamics of contact angels for geological carbon sequestration	Riyadh Alraoush
QUCG-CENG-22/23-561	Sustainable concrete using locally discarded Materials and Treated Domestic wastewater: Mechanical, Durability and Applications in	Dr. Wael Alnahhal (LPI); Dr. Mohammed Elshafie (PI), Dr. Mohammed Irshidat (PI)
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

Table 6: Research Projects Active (running) during anytime from January 2021 to the end of December 2021 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	Undefined- Alaa Taha	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
M-QJRC-2020-8	Development of Innovative Measures for Improving Pedestrian Safety Considering the Presence of Autonomous Vehicles	Wael Alhajyaseen, PI: Charitha Dias
UREP26-011-5-004	Exploring the Influence of Power Paradox on Driving Behavior and Traffic Safety	Charitha Dias
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	Mohamed Elshafie

NPRP:12S-0314-190366	A novel Data-driven approach for designing dewatering systems in randomly fractured rock masses	Mohamed Elshafie, Hisham Eid
IRCC-2019-011	Transforming Locally Available Industry by-products to Innovation in Road Construction Materials.	LPI: Okan Sirin, PI: Murat Gunduz
GSRA7-1-0217-20002	Fines influence on Dynamic Contact Angles in Qatari Porous Media using Synchrotron Microtomography and Microfluidics	Riyadh AlRaoush
PDRA6-0602-20007	Treatment of Municipal and Industrial Sludge Using New Low-Cost Ionic Solvents	LPI: Alaa AlHawari
MME01-0906-190024	Hydrogel Agriculture to Support Food Security in Qatar	LPI: Alaa AlHawari
NPRP10-0117-170176	Forward Osmosis Seawater Pretreatment for High Performance Thermal Desalination Plants	LPI: Alaa AlHawari
GSRA6-1-0509-19021	Hybrid system of FO-RO to produce high quality irrigation water	Alaa AlHawari
GSRA7-1-0429-20028	Extraction of Rubidium using hybrid membrane distillation – solvent extraction	Alaa AlHawari

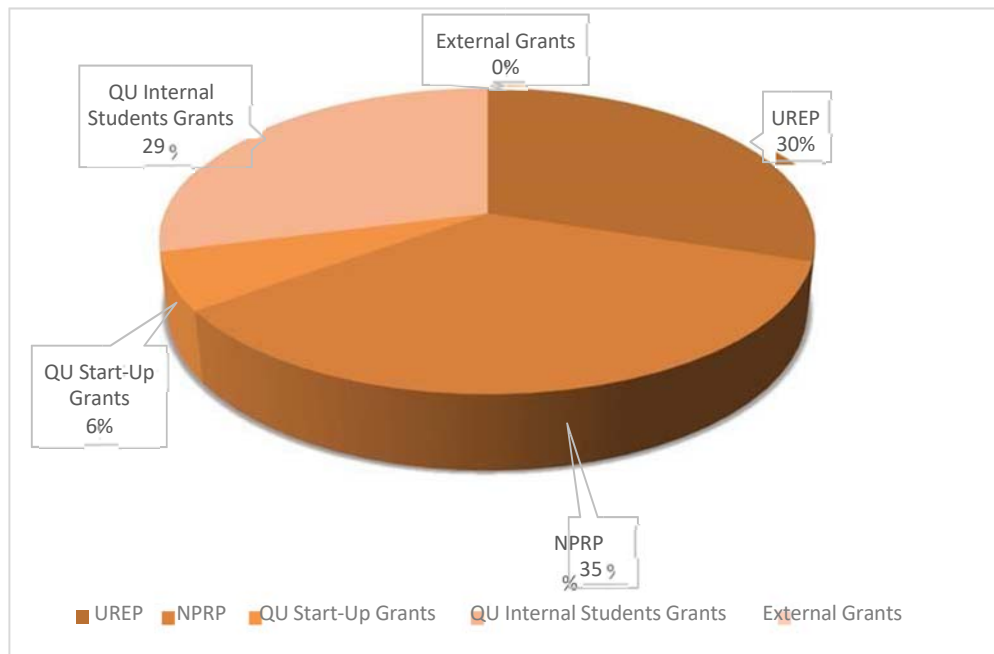


Figure 5: Research Projects Awarded in 2012-2013.

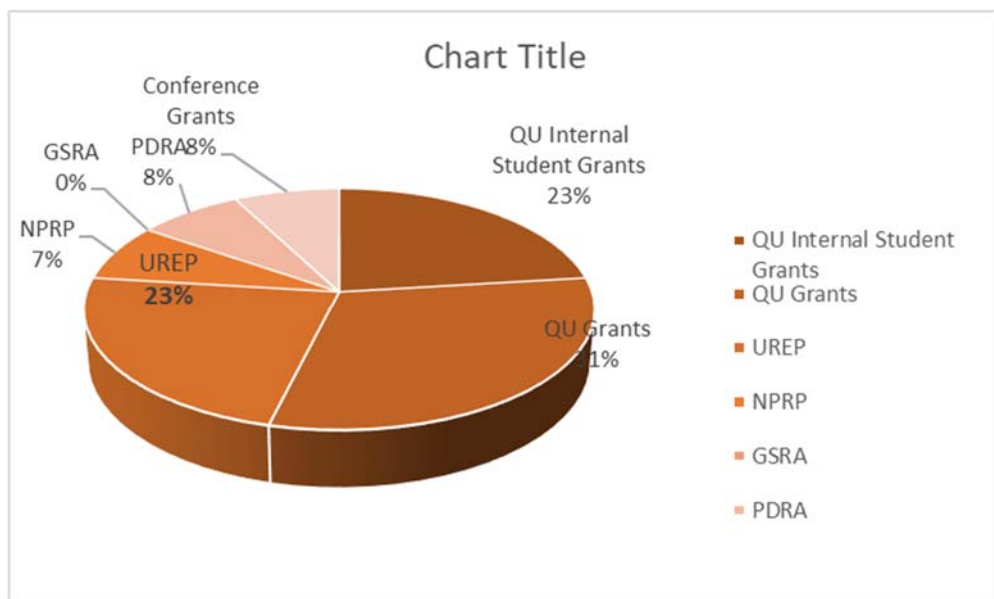


Figure 6: Research Projects Awarded in 2013-2021

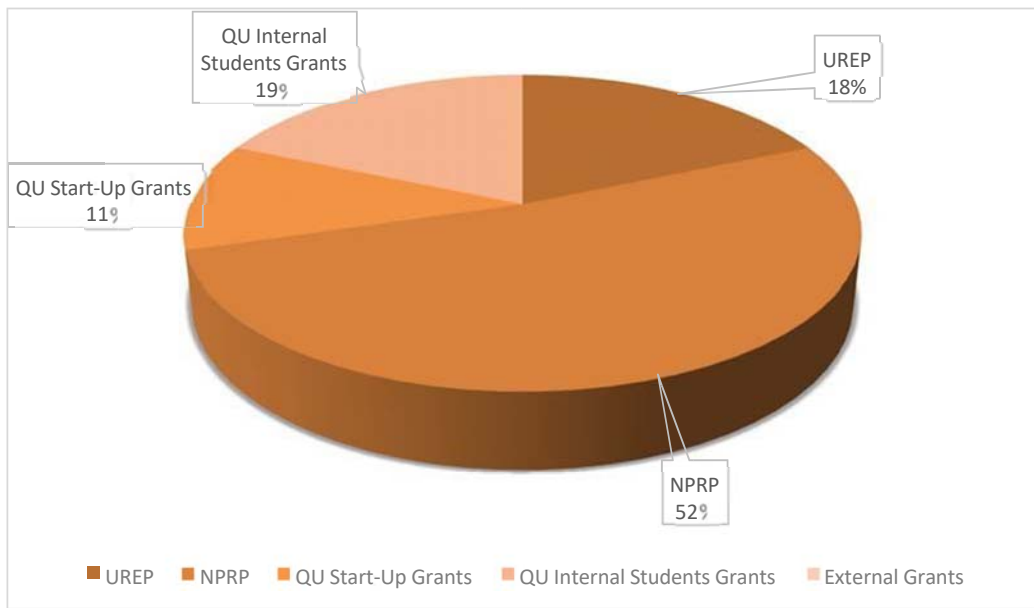


Figure 7: Research Projects Awarded in 2014-2015

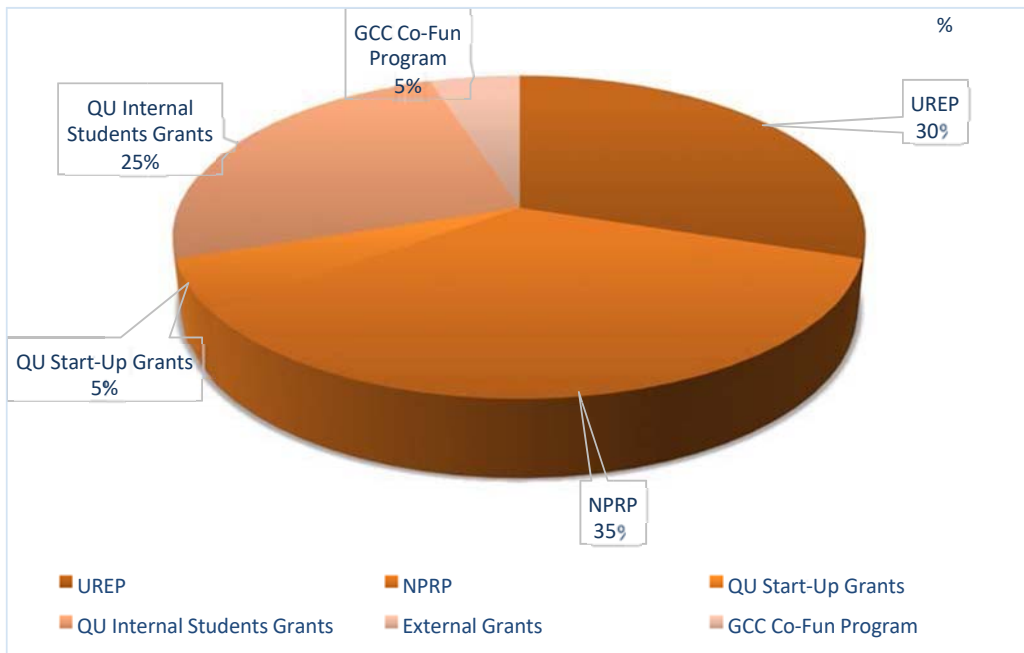


Figure 8: Research Projects Awarded in 2016.

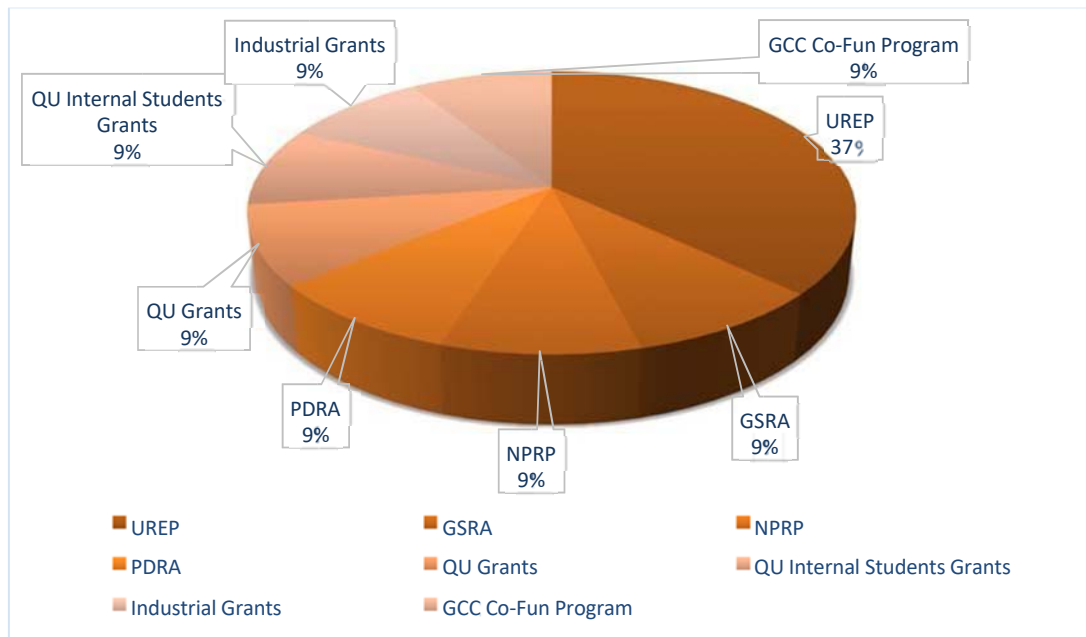


Figure 9: Research Projects Awarded in 2017.

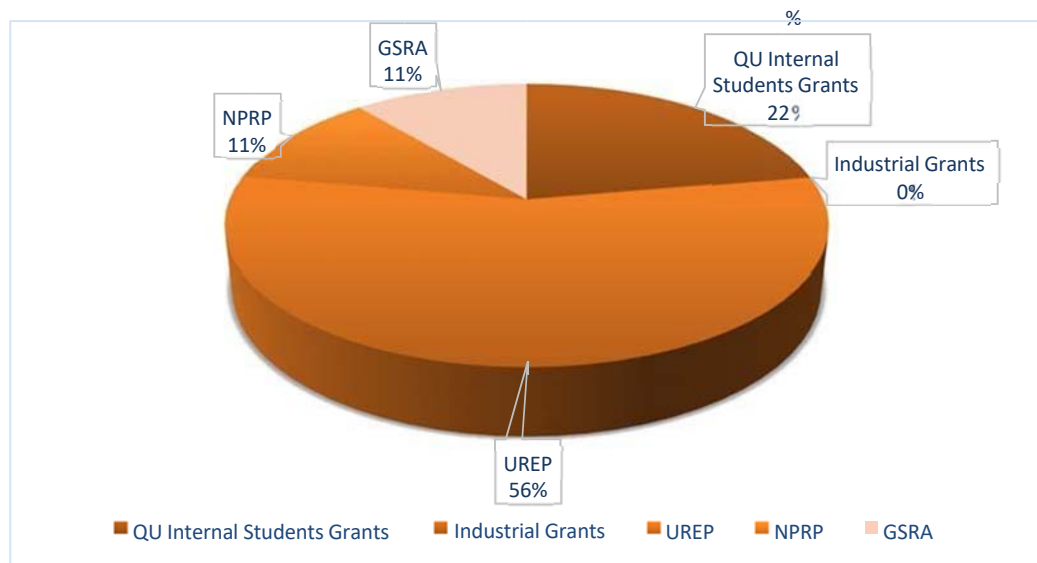


Figure 10 Research Projects Awarded in 2018.

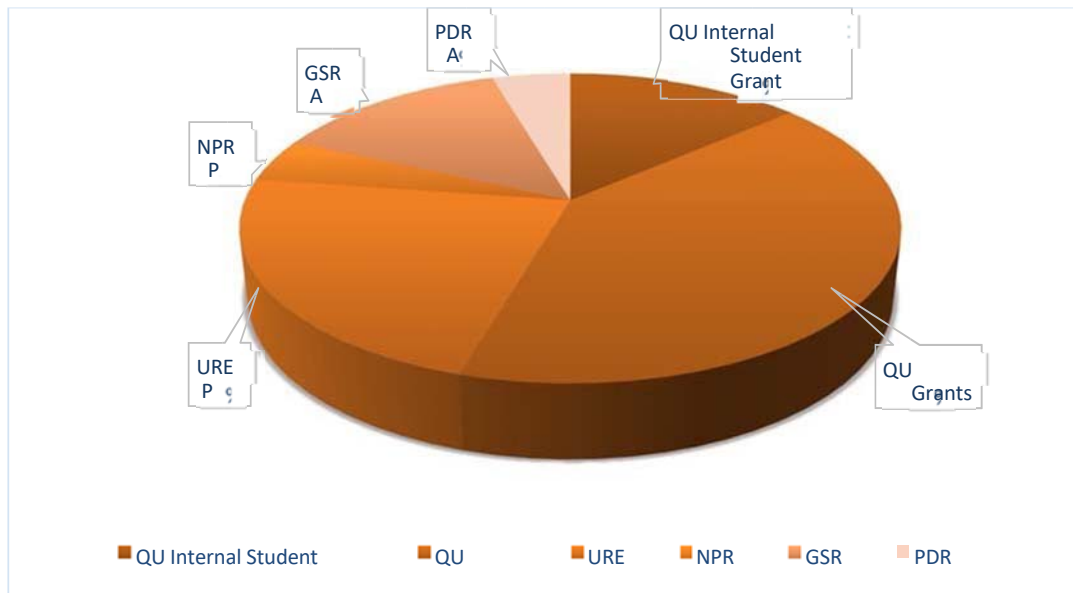


Figure 11 Research Projects Awarded in 2019

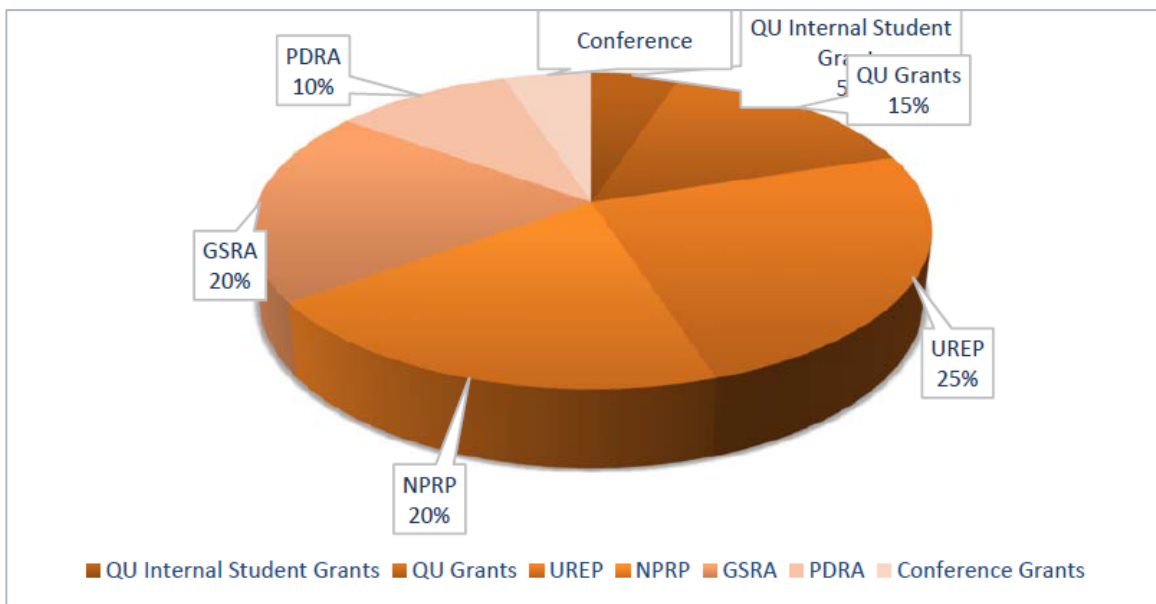


Figure 12 Research Projects Awarded in 2020.

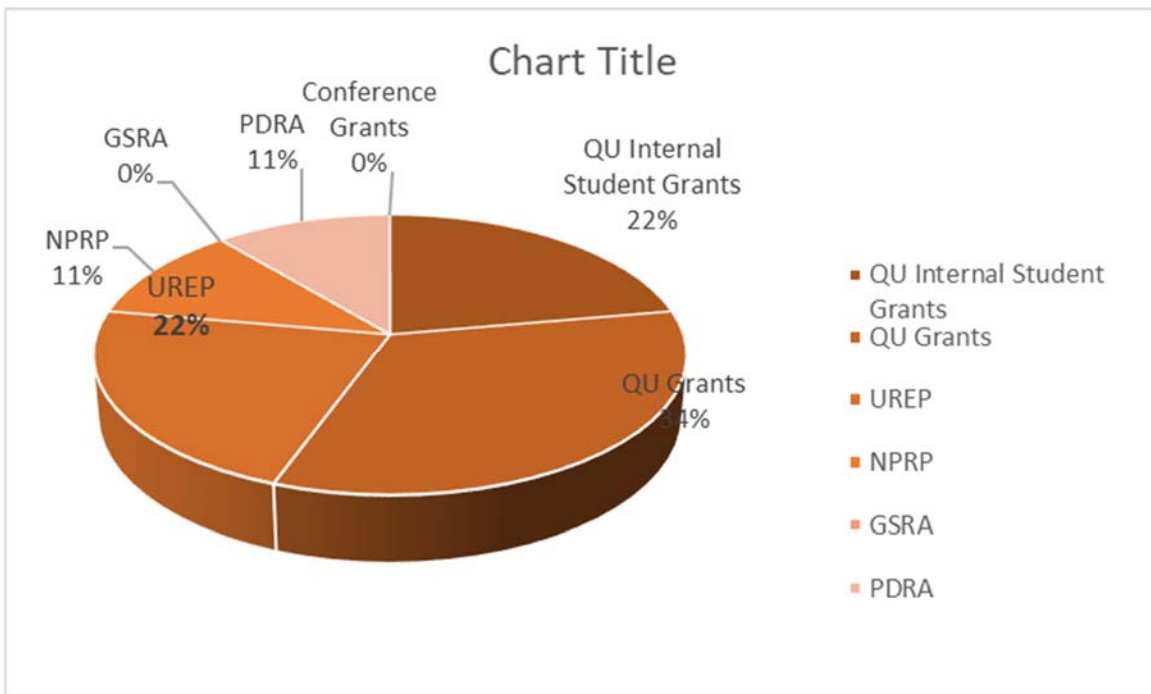


Figure 13 Research Projects Awarded in 2021.

Publications

The Figures below illustrate the publications in the Department of CAE 2013 -2021. List of publications in 2021 is shown with details in appendix A1.

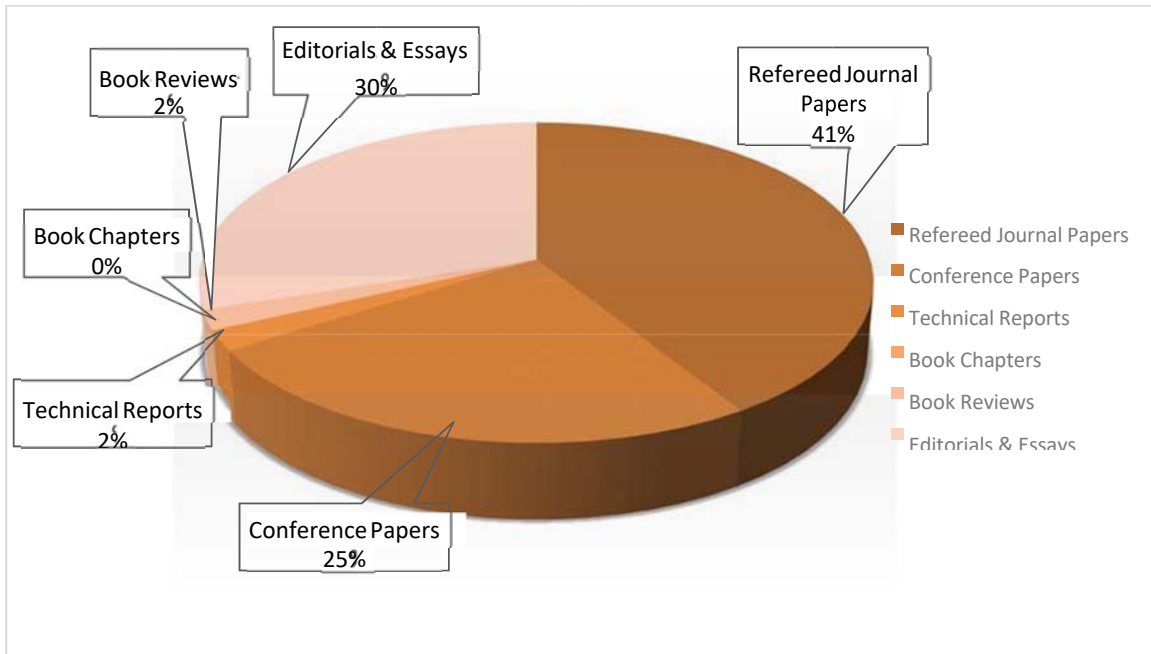


Figure 14: Publications by Faculty in 2012-2013

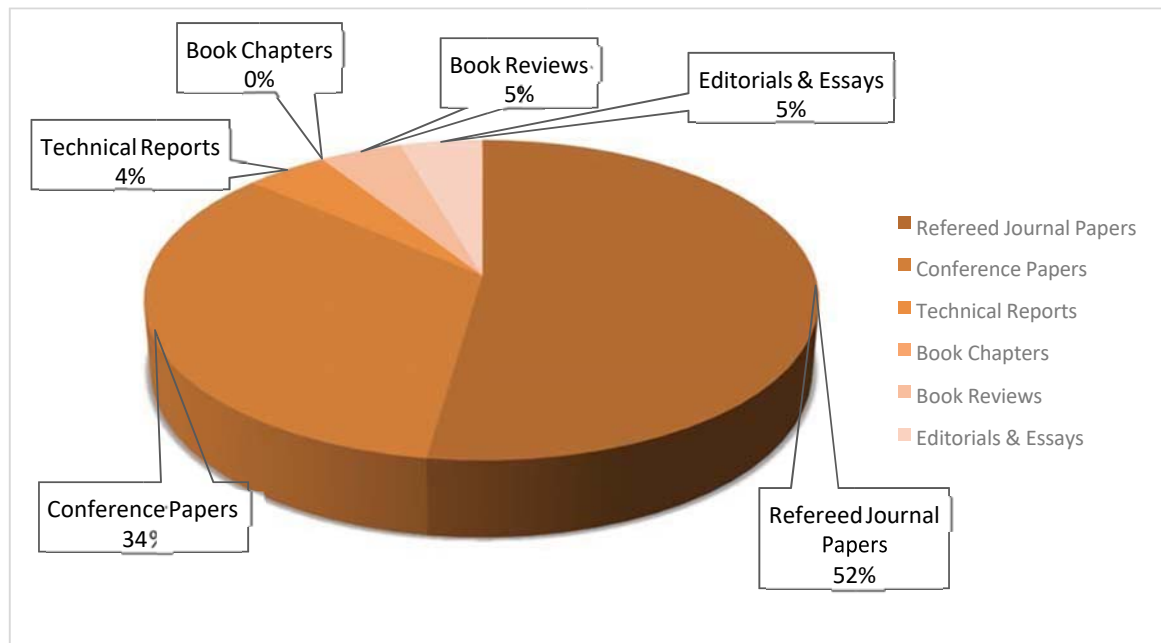


Figure 15: Publications by Faculty in 2013-2014

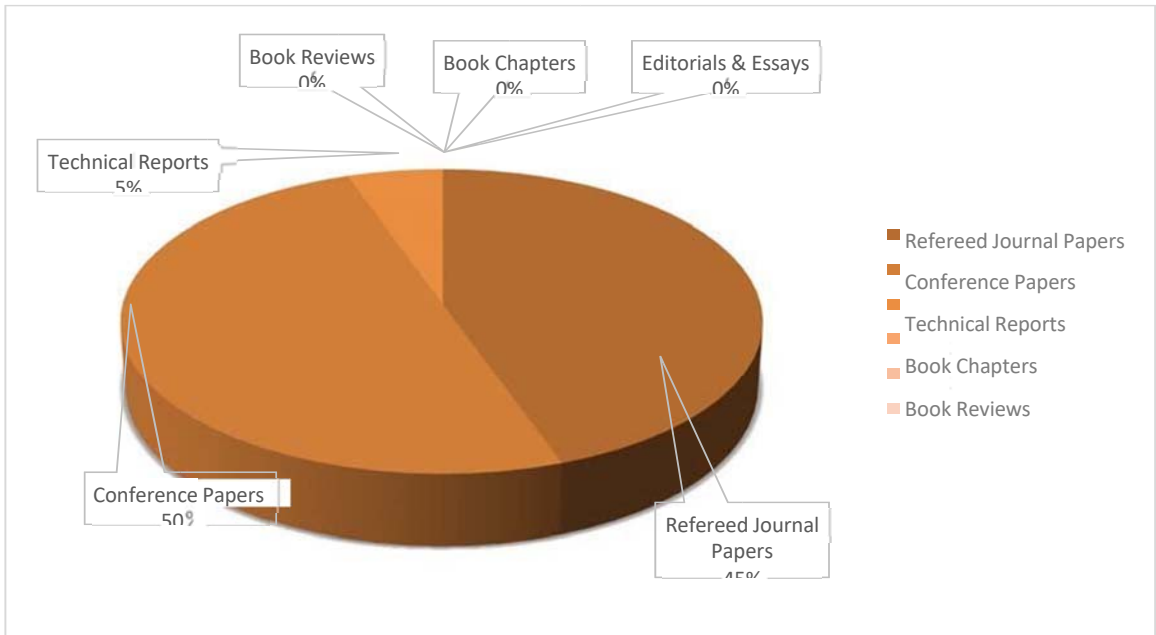


Figure 16: Publications by Faculty in 2014-2015

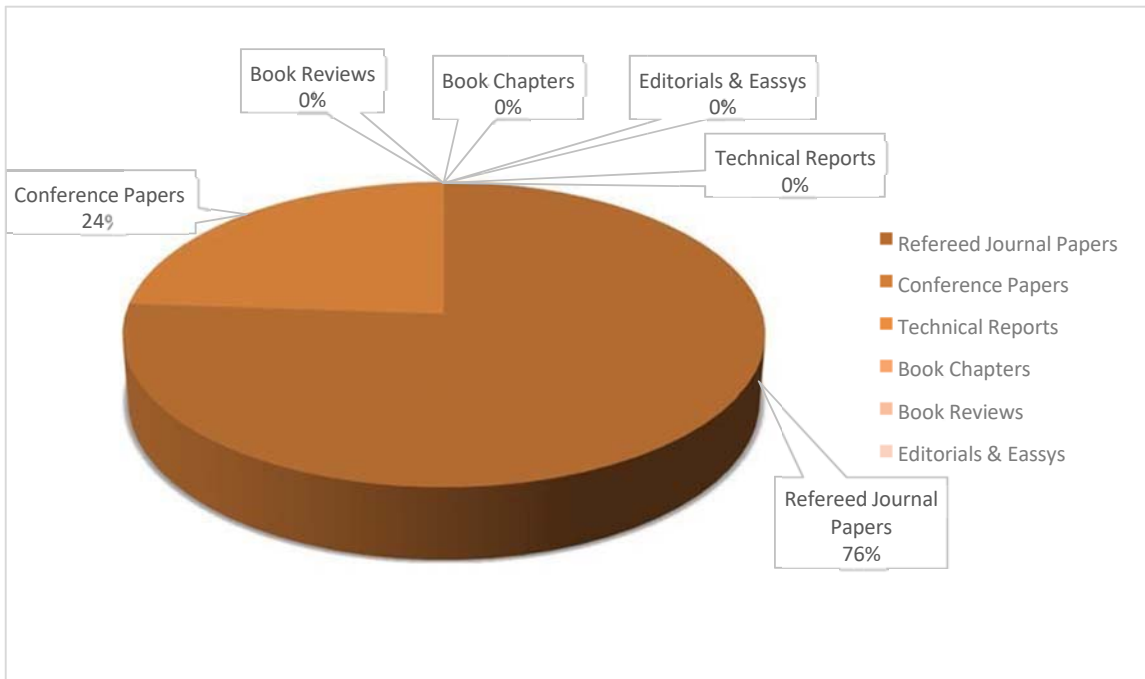


Figure 17: Publications by Faculty in 2016

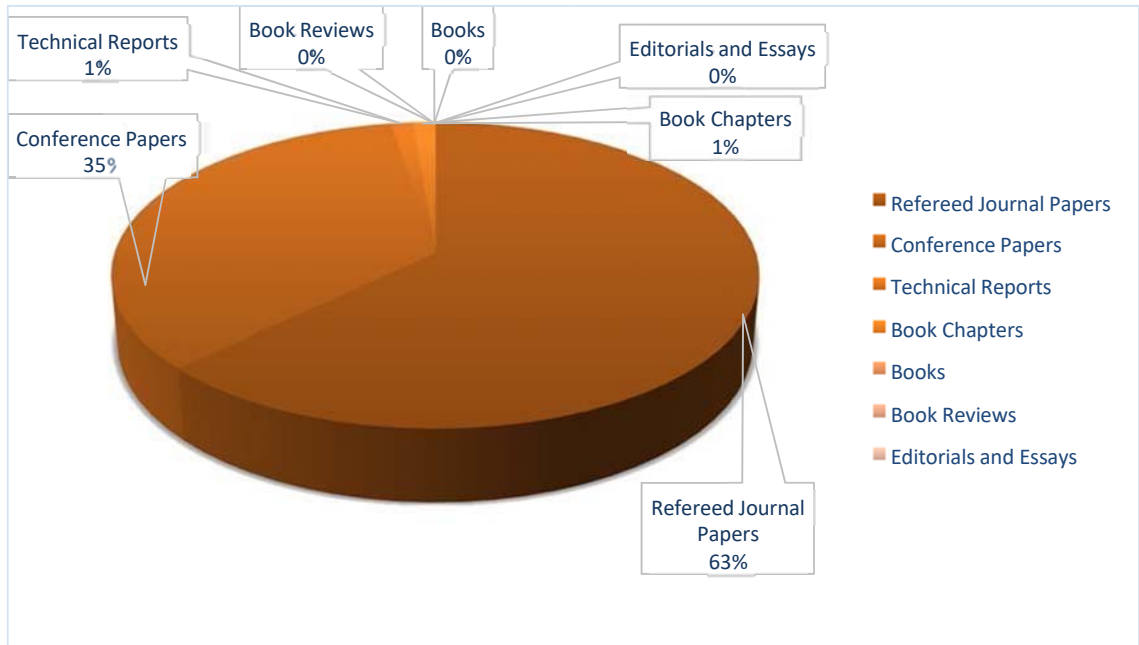


Figure 18: Publications by Faculty in 2017

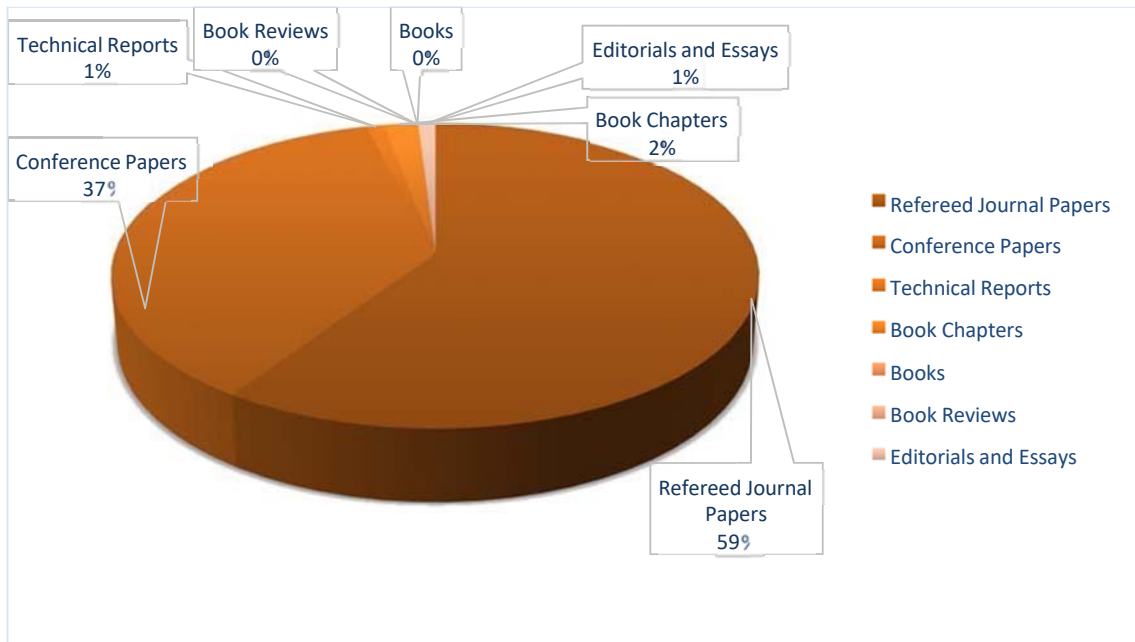


Figure 19: Publications by Faculty in 2018

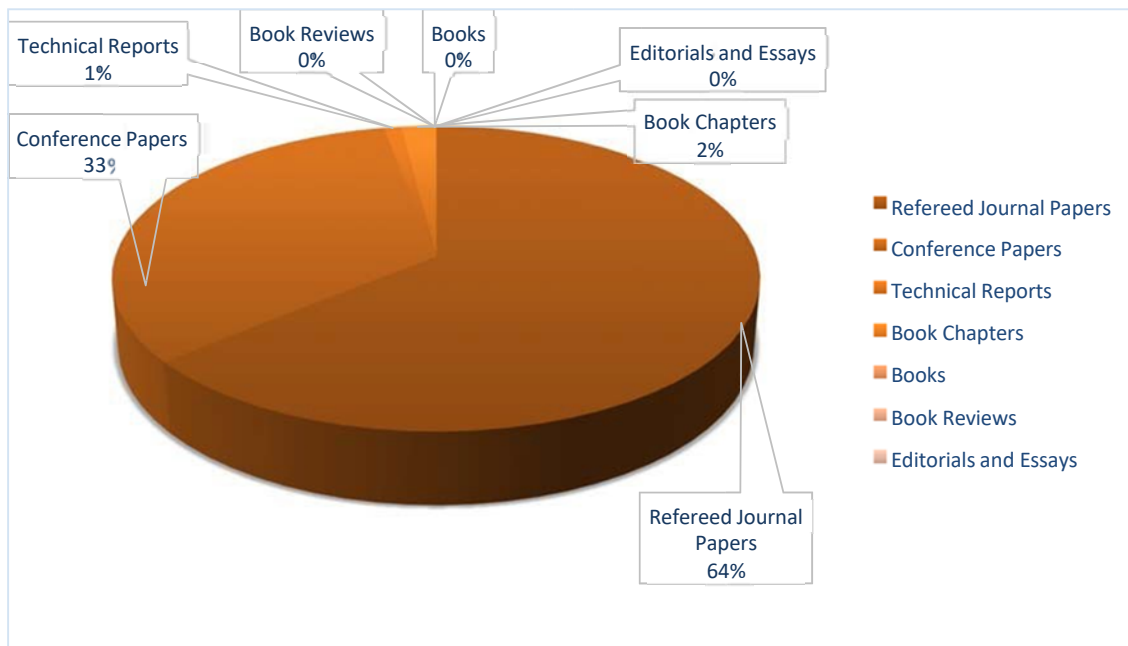


Figure 20: Publications by Faculty in 2019

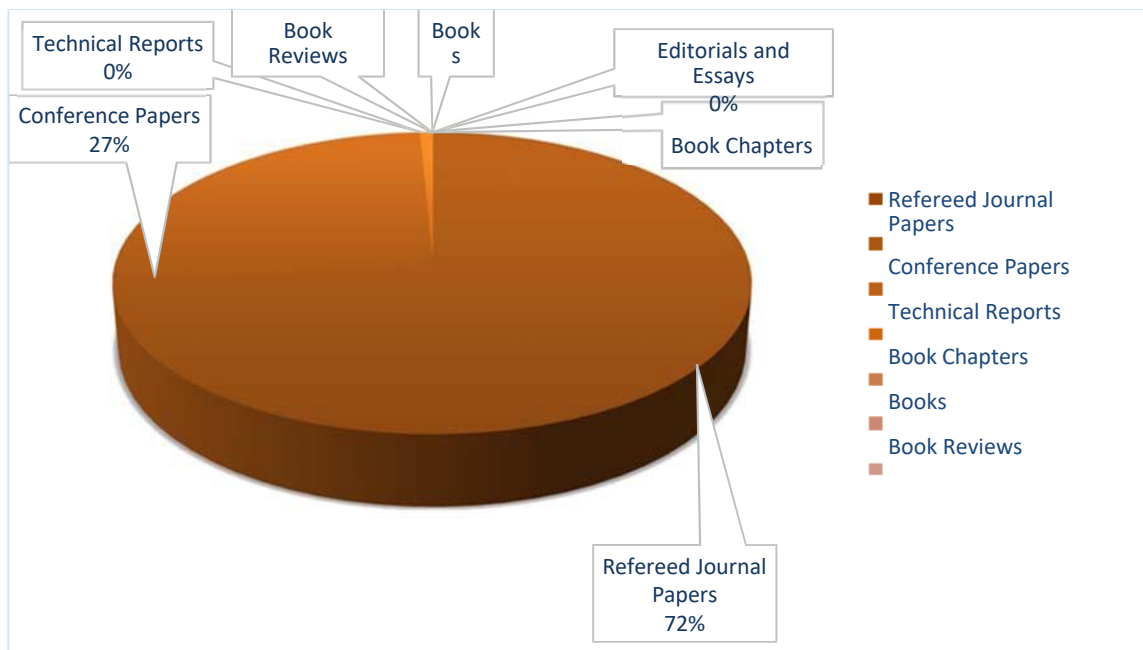


Figure 21: Publications by Faculty in 2020

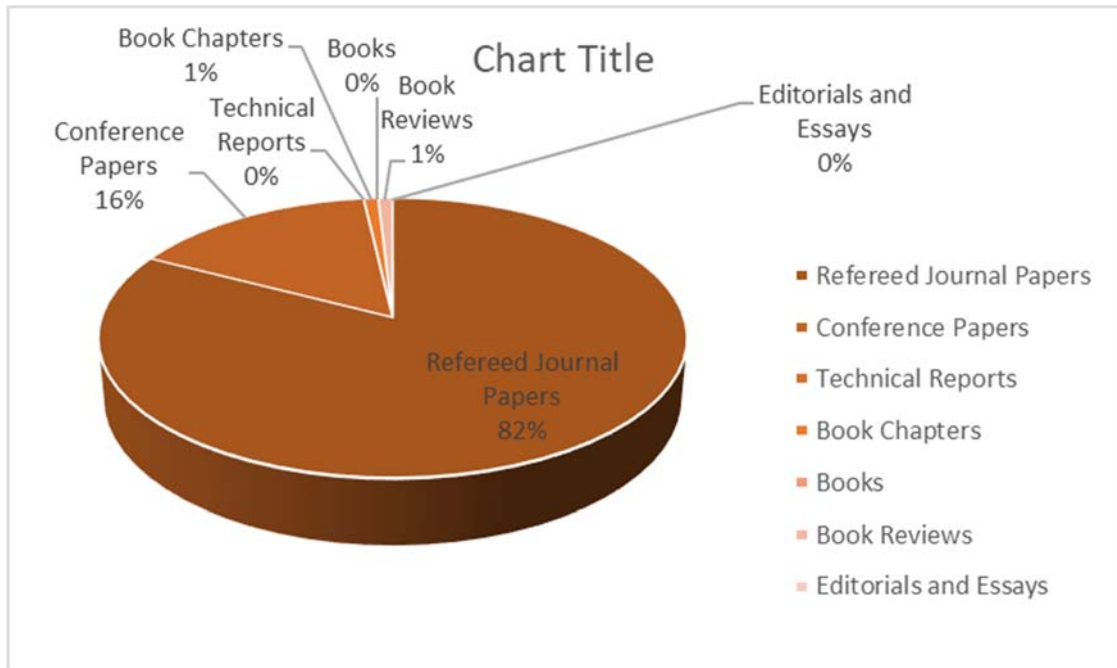


Figure 22: Publications by Faculty in 2021

Seminars, Public Lectures

The Department of Civil and Architectural Engineering held many seminars for the calendar year 2019. Department seminars were organized with the objective of sharing scientific researches and academic experiences. Appendix A2 lists detailed data for seminars and public lectures.

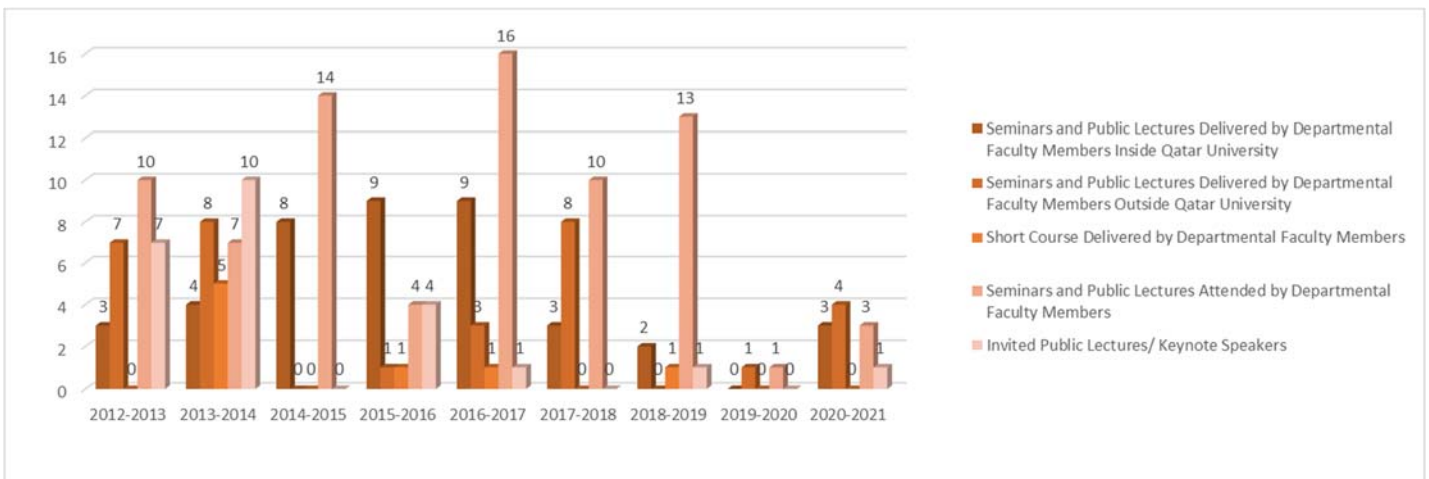


Figure 23: Seminars & Public Lectures in 2012-2021

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.

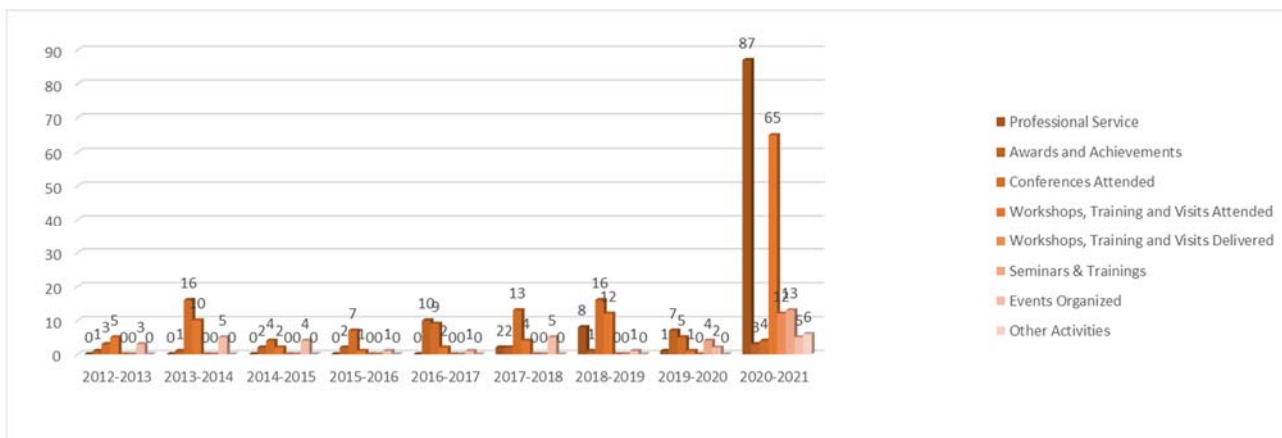


Figure 24: Faculty Activities in 2012-2021

Appendix A1: List of Publications

Journal Papers

1. Alabbasi, Y., & **Hussein, M.** (2021). Geomechanical modelling of railroad ballast: a review. *Archives of Computational Methods in Engineering*, 28(3), 815-839.
2. Avci, O., Abdeljaber, O., Kiranyaz, S., **Hussein, M.**, Gabbouj, M., & Inman, D. J. (2021). A review of vibration-based damage detection in civil structures: From traditional methods to Machine Learning and Deep Learning applications. *Mechanical systems and signal processing*, 147, 107077.
3. Badri, Y., Sassi, S., **Hussein, M.**, & Renno, J. (2021). Experimental and numerical investigation of damping in a hybrid automotive damper combining viscous and multiple-impact mechanisms. *Journal of Vibration and Control*, 10775463211038125.
4. Badri, Y., Syam, T., Sassi, S., **Hussein, M.**, Renno, J., & Ghani, S. (2021). Investigating the characteristics of a magnetorheological fluid damper through CFD modeling. *Materials Research Express*, 8(5), 055701.
5. Elbashier, E., Mussa, A., Hafiz, M., & **Hawari, A. H.** (2021). Recovery of rare earth elements from waste streams using membrane processes: An overview. *Hydrometallurgy*, 105706.
6. Khatib, W. A., **Ayari, A.**, Yasir, A. T., Talhami, M., Das, P., Quadir, M., & **Hawari, A. H.** (2021). Enhancing the electrocoagulation process for harvesting marine microalgae (*Tetraselmis* sp.) using interdigitated electrodes. *Journal of Environmental Management*, 292, 112761.
7. AlZainati, N., Saleem, H., Altaee, A., Zaidi, S. J., Mohsen, M., **Hawari, A.**, & Millar, G. J. (2021). Pressure retarded osmosis: Advancement, challenges and potential. *Journal of Water Process Engineering*, 40, 101950.
8. Almkudat, A., Hafiz, M., Yasir, A. T., Alfahel, R., & **Hawari, A. H.** (2021). Unlocking the application potential of electrocoagulation process through hybrid processes. *Journal of Water Process Engineering*, 40, 101956.
9. Jawad, J., **Hawari, A. H.**, & Zaidi, S. J. (2021). Artificial Neural Network Modeling of Wastewater Treatment and Desalination Using Membrane Processes: A Review. *Chemical Engineering Journal*, 129540.
10. Ewis, D., Ismail, N. A., Hafiz, M., Benamor, A., & **Hawari, A. H.** (2021). Nanoparticles functionalized ceramic membranes: fabrication, surface modification, and performance. *Environmental Science and Pollution Research*, 1-26.
11. Khanafer, D., Yadav, S., Ganbat, N., Altaee, A., Zhou, J., & **Hawari, A. H.** (2021). Performance of the Pressure Assisted Forward Osmosis-MSF Hybrid Desalination Plant. *Water*, 13(9), 1245.
12. Hafiz, M., Hawari, A. H., Alfahel, R., Hassan, M. K., & Altaee, A. (2021). Comparison of Nanofiltration with Reverse Osmosis in Reclaiming Tertiary Treated Municipal Wastewater for Irrigation Purposes. *Membranes*, 11(1), 32.
13. Jawad, J., **Hawari, A. H.**, & Zaidi, S. J. (2021). Modeling and sensitivity analysis of the forward osmosis process to predict membrane flux using a novel combination of neural network and response surface methodology techniques. *Membranes*, 11(1), 70.
14. Alkhatib, A., **Ayari, M. A.**, & Hawari, A. H. (2021). Fouling mitigation strategies for different foulants in membrane distillation. *Chemical Engineering and Processing-Process Intensification*, 108517.

15. **Hawari, A. H.**, Qasem, M., & **Alhajyaseen, W.** (2021). Concentration of Pb, Cu, Zn and Cd in the Roadside Soil of Doha: Effect of Traffic Volume and Season. *Polish Journal of Environmental Studies*, 30(4), 3579-3586.
16. AlKhereibi, A., AlSuwaidi, M., Al-Mohammed, R., Pokharel, S., & **Ayari, M.** (2021). An integrated urban-transport smart growth model around metro stations: A case of Qatar. *Transportation Research Interdisciplinary Perspectives*, 10, 100392.
17. Khanafer, D., Ibrahim, I., Yadav, S., Altaee, A., **Hawari, A.**, & Zhou, J. (2021). Brine reject dilution with treated wastewater for indirect desalination. *Journal of Cleaner Production*, 322, 129129.
18. Ullah, F., Ansari, S., Hanif, M., **Ayari, M.**, Chowdhury, M., Khandakar, A., & Khan, M. (2021). Brain MR Image Enhancement for Tumor Segmentation Using 3D U-Net. *Sensors*, 21, 7528.
19. Jawad, J., **Hawari, A. H.**, Zaidi, S. J., & Almkdad, A. (2021). The influence of aeration scheme and aeration rate on the permeate flux for wastewater treatment using membrane bioreactors: experimental and artificial neural network modeling. *DESALINATION AND WATER TREATMENT*, 218, 164-176.
20. Hafiz, M., Alfahel, R., **Hawari, A. H.**, Hassan, M. K., & Altaee, A. (2021). A Hybrid NF-FO-RO Process for the Supply of Irrigation Water from Treated Wastewater: Simulation Study. *Membranes*, 11(3), 191.
21. Almkdad, A., **Hawari, A. H.**, & Hafiz, M. (2021). An Enhanced Electrocoagulation Process for the Removal of Fe and Mn from Municipal Wastewater Using Dielectrophoresis (DEP). *Water*, 13(4), 485.
22. Daher, S., Zayed, T., & **Hawari, A.** (2021). Defect-Based Condition Assessment Model for Sewer Pipelines Using Fuzzy Hierarchical Evidential Reasoning. *Journal of Performance of Constructed Facilities*, 35(1), 04020142.
23. Karimian, F., Kaddoura, K., Zayed, T., **Hawari, A.**, & Moselhi, O. (2021). Prediction of Breaks in Municipal Drinking Water Linear Assets. *Journal of Pipeline Systems Engineering and Practice*, 12(1), 04020060.
24. Sirin, O., **Gunduz, M.** and Shamiyeh, M.E. (2021), "Application of analytic hierarchy process (AHP) for sustainable pavement performance management in Qatar", *Engineering, Construction and Architectural Management*, Vol. 28 No. 10, pp. 3106-3122. <https://doi.org/10.1108/ECAM-02-2020-0136>
25. da Silva Burke, T. S., & **Elshafie, M. Z.** (2021). Arching in granular soils: experimental observations of deformation mechanisms. *Géotechnique*, 71(10), 866-878.
26. da Silva Burke, T. S., & **Elshafie, M. Z.** (2021). Arching in granular soils: limit state equilibrium. *Géotechnique*, 71(8), 700-713.
27. da Silva Burke, T., & Elshafie, M. (2021). Geosynthetic-reinforced soils above voids: Observation of soil and geosynthetic deformation mechanisms. *Geotextiles and Geomembranes*, 49(1), 1-18.
28. Hillel, T., Bierlaire, M., **Elshafie, M. Z.**, & Jin, Y. (2021). A systematic review of machine learning classification methodologies for modelling passenger mode choice. *Journal of choice modelling*, 38, 100221.
29. Sasaki, T., Shao, B., **Elshafie, M.**, Papadopoulou, M., Yamamoto, K., & Soga, K. (2021). Simulation of axial tensile well deformation during reservoir compaction in offshore unconsolidated methane hydrate-bearing formation. *Computers and Geotechnics*, 129, 103894.
30. da Silva Burke, T. S., & **Elshafie, M. Z. E. B.** (2021b). Geosynthetic-reinforced soils above voids: Observation and prediction of soil arching. *Geotextiles and Geomembranes*, 49(3), 579–592. <https://doi.org/https://doi.org/10.1016/j.geotexmem.2020.11.005>

31. **Naji, K., Gunduz, M.,** Salat, F. "Assessment of Pre-Construction Factors in Sustainable Project Management Performance ", *Engineering, Construction and Architectural Management*, 28 (10), November 2021, pp. 3060-3077
32. **Gunduz, M., & Elsherbeny, H. A.** (2021). Critical Assessment of Contract Administration Using Multidimensional Fuzzy Logic Approach. *Journal of Construction Engineering and Management*, 147(2), 04020162.
33. **Gunduz, M., & Lutfi, H.** (2021). Go/No-Go Decision Model for Owners Using Exhaustive CHAID and QUEST Decision Tree Algorithms. *Sustainability*, 13(2), 815.
34. **Sirin, O.,** Ohiduzzaman, M., & Kassem, E. (2021). Influence of temperature on tire-pavement noise in hot climates: Qatar case. *Case Studies in Construction Materials*, 15, e00651.
35. Sadeq, M., Huang, C.-W., Masad, E., Al-Khalid, H., & **Sirin, O.** (2021). A framework for the analysis of damage and recovery characteristics of asphalt mixtures. *Road Materials and Pavement Design*, 22(9), 1986-1999.
36. **Sirin, O.,** Ohiduzzaman, M., Kassem, E., & Hassan, W. (2021). Acoustic Performance Evaluation of Dense-Graded Asphalt Pavements in Qatar. *Advances in Civil Engineering*, Vol. 2021, Article ID 5520432, 16 pages,
37. Jarrar, Z. A., **Al-Raoush, R. I.,** Hannun, J. A., & Alshibli, K. A. (2021). New model for estimating geometric tortuosity of variably saturated porous media using 3D synchrotron microcomputed tomography imaging. *Soil Science Society of America Journal*.
38. Nishad, S., **Al-Raoush, R. I.,** & Alazaiza, M. Y. (2021). Release of colloids in saturated porous media under transient hydro-chemical conditions: A pore-scale study. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 614, 126188.
39. Gunda, M., Kondaveeti, S., Bharat, L. K., Modigunta, J. K. R., Abu-Reesh, I. M., & **Al-Raoush, R. I.** (2021). Impact of electric potential and magnetic fields on power generation in microbial fuel cells treating food waste leachate. *Journal of Water Process Engineering*, 40, 101841.
40. Mohanakrishna, G., **Al-Raoush, R. I.,** & Abu-Reesh, I. M. (2021). Integrating electrochemical and bioelectrochemical systems for energetically sustainable treatment of produced water. *Fuel*, 285, 119104.
41. Nishad, S., & **Al-Raoush, R. I.** (2021). Colloid retention and mobilization mechanisms under different physicochemical conditions in porous media: A micromodel study. *Powder Technology*, 377, 163-173.
42. Ryou, J. E., **Al-Raoush, R. I.,** Alshibli, K., Lee, J. Y., & Jung, J. (2021). Effects of soaking process on CH₄-CO₂ replacement efficiency for hydrate-bearing sediments. *Journal of Petroleum Science and Engineering*, 196, 107772.
43. Hamid, S., **Naji, K.,** Younis, A., & **Ebead, U.** (2021). Material performance and cost effectiveness of seawater-mixed rubberized concrete. *Case Studies in Construction Materials*, 15, e00735.
44. Wakjira, T. G., Alam, M. S., & **Ebead, U.** (2021). Plastic hinge length of rectangular RC columns using ensemble machine learning model. *Engineering Structures*, 244, 112808.
45. Wakjira, T. G., & **Ebead, U.** (2021). Strengthening of reinforced concrete beams in shear using different steel reinforced grout techniques. *Structural Concrete*, 22(2), 1113-1127.
46. Du, X., Naji, K. K., **Ebead, U.,** & Ma, J. (2021). Engineering instructors' professional agency development and identity renegotiation through engaging in pedagogical change towards PBL. *European Journal of Engineering Education*, 46(1), 116-138.

47. Abushanab, A., **Alnahhal, W.**, Sohail, M. G., Alnuaimi, N., Kahraman, R., & Altayeh, N. (2021). Mechanical and durability properties of ultra-high performance steel FRC made with discarded materials. *Journal of Building Engineering*, 44, 103264.
48. Abushanab, A., & **Alnahhal, W.** (2021). Numerical parametric investigation on the moment redistribution of basalt FRC continuous beams with basalt FRP bars. *Composite Structures*, 277, 114618.
49. Al-Hamrani, **A.**, **Alnahhal, W.**, & Elahtem, A. (2021). Shear behavior of green concrete beams reinforced with basalt FRP bars and stirrups. *Composite Structures*, 277, 114619.
50. Sohail, M. G., Kahraman, R., Al **Nuaimi, N.**, Gencturk, B., & Alnahhal, W. (2021). Durability characteristics of high and ultra-high-performance concretes. *Journal of Building Engineering*, 33, 101669.
51. Abushanab, A., & **Alnahhal, W.** (2021). Combined effects of treated domestic wastewater, fly ash, and calcium nitrite toward concrete sustainability. *Journal of Building Engineering*, 44, 103240.
52. Al-Hamrani, A., & **Alnahhal, W.** (2021). Shear behavior of basalt FRC beams reinforced with basalt FRP bars and glass FRP stirrups: Experimental and analytical investigations. *Engineering Structures*, 242, 112612.
53. Taha, A., & **Alnahhal, W.** (2021). Bond durability and service life prediction of BFRP bars to steel FRC under aggressive environmental conditions. *Composite Structures*, 269, 114034.
54. Abushanab, A., **Alnahhal, W.**, & Farraj, M. (2021). Structural performance and moment redistribution of basalt FRC continuous beams reinforced with basalt FRP bars. *Engineering Structures*, 240, 112390.
55. Renno, J., Sassi, S., & **Alnahhal, W.** I. (2021). Calculating the response of waveguides to base excitation using the wave and finite element method. *Journal of Vibration and Control*, 1077546320981315.
56. Al-Hamrani, A., Kucukvar, M., **Alnahhal, W.**, Mahdi, E., & Onat, N. C. (2021). Green concrete for a circular economy: A review on sustainability, durability, and structural properties. *Materials*, 14(2), 351.
57. Eltantawi, I., **Alnahhal, W.**, El Refai, A., Younis, A., Alnuaimi, N., & Kahraman, R. (2021). Bond Performance of Tensile Lap-Spliced Basalt-FRP Reinforcement in High-Strength Concrete Beams. *Composite Structures*, 114987.
58. Abushanab, A., **Alnahhal, W.**, & Farraj, M. (2021). Experimental and Finite Element Studies on the Structural Behavior of BFRC Continuous Beams Reinforced with BFRP Bars. *Composite Structures*, 114982.
59. **Al-Ansari, M. S.**, & Afzal, M. S. (2021). Structural analysis and design of irregular shaped footings subjected to eccentric loading. *Engineering Reports*, 3(1), e12283.
60. Abu Taqa, A., **Al-Ansari, M.**, Taha, R., Senouci, A., Al-Zubi, G. M., & Mohsen, M. O. (2021). Performance of Concrete Mixes Containing TBM Muck as Partial Coarse Aggregate Replacements. *Materials*, 14(21), 6263.
61. Taqa, A. A., **Al-Ansari, M.**, Taha, R., Senouci, A., Al-Marwani, H. A., Al-Zubi, G. M., & Mohsen, M. O. (2021). Characterization of TBM Muck for Construction Applications. *Applied Sciences*, 11(18), 8623
62. Kucukvar, M., Kutty, A. A., Al-Hamrani, A., Kim, D., Nofal, N., Onat, N. C., Ermolaeva, P., **Al-Ansari, M.**, Al-Thani, S. K., & Al-Jurf, N. M. (2021). How circular design can contribute to social sustainability and legacy of the FIFA World Cup Qatar 2022™? The case of innovative shipping container stadium. *Environmental Impact Assessment Review*, 91, 106665.
63. M.E.A. Ben Seghier, J.A.F.O. Corriea, J. Jafari-Asl, A. Malekjafarian, V. Plevris and N-T. Trung, "On the modeling of the annual corrosion rate in main cables of suspension bridges using combined soft

- computing model and a novel nature-inspired algorithm", *Neural Computing and Applications*, 2021. DOI: www.doi.org/10.1007/s00521-021-06199-w
64. . S. Gharehbaghi, M. Gandomi, **V. Plevris** and A.H. Gandomi, "Prediction of seismic damage spectra using computational intelligence methods", *Computers & Structures*, 253, Article ID 106584, 2021. DOI: www.doi.org/10.1016/j.compstruc.2021.106584
 65. **V. Plevris**, N.P. Bakas and G. Solorzano, "Pure Random Orthogonal Search (PROS): A Plain and Elegant Parameterless Algorithm for Global Optimization", *Applied Sciences*, 11(11), 2021. DOI: www.doi.org/10.3390/app11115053
 66. Jafari-Asl, M.E.A. Ben Seghier, S. Ohadi, Y. Dong and **V. Plevris**, "A Comparative Study on the Efficiency of Reliability Methods for the Probabilistic Analysis of Local Scour at a Bridge Pier in Clay-Sand-Mixed Sediments", *Modelling*, 2(1), pp. 63-77, 2021. DOI: www.doi.org/10.3390/modelling2010004
 67. Zhu, H., Iryo-Asano, M., **Alhajyaseen, W.** K., Nakamura, H., & Dias, C. (2021). Interactions between autonomous vehicles and pedestrians at unsignalized mid-block crosswalks considering occlusions by opposing vehicles. *Accident Analysis & Prevention*, 163, 106468.
 68. Zhu, H., Almukdad, A., Iryo-Asano, M., **Alhajyaseen, W.** K., Nakamura, H., & Zhang, X. (2021). A novel agent-based framework for evaluating pedestrian safety at unsignalized mid-block crosswalks. *Accident Analysis & Prevention*, 159, 106288.
 69. Almallah, M., Hussain, Q., **Alhajyaseen, W.** K., Pirdavani, A., Brijs, K., Dias, C., & Brijs, T. (2021). Improved traffic safety at work zones through animation-based variable message signs. *Accident Analysis & Prevention*, 159, 106284.
 70. Hussain, Q., **Alhajyaseen, W.** K., Adnan, M., Almallah, M., Almukdad, A., & Alqaradawi, M. (2021). Autonomous vehicles between anticipation and apprehension: Investigations through safety and security perceptions. *Transport policy*, 110, 440-451.
 71. **Alhajyaseen, W.** K., Almukdad, A., Hussain, Q., Almallah, M., Al Malki, M. A., Singaravelu, J., & Zammataro, S. (2021). Road safety status during COVID-19 pandemic: exploring public and road safety expert's opinions. *International journal of injury control and safety promotion*, 1-17.
 72. Ross, V., Reinolsmann, N., Lobbestael, J., Timmermans, C., Brijs, T., **Alhajyaseen, W.**, & Brijs, K. (2021). Relating Reactive and Proactive Aggression to Trait Driving Anger in Young and Adult Males: A Pilot Study Using Explicit and Implicit Measures. *Sustainability*, 13(4), 1850.
 73. **Dias, Charitha**, Noorhazlinda Abd Rahman, Muhammad Abdullah, and Nur S.A. Sukor. 2021. "Influence of COVID-19 Mobility-Restricting Policies on Individual Travel Behavior in Malaysia" *Sustainability* 13, no. 24: 13960. <https://doi.org/10.3390/su132413960>
 74. AlKhereibi; A.H., Tahmasseby, S., Mohammed; S., **Muley, D.** 2021. Blue collar laborers' travel pattern recognition: Machine learning classifier approach. *Transportation Research Interdisciplinary Perspectives*, Vol. 12, 100506. <https://doi.org/10.1016/j.trip.2021.100506>.
 75. Javid, M. A., Abdullah, M., Ali, N., & **Dias, C.** (2021). Structural Equation Modeling of Public Transport Use with COVID-19 Precautions: An Extension of the Norm Activation Model. *Transportation Research Interdisciplinary Perspectives*, 100474.
 76. Abdullah, M., **Dias, C.**, & Oguchi, T. (2021). Road Crossing at Unmarked Mid-Block Locations: Exploring Pedestrians' Perception and Behavior. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 1-18.
 77. Abdullah, M., Ali, N., Javid, M. A., **Dias, C.**, & Campisi, T. (2021). Public Transport versus Solo Travel Mode Choices during the COVID-19 Pandemic: Self-reported Evidence from a Developing Country. *Transportation Engineering*, 100078.

78. Irshidat, M. R., **Al-Nuaimi, N.**, & Rabie, M. (2021). Potential utilization of municipal solid waste incineration ashes as sand replacement for developing sustainable cementitious binder. *Construction and Building Materials*, 312, 125488.
79. Irshidat, M. R., **Al-Nuaimi, N.**, & Rabie, M. (2021). Sustainable utilization of waste carbon black in alkali-activated mortar production. *Case Studies in Construction Materials*, e00743.
80. Irshidat, M. R., **Al-Nuaimi, N.**, Ahmed, W., & Rabie, M. (2021). Feasibility of recycling waste carbon black in cement mortar production: Environmental life cycle assessment and performance evaluation. *Construction and Building Materials*, 296, 123740.
81. Sohail, M. G., Laurens, S., Deby, F., Balayssac, J. P., & **Al Nuaimi, N.** (2021). Electrochemical corrosion parameters for active and passive reinforcing steel in carbonated and sound concrete. *Materials and Corrosion*.
82. Sohail, M. G., **Al Nuaimi, N.**, Hawileh, R. A., Abdalla, J. A., & Douier, K. (2021). Durability of plain concrete prism strengthened with galvanized steel mesh and CFRP laminates under harsh environmental conditions. *Construction and Building Materials*, 286, 122904.
83. **Al Nuaimi, N.**, Sohail, M. G., Hawileh, R., Abdalla, J. A., & Douier, K. (2021). Durability of reinforced concrete beams externally strengthened with CFRP laminates under harsh climatic conditions. *Journal of Composites for Construction*, 25(2), 04021005.
84. Irshidat, M. R., **Al-Nuaimi, N.**, & Rabie, M. (2021). Hybrid effect of carbon nanotubes and polypropylene microfibers on fire resistance, thermal characteristics and microstructure of cementitious composites. *Construction and Building Materials*, 266, 121154.
85. Saleem, H., Zaidi, S. J., & **Alnuaimi, N. A.** (2021). Recent Advancements in the Nanomaterial Application in Concrete and Its Ecological Impact. *Materials*, 14(21), 6387.
86. Irshidat, M. R., **Al-Nuaimi, N.**, & Rabie, M. (2021). Microstructure and mechanical behavior of cementitious composites with multi-scale additives. *Advances in concrete construction*, 11(2), 163-171.
87. Irshidat, M. R., **Al-Nuaimi, N.**, & Rabie, M. (2021). Influence of Carbon Nanotubes on Phase Composition, Thermal and Post-Heating Behavior of Cementitious Composites. *Molecules*, 26(4), 850.
88. Du, X., & **Naji, K. K.** (2021). Civil Engineering Students' Collective Agency and Professional Identity in a Problem-and Project-Based Learning Environment: Case from Qatar. *Journal of Civil Engineering Education*, 147(4), 04021007.
89. Soliman, K., **Naji, K., Gunduz, M.**, Tokdemir, O., Faqih, F., & Zayed, T. (2021). BIM-based Facility Management Models for Existing Buildings. *Journal of Engineering Research*.
90. Chahrour, R., Hafeez, M. A., Ahmad, A. M., Sulieman, H. I., Dawood, H., Rodriguez-Trejo, S., Kassem, M., **Naji, K. K.**, & Dawood, N. (2021). Cost-benefit analysis of BIM-enabled design clash detection and resolution. *Construction Management and Economics*, 39(1), 55-72.

Top Tier Journals

Table: List of Top Tier Journals out of the publications

No.	Journal Name	No of Publications
1	Mechanical systems and signal processing	1

2	Archives of Computational Methods in Engineering	1
3	Journal of Vibration control	2
4	Hydrometallurgy	1
5	Journal of Environmental Management	1
6	Journal of Water Process Engineering	3
7	Chemical Engineering Journal	1
8	Environmental science and pollution research	1
9	Water	2
10	Chemical Engineering and processing-Process Intensification	1
11	Journal of Cleaner Production	1
12	Sensors	1
13	Engineering, Construction and Architectural Management	2
14	<i>Géotechnique</i>	2
15	<i>Geotextiles and Geomembranes</i>	2
16	<i>Journal of choice modelling</i>	1
17	<i>Computers and Geotechnics</i>	1
18	Journal of Construction Engineering and Management	1
19	Sustainability	3
20	Case Studies in Construction Materials	3
21	Road Materials and Pavement Design	1
22	Colloids and Surfaces A: Physicochemical and Engineering Aspects	1
23	Fuel	1
24	<i>Powder Technology</i>	1
25	<i>Journal of Petroleum Science and Engineering</i>	1
26	<i>Engineering Structures</i>	3
27	Structural Concrete	1
28	European Journal of Engineering Education	1
29	<i>Journal of Building Engineering</i>	3
30	Composite Structures	5
31	Materials	3
32	Environmental Impact Assessment Review	1
33	Neural Computing and Applications	1
34	Computers & Structures	1
35	Accident Analysis & Prevention	3
36	Transport policy	1
37	Construction and Building Materials	4
38	Journal of Composites for Construction	1
39	Advances in concrete construction	1
40	Molecules	1

41	Construction Management and Economics	1
	Total	67

Second Tier Journals

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

No.	Journal Name	No of Publications
1	Material Research Express	1
2	Membranes	3
3	Polish Journal of Environmental Studies	1
4	Desalination and water treatment	1
5	Journal of performance of constructed facilities	1
6	Journal of pipeline Systems Engineering and Practice	1
7	Advances in Civil Engineering	1
8	Soil Science Society of America Journal	1
9	Applied Science	2
10	International journal of injury control and safety promotion	1
11	Materials and Corrosion	1
12	Journal of Engineering Research	1
	Total	15

Other Journals

Table 9: List of other Journals out of the publications

No.	Journal Name	No of Publications
1	Transportation research Interdisciplinary Perspectives	3
2	Engineering Reports	1
3	Journal of Civil Engineering Education	1
4	Iranian Journal of Science and Technology	1
5	Modelling	1
6	Transportation Engineering	1
	Total	8

Conference Publications

1. **Al-Jurf, N.**, Kucukvar, M., Abdella, G. (2021). Optimizing University Campus Shuttle Bus Congestion Focusing on System Effectiveness and Reliability: A Combined Modeling Based-Routing Approach. MICHIGAN: IEOM Society International. Proceedings of the International Conference on Industrial Engineering and Operations Management Sao Paulo, Brazil, April 5 - 8, 2021. <http://www.ieomsociety.org/brazil2020/papers/729.pdf>
2. **Ayari, A. A.** (2021). Team Formation in Problem-Based Learning (PBL): A Reflective Analysis. Yes, based on research paper work. Conference: Education, Engineering Education and Instruction Technology Conference (EEEITC 21), College of Engineering, Qatar University, Doha, Qatar. 22-23 February 2021.
3. **Elshafei, S., Hussein, M.F.M.**, Renno, J., Muthalif, A., (2021). Energy harvesting from railway vibrations – A numerical study based on beam-on-elastic-foundation under quasi-state loading, the 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 28-30 June.
4. **Hussein, M. F. M.** (2021). The use of flipped-class rooms for university engineering students, Abstract and Presentation at EEEITC Conference: Education, Engineering Education and Instruction Technology Conference (EEEITC 21), Doha, Qatar, 22-23 February 2021.
5. Faustin, N., **Elshafie, M. Z. E. B.**, Mair, R. (2021). Development of a new excavation technique for centrifuge testing in sand (9780429321559th ed.). CRC Press Taylor and Francis.
6. Badri, Y., Syam, T., Sassi, S., **Hussein, M.F.M.**, Renno, J., and Ghani, S., (2021). Numerical study on the damping characteristics of a shock absorber valve utilizing different velocities through CFD analysis, the 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 28-30 June.
7. Abukeshek, A. K., Abdella, G. M., **Gunduz, M., & Naji, K.** (2021). Analysis of Construction Critical Success Factors (CSF) for Public-Private Partnership (PPP) for Sports Infrastructure in Qatar Using Relative Importance Index. First Central American and Caribbean International Conference on Industrial Engineering and Operations Management, Port-au-Prince, Haiti, June 15-16, 2021
8. **Ebead, U. A. A., Naji, K. K.**, Tarlochan, F., Al-Ali, A. K. A. M., & Du, X. (2021). Development of diverse assessment methods for pbl implementation at a course level in engineering education in qatar. 8th International Research Symposium on Problem-Based Learning, IRSPBL 2021Virtual, Online15 - 17 August 2021.
9. Al-Hamrani, A., & **Alnahhal, W.** (2021, December). The Influence of Reinforcement Ratio on the Shear Behaviour of Sand Coated Basalt FRP Bars Reinforced Beams. In International Conference on Fibre-Reinforced Polymer (FRP) Composites in Civil Engineering (pp. 973-979). Springer, Cham.
10. **Muley, D.**, Kharbeche, M., Ghonim, O., Madkour, A., & Mohamed, Y. (2021). Does Pedestrian Penalty Affect Pedestrian Behavior? A Case of State of Qatar. Procedia Computer Science, 184, 234-241. The 12th International Conference on Ambient Systems, Networks and Technologies (ANT), Warsaw, Poland, March 23-26, 2021.
11. J. Jafari-Asl, M. El Amine Ben Seghier, S. Ohadi and **V. Plevris**, "Soft computing framework for the uncertainty-based optimization of the length and height of ogee-crested spillway", 14th ECCOMAS Thematic Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control (EUROGEN 2021), Streamed from Athens, Greece, 28-30 June 2021.

12. G. Solorzano and **V. Plevris**, “Design of Reinforced Concrete Isolated Footings under Axial Loading with Artificial Neural networks”, 14th ECCOMAS Thematic Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control (EUROGEN 2021), Streamed from Athens, Greece, 28-30 June 2021.
13. S. Sharib, N. Ahmad, **V. Plevris** and A. Ahmad, “Prediction Models for Load Carrying Capacity of RC Wall through Neural Network”, 14th ECCOMAS Thematic Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control (EUROGEN 2021), Streamed from Athens, Greece, 28-30 June 2021. DOI: www.doi.org/10.7712/140121.7956.18529
14. **V. Plevris** and G. Solorzano, “Prediction of The Eigenperiods of MDOF Shear Buildings using Neural Networks”, 8th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021), Streamed from Athens, Greece, 28-30 June 2021. DOI: www.doi.org/10.7712/120121.8755.20415
15. Shabani, M. Skamantzari, S. Tapinaki, A. Georgopoulos, **V. Plevris** and M. Kioumarsis, “3D simulation models for developing digital twins of heritage structures: challenges and strategies”, 4th International Conference on Structural Integrity (ICSI2021), Streamed (Virtual Conference), 30 August – 2 September 2021.
16. Shabani, H. Hosamo, **V. Plevris** and M. Kioumarsis, “A preliminary structural survey of heritage timber log houses in Tønsberg, Norway”, 12th International Conference on Structural Analysis of Historical Constructions (SAHC 2021), Barcelona, Spain, 29 September – 1 October 2021.
17. Shabani, **V. Plevris** and M. Kioumarsis, “A comparative study on the initial in-plane stiffness of masonry walls with openings”, 17th World Conference on Earthquake Engineering (17WCEE), Sendai, Japan, 27 September – 2 October 2021

Conferences references in Web of science

Table: List of Top Tier Conferences

No.	Conference Name	No of Publications
1	12th International Conference on Structural Analysis of Historical Constructions (SAHC 2021), Barcelona, Spain, 29 September – 1 October 2021.	1
	Total	1

Conferences references in Scopus

No.	Conference Name	No of Publications
1	8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (COMPDYN)	3
2	8th International Research Symposium on Problem-Based Learning, IRSPBL	1
3	In International Conference on Fibre-Reinforced Polymer (FRP) Composites in Civil Engineering	1
4	12th International Conference on Ambient Systems, Networks and Technologies (ANT), Warsaw, Poland	1

5	14th ECCOMAS Thematic Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control (EUROGEN 2021), Streamed from Athens, Greece	3
6	4th International Conference on Structural Integrity (ICSI2021), Streamed (Virtual Conference), 30 August – 2 September 2021	1
7	Proceedings of the International Conference on Industrial Engineering and Operations Management	1
8	Proceedings of the 10th International Symposium on Geotechnical Aspects of Underground Construction in Soft Ground, IS-CAMBRIDGE 2022	1
	Total	12

Others

No.	Conference Name	No of Publications
1	First Central American and Caribbean International Conference on Industrial Engineering and Operations Management	1
2	17th World Conference on Earthquake Engineering (17WCEE), Sendai, Japan, 27 September – 2 October 2021	1
3	Education, Engineering Education and Instruction Technology Conference (EEEITC 21), Doha, Qatar 22-23 February 2021	2
	Total	4

Book Chapters

- Shahin, M., Abdullah, M., **Muley, D.**, and Dias, C. 2021. Case studies on COVID-19 and environment. COVID-19 in the Environment, © Elsevier 2021. (Accepted), Ch 13

Book Reviews

Elshafie, M., Viggiani, G., & Mair, R. (2021). Geotechnical Aspects of Underground Construction in Soft Ground: Proceedings of the Tenth International Symposium on Geotechnical Aspects of Underground Construction in Soft Ground, IS-Cambridge 2022, Cambridge, United Kingdom, 27-29 June 2022. CRC Press.

Technical Reports Editorials and Essays

Nil

Appendix A2- Seminars – Public Lectures – Short Courses

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

Dr. Usama Ebead:

Sustainability of Reinforced Concrete Structures, November 21, 2021, Qatar University.

Dr. Murat Gunduz

Webinar: Current Trends in Construction Industry, delivered on 10-03-2021, online

Dr. Charitha Dias

Presentation title: Crowd Management at Souq Waqif during Special Events
Presented at: Online Workshop on Crowd Management and Crowd Safety During Mega Events, Date: 28th April, 2021

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

Dr. Mohammed Hussein

Energy harvesting from railway vibrations – A numerical study based on beam-on-elastic-foundation under quasi-state loading, the 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 30 June 2021 (Online).

Dr. Charitha Dias

- Presentation title: Crowd Management at Tourist Attractions During Special Events: The Case of Souq Waqif during FIFA 2022.
- Presented at: Webinar at ITS Japan - International committee meeting of ITS Japan, Date: 29th January, 2021.
- Presentation title: Microscopic Pedestrian Simulation Models: Concepts and Applications. Presented at: Civil Engineering Seminar, Sri Lanka Institute of Information Technology (SLIIT), Sri Lanka Date: 25th May, 2021.

Short Courses Delivered by Departmental Staff Members

Seminars and Public Lectures Attended by Departmental Staff Members

Dr. Okan Sirin:

- Elsevier Author Workshop for ECR & students: How ScienceDirect can be helpful for increasing your scientific productivity & publications, October 27, 2021, Qatar University, Doha, Qatar.

Dr. Mohamed Elshafie

- Risk Identification and Management process – Eng Suhaib Omer (24th August 2021)
- Entrepreneurship Skills in Senior Design Project (24th August 2021)

Dr. Deepti Muley

- Sustainable Mobility Initiatives in Qatar: Emerging Technologies online on 7th Sep 2021
- Introductory session on updates for the Graduate assistantship position online on 24th Aug 2021
- Crowd Management and Crowd Safety During Mega Events online on 28th Apr 2021
- Challenges and Trends in Research Grants online on 4th March 2021
- IRBNet demo session online on 22nd Feb 2021

Seminars and Public Lectures Delivered by Visiting Academics and Professionals

Railway Trackwork – A client perspective, A presentation by Michael Cowan from Qatar Rail to the students of Railway Track Engineering, 15 November 2021.

Invited Public Lectures/Keynote Speakers

Dr. Mohamed Elshafie

Elshafie, M. Z. E. B. (Author & Presenter), Institution of Civil Engineers in Qatar December 2021
Learned Event: How Good are Our Piles? A New Assessment Approach Using Modelling and Thermal Integrity Testing, "How Good are Our Piles? A New Assessment Approach Using Modelling and Thermal Integrity Testing," Other, Online, Qatar. (December 12, 2021

Appendix-A3-Faculty-Activities

Teaching and learning

Dr. Mohammed Hussein:

Hussein, M.F.M., The use of flipped-class rooms for university engineering students, Presentation at EEEITC Conference: Education, Engineering Education and Instruction Technology Conference (EEEITC 21), Doha, Qatar, 23 February 2021.

Dr. Usama Ebead:

- CVEN 422, Design of Reinforced Concrete Structure, Spring 2021, Project Based Learning.
- CVEN 320, Design of Reinforced Concrete Members, Fall 2021, Project Based Learning.
- Dr. Usama gave a talk in the 8th International Research Symposium on PBL, IRSPBL 2021, held in Aalborg University, Aalborg, Denmark, August 15-17. The talk was titled "Development of diverse assessment methods for PBL implementation at a course level in engineering education in Qatar.

Dr. Wael Alhajyaseen

- CVEN 660 (Advanced Traffic Engineering), Spring 2021, discussion forum and flipped classroom activity
- CVEN 662 (Traffic Safety Analysis), Fall 2021, discussion forum and flipped classroom activity

Dr. Deepti Muley

- CVEN461-Fall 2021: Students were introduced to two software packages, VISSIM and VISUM.
- Also, a guest lecture was arranged on Intelligent transport systems.

Dr. Alaa Al-Hawari

CVEN350, Project Based Learning

Dr. Arslan Ayari

CVEN350, Project Based Learning

Dr. Mohamed Elshafie

- Game Based Learning (GBL) for CVEN 214 Strength of Materials class. Playing is one of the most important learning strategies for young children and it is also used in primary and secondary education. Adoption in Higher Education is less so. Game Based Learning (GBL) creates a specific learning scenario within a game context. The main features of a game include an unknown outcome, multiple paths and collaboration, which are all attributes we would like to consider in HE teaching. The competitive nature of games also provides fun.
- CVEN214, Game Based Learning

Dr.Hisham Eid

- CVEN 230, CVEN 430 (Spring 2021)
- CVEN 330, CVEN 630 (Fall 2021)
- Prepared unique and very detailed book-like handouts/lectures that have been distributed to undergraduate and graduate students.

Consultancy:

Dr. Mohamed Elshafie

Pro Designers Consultancy starting from August 2021.

Dr. Hisham Eid

Consultancy on stability of construction of a seven-storey building (with underground car parking) in close proximity to Doha Metro tunnels, Pro Designers Consultancy Qatar, August 1, 2021. Current

Dr. Mohammed Hussein:

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

Dr. Wael I. Alnahhal

- Eithad Steel Company, Develop and maximize collaborations with the industry
- Committee Chair, High School Wooden Bridge Competition-2022
- Member of Engineers of the Future.
- Guest Speaker in Sustainability of concrete structures seminar
- Committee Chair 8TH Virtual High School Wooden Bridge Competition

Dr. Murat Gunduz:

- Workshop Organizer in Value engineering training to ASHGHAL engineers
- Preparation of CM questions for National committee for engineers classification
- Session Chair, Panel Moderator for Construction Week Leaders in Construction Qatar Summit
- Expert witness for court case

Dr. Usama A. A. Ebead

- Provided an article in Alraya newspaper.

Dr. Mohammed Z. E. B. Elshafie

- Training for Engineers at PWA
- Committee Member: Ministry of Municipality and Environment

Professional Service:

Dr. Mohammed Hussein:

1. Member of the Editorial Board for Transportation Geotechnics Journal, March 2021- current.
2. Peer Reviewer for high quality journals including: Journal of Sound and Vibration, Engineering Structures, Soil Dynamics and Earthquake Engineering, Tunnelling and Underground Space Technology, Journal of Rail and Rapid Transit, Applied Mathematical Modelling, Applied Acoustics
3. **Dr. Murat Gunduz:**
4. Associate Editor, ASCE Journal of Management in Engineering.
5. Member of Value engineering training to ASHGHAL engineers
6. Journal Editor of ASCE Journal of Management in Engineering Editorial Board Meeting
7. Attendee of Research Outcome Seminar (ROS) on Artificial Intelligence –QNRf
8. Board Member of ASCE Journal of Management in Engineering Editorial Board Meeting Online
9. Attended of Blended Learning: Future Visions and Insights- National Centre for Educational Development and QU College of Education
10. Attended COVID-19: The medical response and the impact on Infrastructure projects, Dr. Surya Sethumadavan (the Public Works Authority)
11. Attended “What Students Wish Their Professors Knew- Online Panel - The Chronicle”
12. Attended “Webinar, LCI-Qatar- Logistics and Supply Chain Management”
13. Chair of Best paper selection committee ASCE Journal of Management in Engineering
14. Board Member of ASCE Editorial Board Meeting
15. Board Member of Associate Editor , ASCE Journal of Management in Engineering
16. Participant in the Seminar: Recognizing Lean Transformation, Qatar University
17. Participant in the event “ Big 5 Construct Qatar”
18. Participant in Lean Construction Institute meeting
19. Committee Member in Cyprus International University
20. Participant in Vital Source Workshop
21. Participant in Seminar:Learner-Centered Teaching (PBL in particular)
22. Technical Committee Member for EURO-MED-SEC-2 Conference
23. Participant in Workshop on Road Freight Transport and Safety
24. Participant Construction Week Qatar: Health & Safety Breakfast Briefing
25. Reviewed a book proposal for Taylor and Francis
26. Editor, Associate Editor for ASCE
27. Member of ASCE Journal of Management Editorial Board Meeting
28. Board Member in ASCE Journal of Management Editorial Board Meeting
29. Member of ASCE American Society of Civil Engineers
30. Board Member of 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.
- External Examiner for a project for the Czech Science Foundation "Polynomial optimization in the design of globally optimal frame structures under dynamic loads"
- Chief Editor of Computational Methods in Structural Engineering, specialty section of the journal Frontiers in Built Environment, by Frontiers
- Associate Editor in the following scientific journals:
 1. 06/2021 – today Associate Editor of the Practice Periodical on Structural Design and Construction, by ASCE (ISSN 1084-0680)
- I serve as member of the editorial board in the following journals:
 1. Advances in Civil Engineering, by Hindawi (ISSN 1687-8086)
 2. Buildings (Topic: Building Structures), by MDPI (ISSN 2075-5309)

3. Engineering Proceedings, by MDPI (ISSN 2673-4591)
4. Environmental Sciences Proceedings, by MDPI (ISSN 2673-4931)
5. Frontiers in Materials: Mechanics of Materials, by Frontiers (ISSN 2296-8016)
6. Heliyon: Engineering, by Cell Press (ISSN 2405-8440)
7. Heritage: Architectural Heritage, by MDPI (ISSN 2571-9408)
8. J. of Applied and Computat. Mechanics, by Shahid Chamran Univ. of Ahvaz (ISSN 2383-4536)
9. Proceedings, by MDPI (ISSN 2504-3900)
10. The Open Civil Engineering Journal, by Bentham Open (ISSN 1874-1495)
11. The Open Construction & Building Technology Journal, by Bentham Open (ISSN 1874-8368)

Dr.Riyadh Alraoush

- Peer Review/Judge of Geoderma Journal.
- Editorial Board Member Journal of Pollution Prevention and Control
- Review/Judge Member for Journal of Porous Media
- Professional Affiliation Member for Professional Civil Engineer (PE) in the state of Louisiana, USA (License # PE.0033258)
- Professional Affiliation Member for Soil Science Society of America (SSSA)
- Peer Review/Judge for Kuwait University Department of Civil Engineering “External Examiner of Msc thesis "Daily time scale for joint probability of rainfall depth and wind speed”.
- Peer Review/Judge for Kuwait University Department of Civil Engineering, “External Examiner of Master’s thesis "Water security for Kuwait: An alternative seawater intake location for continuous water supply

Dr.Alaa Alhawari

- Peer Review/Judge for Separation and Purification Technology Journal “Reviewed the following paper: Manuscript Number: SEPPUR-D-21-06496 Comparison of Reverse Osmosis and Nanofiltration Membranes in Water Purification Process”.
- Reviewer for Membranes Journal “Review of the following paper: Manuscript ID: membranes-1517544 Title: Preparation and characterization of the forward osmosis membrane modified by MXene nano-sheets Authors: Yuqi Nie, Chaoxin Xie, Yi Wang.
- Reviewer for the Chemosphere Journal Reviewed the following paper: Title: Enhanced water flux and bacterial resistance in cellulose acetate membranes with quaternary ammoniumpropylated polysilsesquioxane Authors: Ravi Prakash Pandey; Parashuram Kallem; P. Abdul Rasheed; Khaled A. Mahmoud; Fawzi Banat; Woei Jye Lau; Shadi W. Hasan Article
- Reviewer for Journal of Chemical Papers, Reviewed the following paper: "Box-Behnken design assisted by theoretical mass and heat transfer using for multi-responses optimization of membrane distillation process" Chemical Papers Journal

Dr. Wael I. Alnahhal

- Reviewer, Journal Article, International Journal of Concrete Structures and Materials
- Reviewer, Journal Article Journal of Materials in Civil Engineering
- Committee Member, Written and Oral Comprehensive Exam for PhD Student Hazem M. Al Nawaiseh
- Reviewer, Journal Article, International Journal of Applied Mechanics

- Reviewer, Journal Article, Journal of Construction and Building Materials

Dr. Arslan A. Ayari

- Member of American Society of Civil Engineers 2021
- Member of Environmental and Water Resources Institute
- Reviewer of “ Journal of Cleaner Production”
- Reviewer of “ASME Journal of Engineering for Sustainable Buildings and Cities”

Dr. Usama A. A. Ebead

- Peer Reviewer of “ACI structural Journal”
- Peer Reviewer A reviewer for ICE Publishing journals
- Editorial Review of ICE Structures and Buildings Journal, London, UK
- Peer Reviewer Structures and Building journal
- Reviewer ACI Journal, Engineering structures and other journals.
- Committee Member of ACI Committee 549, Thin Reinforced Cementitious Products and Ferrocement
- Member of American Concrete Institute
- Peer Reviewer American Society of Civil Engineers
- Member of Structural Engineering
- Seminar Organizer Sustainability of Reinforced Concrete Structures :Qatar University
- Speaker of the 8th International Research Symposium on PBL, IRSPBL 2021, held in Aalborg University, Aalborg, Denmark,

Dr. Mohammed Elshafie

- Supervisor of Established with QU students the first ICE Student Chapter in Qatar
- Task Force Member of International Society for Structural Health Monitoring of Intelligent Infrastructure.

Dr. Okan Sirin

- Board Member in Advances in Civil Engineering Journal

Dr. Hisham Eid

- Review papers for several international geotechnical and geology Journals

Dr. Wael Alhajyaseen

- Member of the Editorial Board for International Journal of Injury prevention and Safety Promotion, Jan 2020- current.
- Chair "Traffic Safety Analysis & Policy" Special Interest Group, World Conference on Transport Research Society, May 2019- current.
- Member of National Coordinators Committee for the National Traffic Safety Strategy of State of Qatar, representing Qatar University, March 2016 - current.
- Member of Expert Advisory Committee, i-Dreams project, European Union’s Horizon 2020 research and innovation programme, May 2019-current.
- Member of National Traffic Safety Curriculum Committee, formed by the Ministry of Interior of the State of Qatar, representing Qatar University., May 2019-current.

- Peer Reviewer for high quality journals including: Accident Analysis & Prevention, IEEE Intelligent Transportation Systems Transactions , Transportation Research Part A, Transportation Research Part F, Traffic Injury Prevention, IATSS Research, Case Studies on Transport Policy, and others.

Awards and Achievements

Dr. Deepti Muley

Best poster award during QUARF- Undergraduate student, and graduate student

(Dr. Al-Raoush, Dr. Ebead, Dr. Hussein)

Were honored by QU President, in April 2021, among the distinguished scientists who have made remarkable efforts and achieved outstanding recognition in their field of study. The honored academics are those from QU among the 2% highly cited of scientists in the world in 2019, with one of the members listed among the top 2% for career-long citation impact until 2019 (Dr. Ebead).

- The same members were listed again in the 2020 list of the 2% highly cited of scientists in the world.

Conferences Attended:

Dr. Mohammed Hussein:

EEEITC Conference: Education, Engineering Education and Instruction Technology Conference (EEEITC 21), Doha, Qatar, 23 February 2021.

The 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn), Crete, Greece, 28-30 June 2021 (online).

The First Arab Universal Design for Learning Conference: Scientific Perspectives for the future of Inclusive Education in Arab Countries, 14-17 November 2021 (online).

Dr. Wael Alnahhal:

- 11th International Advances in Applied Physics & Materials Science Congress & Exhibition (APMAS2021), 17 to 23 October 2021 in Fethiye - Mugla, Turkey

Dr. Vagelis Plevris:

- Attended several scientific conferences in 2021, for details, see the published conference papers above.

Dr. Charitha Dias

- Attended 10th Pedestrian and Evacuation Dynamics Conference (2021), Nov 28, 2021 – Nov 30, 2021, Venue: Online (broadcast from Australia) Role: International Committee Member.

Workshop, Training, and Visits Attended

Dr. Mohammed Hussein:

- Accounting for Health and Safety in Temporary Work Design Management, 8 Nov 2021, Qatar University.
- Engineering Contracts, Lecture organized online by Qatar Society of Engineers, 18 October 2021.

- Aligning the CENG programs with QU qualifications framework, The Center for Excellence in Teaching and Learning (CETL), Qatar University, online, 14 September 2021.
- Risk Identification and Management process, 24 August 2021, Qatar University (online).
- A brief introduction to wireline, Lecture organized online by Qatar Society of Engineers, 22 June 2021.
- Current Trends in AEC Industry, 10 March 2021, Qatar University.
- Stress Management Techniques During Work, 13 January 2021, Qatar University (online).
- EEEITC Conference: Education, Engineering Education and Instruction Technology Conference (EEEITC 21)
- QSE workshop: A brief introduction to wireline, Lecture organized online by Qatar Society of Engineers
- The 8th International Conference on Computational methods in Structural Dynamics and Earthquake Engineering (Compdyn)

Dr. Wael Alnahhal:

- Workshop: Sustainability of Reinforced Concrete Structures, 18-11-2021, Qatar University
- Seminar title: Sustainable Concrete Using Locally Discarded Materials, Treated Municipal Wastewater, and FRP Reinforcements
- Industrial Seminar for the students of steel course CVEN420 by Eithad Steel Factory. Title: Steel, from idea to reality, November 24, 2021
- Seminar, JOVE videos for Research and Education, Qatar.
- Seminar, حقوق الملكية الفكرية للمؤلف الجامعي وواجباته, Qatar.
- Seminar, The 12th Excellence Day, Qatar.

Dr. Murat Gunduz:

- Value engineering training to ASHGHAL engineers, 31-05-2021
- PBL Plan Seminar, Qatar University
- Value engineering training to ASHGHAL engineers
- Attended Blended Learning: Future Visions and Insights- National Centre for Educational Development and QU College of Education
- Attended COVID-19: The medical response and the impact on Infrastructure projects, Dr. Surya Sethumadavan (the Public Works Authority)
- Attended "What Students Wish Their Professors Knew- Online Panel - The Chronicle" seminar
- Attended "Webinar, LCI-Qatar- Logistics and Supply Chain Management"
- Attended " Bridging the Gap , Lean Construction Institute" Seminar
- Attended "PBL Seminar: Sharing Experiences and Future Outlook for The College"

Dr. Vagelis Plevris:

- 17th World Conference on Earthquake Engineering (17WCEE) Japan
- 12th International Conference on Structural Analysis of Historical Constructions (SAHC 2021) Spain
- 4th International Conference on Structural Integrity (ICSI2021) Portugal
- 14th ECCOMAS Thematic Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control (EUROGEN 2021) Greece
- 8th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021) Greece
- Advancements in numerical modelling and seismic intervention techniques of historical

masonry structure, Greece

Dr. Okan Sirin

- Constructing the Future Entertainment Destination in Qatar
- Elsevier Author Workshop for ECR & students: How ScienceDirect can be helpful for increasing your scientific productivity & publ

Dr. Riyadh I. Al-Raoush

- Visit to Louisiana State University to discuss possible research collaboration
- University of Tennessee to discuss possible research collaboration
- Mathematical Modeling with MATLAB Products - Online Training Programs
- Parallel Programming with MATLAB- Online Training Programs
- Maintained a Professional Engineering License in the State of Louisiana, USA (Active License # PE.0033258)

Dr. Alaa AlHawari

- 2nd International Conference on Sustainable Energy Water and Environment Nexus in Desert Climates 2021, Qatar.
- Seminar - Emerging and Enabling Materials, Qatar.
- Conference Participation: 6th Green & Sustainable Chemistry Conference, Germany.
- Workshop- "15 years of Nature Nanotechnology ", United States.
- Symposium - Qatar University Annual Research Forum & Exhibition 2021, Qatar.
- ABET Workshop, Qatar.
- Development of bioreactor system for GTL process water treatment, Qatar
- Development of a Novel Polymer Gel System for Enhancing Wellbore Stabilization and Strengthening of Qatari Oil and Gas Wells, Qatar.
- Education, Engineering Education and Instruction Technology Conference ((EEEITC21'), Qatar.

Dr. Arslan A. Ayari

- Training: Hybrid teaching with Echo360: an introductory training course. Qatar.
- Seminar: Redesigning Higher Education -Shaping the Future, Qatar.
- Training: Qatar University Faculty Pedagogical Development Program 2021, Qatar.
- Workshop: Educational Research in Higher Education, Qatar.
- Workshop: Addressing QU's Education Excellence Framework, Qatar.
- Workshop: Technology Integration in Higher Education, Qatar.
- Workshop: Assessment and the Constructive Alignment with ILOs, Qatar.
- Workshop: Designing Student-Centered Learning (e.g. Problem and Project-Based Learning), Qatar.
- Workshop: University Pedagogy and Student-Centered Learning, Qatar.

Dr. Usama A. A. Ebead

- Workshop: Sustainability of Reinforced Concrete Structures, Qatar.
- Conference Participation: 8th International Research Symposium on Problem-Based Learning, IRSPBL 2021Virtual, Online15 - 17 August 2021. Denmark.

Dr. Mohammed Z. E. B. Elshafie

- Seminar: Entrepreneurship Skills in Senior Design Project, Qatar.
- Workshop: Risk Identification and Management process - Eng Suhaib Omer, Qatar.
- Delivered four training workshops for Ashghal's Engineers as follows:

- Project Operations and Management (1st March 2021)
- Project Operations and Management (29th March 2021)
- Project Operations and Management (31st May 2021)
- Systematic Risk Assessment (28th June 2021)

Events Organized

Dr. Okan Sirin

Organized a session (Construction Materials) in a conference, Online Conference on Enabling and Emerging Materials, November 22-24, 2021, Session Moderator (Also organizing committee member).

Dr. Vagelis Plevris:

Mini-symposium "Advancements in numerical modelling and seismic intervention techniques of historical masonry structures" (MS4), at the 8th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021), Athens, Greece, 21 - 23 June 2021. Organizers: F. Clementi, N. Cavalagli, A. Formisano, G. Milani, V. Plevris.

Dr. Charitha Dias

- Organizer/ Coordinator of the Qatar University College of Engineering/ QTTSC booth at the Transport Engineering Conference and Exhibition organized by Qatar Society of Engineers on: 4-6 October 2021.

Dr. Deepti Muley

- Organized world day of remembrance for road traffic victims. – 21st November 2021- Lead organizer.

Dr. Wael Alhajyaseen

International Online Training Program entitled "Introduction to Road Safety Audits". Organized in collaboration with the International Road Federation, Work Conference on Transport Research Society, held between 9-11 Oct. 2021.

Students' Activities

- The Department communicated with the students and completed the process of appointment of new student committees for the ASCE and the ICE chapters in fall 2021. The chapters has started working, with the ASCE chapter organizing a site visit in November 2021.
- The senior design students in the department participated in the Exhibition of Build Your House from 28-30 March 2021
- The senior design students in the department participated in the Transport Engineering Conference & Exhibition from 4-6 October 2021
- A number of Civil Engineering graduate students participated in Annual Research Forum & Exhibition on the 20th of Oct 2021. The Civil Engineering PhD student, Eng. Tadesse Wakjira, won the Research Poster Award in Information & Communication Technologies – Graduate students, as part of research collaboration.

Site visits organized for students:

Dr. Okan Sirin

- A construction site visit was organized for students taking CVEN 210 Properties and Testing of Materials course. Doha, Qatar (Al Mamoura Mosque), November 13, 2021, CVEN 210.

Dr. Vagelis Plevris:

- Visit to a warehouse building under construction with the students doing the Senior Design Project 1 (group of 4 students), CVEN 401, Date of visit: 9 October 2021.

Other Activities:

Dr. Vagelis Plevris:

Member of the Scientific Committee of the “14th International Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control” (EUROGEN 2021), Athens, Greece, 17-19 May 2021.

Organization of special issues and research topics in scientific journals:

1. Special issue “Modern Solutions to Civil Engineering Problems Based on Soft Computing Techniques” (2021), Journal: Advances in Civil Engineering, by Hindawi. Topic Editors: Afaq Ahmad, Vagelis Plevris and Abdul Razzaq Ghumman.
2. Research topic “Artificial intelligence (AI) Applied in Civil Engineering” (2021), Journal: Applied Sciences, by MDPI. Topic Editors: Nikos D. Lagaros and Vagelis Plevris.
3. Research topic “Horizons in Built Environment” (2021), Journal: Frontiers in Built Environment, by Frontiers. Topic Editors: Izuru Takewaki, Ian F.C. Smith, Joan Ramon Casas, Forrest J. Masters, Gregory A Kopp, Vagelis Plevris and George Tsiatas.
4. Special issue “Advanced Concrete and Construction Materials” (2021), Journal: Sustainability, by MDPI. Topic Editors: Mahdi Kioumars and Vagelis Plevris.

Dr. Wael Alnahhal:

Dr. Wael Alnahhal Delivered a presentation Titled “Example of steel structures in Qatar” to Civil Engineering students.

Seminars & Trainings:

❖ Orientation and Welcoming Event

The Orientation and welcoming of Civil Engineering students was held Online on Monday 16 August 2021, It started with a Welcome message by the Dean of the College of Engineering Dr. Khalid Kamal Naji, and then a Video was projected about Civil Engineering program as described by Civil Students, after the video The CAE Head of Department Dr. Mohammed Hussein presented an Introduction about the Civil Engineering program, Followed by Information about topics with the Civil Engineering program in:

- o Structural Engineering, Dr. Wael Alnahhal
- o Geotechnical Engineering, Dr. Hisham Eid
- o Environmental and Water Engineering, Dr. Alaa Al-Hawari
- o Construction Management, Dr. Murat Gunduz
- o Pavement and Transportation Engineering, Dr. Okan Sirin

The orientation ended with Announcement of upcoming Activities, Promotional video for Civil Engineering and Honoring Students who Attended Civil Engineering Department Workshops.

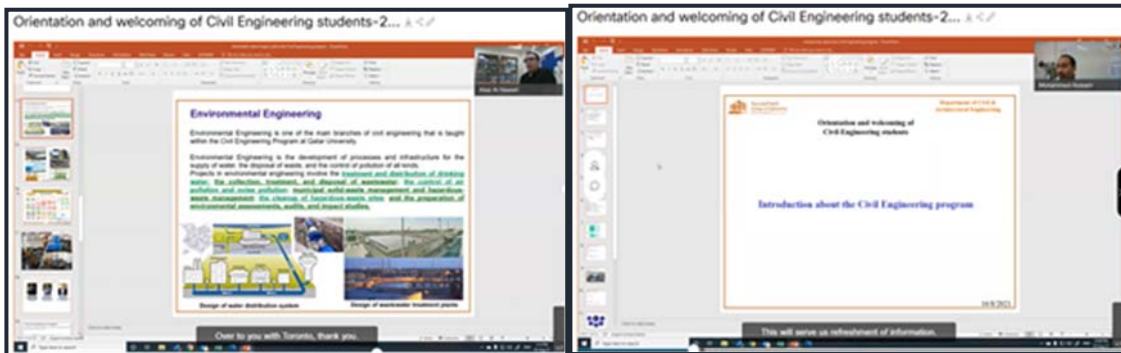


Figure 25 – Orientation and Welcoming Event

❖ Risk Identification and Management process 24-08

Eng. Suhaib Amer, Risk Manager in Roads Program management in (Ashghal Projects), delivered an online workshop on “Risk Identification and Management process” on August 24 2021. Eng. Suhaib holds RMP (Risk Management Professional) and PMP (Project Management Professional) certificates from PMI and member since 2014, In addition to the CCP certificate from American Association of Cost Engineers. The session discussed the definition and importance of risk management and the approach to implement risk management in projects; including the risk register and type of risks with the classification. The process of risk management as globally applied, with showing the P/I matrix and how to classify the risks. The presentation focused at the end on different methods of how to mitigate the risks showing the methods applied in projects. The presentation concluded by providing a summary about one system currently used to implement the risk management.



Eng. Suhaib Amer
Risk Manager - Roads Program Management
(Ashghal Projects)

Eng. Suhaib Amer has rich experience in Construction projects and Oil & Gas projects, he started work in construction from 2005, and in Oil & Gas projects in Qatar from 2009 to the present. He worked as Risk Manager and now with one of leading consultants in Qatar as Risk Manager in Roads Program Management.

Eng. Suhaib holds RMP (Risk Management Professional) and PMP (Project Management Professional) certificates from PMI and member since 2014, in addition to the CCP certificate from American Association of Cost Engineers.

THE DEPARTMENT OF CIVIL AND ARCHITECTURAL ENGINEERING INVITES YOU TO ATTEND THE INDUSTRIAL WORKSHOP ENTITLED

Risk Identification and Management process

DAY & DATE: Tuesday, 24 August 2021

VENUE: Online (Link will be sent to those with confirmed registration).
Registration: [Please click here](#) (or scan the QR code)

SCHEDULE OF WORKSHOP:
6:30pm: Start of workshop
7:15pm: Q&A session
7:30pm: End

ABSTRACT
The presentation will start about the definition of risk management and why it is important. It will then provide information about proactivity in risk thinking, improved project control through risk management, then will speak about risk and issue differences, with some examples. The presentation will provide a summary about approach to implement risk management in projects, including the risk register and type of risks with the classification. The process of risk management as globally applied, then showing the P/I matrix and how to classify the risks. The presentation will focus at the end on different methods of how to mitigate the risks showing the methods applied in projects. The presentation will be concluded by providing a summary about one system currently used to implement the risk management.

For enquiries, please email civ@ua.edu.qa

What is RISK ???

Risk is an unexpected event.
Within Project, **RISKS** are unplanned events or conditions that can have a positive or negative effect on its success.

- Definition ISO 31000 –Risk Management principles & guidelines:

RISK = Effect of Uncertainty on Objectives

- Risk = (probability of an accident) x (losses per accident)

While almost all risk are seen as threats, risk gives you opportunities also.

https://www.mckinsey.com~/media/mckinsey/dotcom/client_service/Risk/Working%20papers/43_Getting_to_ERM.pdf

This now we come to the definition, or what, oh, what is this.

Risk Management

Risk Identification and Process - In Construction Projects

Suhaib Amer CCP PMP-RMP PMS-NEE
Suhaib.Amer@thruos.com

August 2021

For us to thanks so much for this opportunity.

Figure 26 – “Risk Identification and Management process” Workshop

❖ **Presentation to Foundation Students - Fall 2021**

The Department of Civil and Architectural Engineering organized “Presentation to Foundation Students” event to introduce the field of civil engineering and to share some introductory materials about the field of civil engineering to the foundation students. Event was held on Monday 20 September 2021 Online.



Figure 27 – “Presentation to Foundation Students” 2021

❖ **Accounting for Health and Safety in Temporary Works Design Management**

Eng. Umar Puthukkudi HSE Manager-Highway Projects Department, Ashghal, Eng. Ryan Palpal Latoc Geronimo Safety Engineer-Highway Projects Department, Ashghal and Eng. Noushad Moideenkutty Safety Engineer-Highway Projects Department, Ashghal Delivered a presentation on “Accounting for Health and Safety in Temporary Works Design Management.” On Monday 08 November 2021 in Ibn Khaldoon Hall-Qatar University. The engineers discussed the expression “Temporary works” as its widely used in the construction industry for an "engineered solution" used to support or protect an existing structure or the permanent works during construction. The construction of most types of permanent works will require the use of some form of temporary works. They placed Examples of temporary works include, Earthworks - trenches, excavations, temporary slopes and stockpiles. Structures - formwork, falsework, propping, façade retention, needling. Equipment/plant foundations - tower crane bases, supports, anchors and ties for construction hoists and mast and many other aspects.



Figure 28 – Accounting for Health and Safety in Temporary Works Design Management

❖ **Karak and PM in 60 min or Less**

Karak and PM in 60 min or Less event was held on Tuesday 26 October 2021 in Building (I10), Auditorium-Qatar University. The event hosted three speakers' representing major organizations in Qatar, Ms. Shaikha Basahal Head of Training and Organizational Development in Public Works Authority (Ashghal) , Eng. Majed Al Shammari Senior Project Engineer Qatar General Electricity & Water Corporation (Kahramaa) and Ms. Dana Al-Kubaisi Talent Development Specialist in (Vodafone Qatar). It started with opening from the Dean of the College of Engineering Dr.Khalid Kamal Naji, and it ended with Q&A Session.



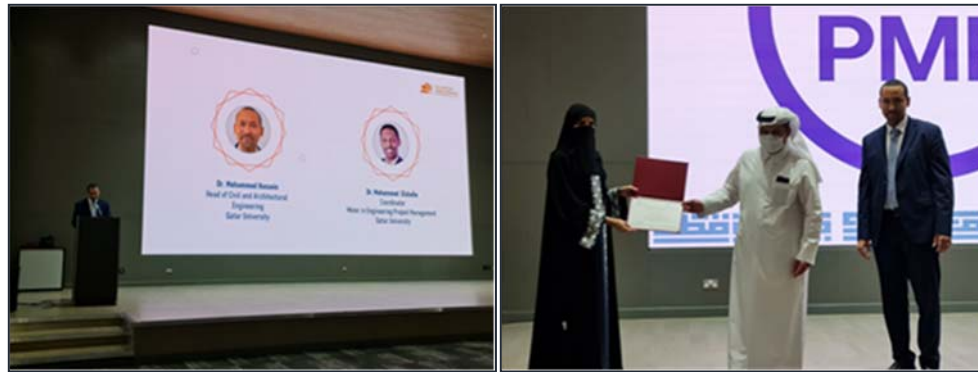


Figure 29 – Karak and PM in 60 min or Less

❖ Sustainability of Reinforced Concrete Structures-Event

The Moderator Prof. Usama Ebead in Civil and Architectural Engineering Department, Qatar University along with the speakers:

- Dr.Wael Alnahhal, Associate Professor in Civil and Architectural Engineering Department, Qatar University
- Dr.Mohammed Irshidat, Research Associate Professor in Center of Advanced Materials (CAM), Qatar University
- Dr.Sami Al-Ghamdi , Assistant Professor, Sustainable Development in College of Science and Engineering, Hamad Bin Khalifa University
- Mr. Sabir Khan, Technical Manager, Readymix Qatar
- Dr. Mohamed Mohsen, General Manager, Absolute Kinetic Contracting (AKC)
Delivered a presentation on “Sustainability of Reinforced Concrete Structures” on Sunday November 21 2021 in Research Complex Auditorium – Qatar University.

Figure 30 – Sustainability of Reinforced Concrete Structures-Event

❖ **Steel, From Idea to Reality**

Eng. Firas Haitham from Etihad Steel Factory Delivered a presentation Titled “Steel, From Idea to Reality” on November 24, 2021, Online in Dr. Wael Alnahhal Course CVEN420: Design of Steel Structures.

❖ **Current Trends in AEC Industry**

Current Trends in AEC Industry Workshop was held on Wednesday 10 March 2021 Online. The workshop was organized in key topics in civil engineering and it attracted a large number of audience of students, academics and professional engineers from the industry.



Figure 31 – Current Trends in AEC Industry

❖ **Constructing the Future Entertainment Destination in Qatar.**

The Civil & Architectural Engineering Department in the College of Engineering at Qatar University in collaboration with Qetaifan Projects, Engineering Australia and Qatar Society of Engineers held a workshop Titled: “Constructing the Future Entertainment Destination in Qatar” on Tuesday, 14 December 2021, 6:30pm-7:30pm

Presenter:

Eng. Mustafa El Cherkawi
Assistant Construction Manager
Qetaifan Projects

Eng. Mustafa is chartered professional civil engineer with Engineers Australia (EA) and Institution of Civil Engineers (ICE-UK). He holds a Diploma of Science & Engineering with distinction from UTS-INSEARCH, a Bachelor of Civil Engineering with Honors from the University of Technology Sydney (UTS), and a Master of Civil Engineering from the University of Sydney (USYD). Moreover, he is a registered engineer in Doha and Beirut.

Mustafa has more than 9 years of experience in the construction field in Australia and Qatar. Mustafa has been working on different multi-billion projects in Doha. Currently he is an assistant construction manager at Qetaifan Projects, working on a prestigious mega development. Moreover, Mustafa worked with AECOM on the Doha Doha 7-11 hotel tower, shopping mall and amusement theme park.

Mustafa is a valued member of the community, he is a recipient of the Elizabeth Hasting memorial award for community contribution from UTS, a previous nominee for best international student in W Awards, finalist for the young professional engineer of the year 2020 award (Australia), winner of the 2016 UTS-INSEARCH alumni award. He is the 1st president and a valued member of Engineers Australia Qatar Chapter (EAQC) 2019-2020.

The Department of Civil & Architectural Engineering at the College of Engineering at Qatar University in collaboration with Qetaifan Projects, Engineering Australia and Qatar Society of Engineers cordially invite you to the workshop:

Constructing the Future Entertainment Destination in Qatar

DAY & DATE: Tuesday, December 14, 2021
VENUE: Online (Event link will be shared upon registration).
REGISTRATION: [Please click here](#)

SCHEDULE OF WORKSHOP:
6:30pm: Start of workshop
7:15pm: Q&A session
7:30pm: End

ABSTRACT

Off the coast of Qatar's Lusail City is Qetaifan Island North, an under-construction state of art mixed-used project aimed to become Qatar's next iconic attraction, spans over 1.3 million m2. A prestigious project that features hotel, retail plaza, festival plaza, beach club, canal, mosque, linearpark and a waterpark that includes an "Icon Tower" the tallest water slide in the world on a reclaimed man-made island.

The presentation will give an overview about the project components, packages phases and its construction aspects and challenges. It will overview the construction methodologies, challenges, logistic, interface, safety, environment, traffic stakeholders etc.

For enquiries, please email civil@qu.edu.qa

Figure 32 – Constructing the Future Entertainment Destination in Qatar

❖ **Stress Management Techniques during Work**

The Civil & Architectural Engineering Department in the College of Engineering at Qatar University in collaboration with Qatar Society of engineering held an Online workshop titled “Stress Management Techniques during Work” on 18 January 2021.

THE COLLEGE OF ENGINEERING AT QATAR UNIVERSITY & QATAR SOCIETY OF ENGINEERS INVITE YOU TO ATTEND THE ONLINE INDUSTRIAL WORKSHOP

Stress Management Techniques During Work

DAY & DATE: Wednesday, 13 January 2021 (12:30-13:30)
VENUE: Online: <https://qu-edu.webex.com/qu-edu/j.php?MTID=m5703c7f88ef2f90b913ff49431acb24a>

ABSTRACT

In our everyday life, we are constantly facing several stressors. Our ability to solve the everyday problems we are facing can be hindered by cognitive overload, negative emotions, negative thinking, as well as by ineffective problem solving strategies.

In this presentation, we will start by scrutinizing the various components of the vicious circle that leads to stress and to a subsequent decline in performance at work. In the second part, we will summarize a few evidence-based, practical and easy-to-implement strategies to tackle each of the components of this "stress vicious circle".

For enquiries, please email dean-eng@qu.edu.qa

To join the Workshop: <https://qu-edu.webex.com/qu-edu/j.php?MTID=m5703c7f88ef2f90b913ff49431acb24a>
Meeting number: 121 235 1959
Meeting password: 12345

Dr. Sami Ouannes
Hamad Medical Corporation

Dr. Sami is a Clinical Fellow at the Department of Psychiatry, Hamad Medical Corporation. He graduated from the Faculty of Medicine of Tunis in 2008, and obtained his Medical Doctorate in 2012. He trained in psychiatry and psychotherapy in Razi University Hospital, Tunis, in Valais Hospital, Sion, Switzerland, and in Lausanne University Hospital, Switzerland. He has authored 70+ publications, including articles, published abstracts, and book chapters, and has been a regular speaker in national and international conferences since 2011. He served as President of the Association of Young Psychiatrists and Psychiatry Residents in Tunisia in 2013-2014.

Figure 33 – Stress Management Techniques during Work

❖ **Railway Trackwork – A client’s Perspective:**

Eng. Michael Cowan from Qatar Rail Delivered a presentation Titled “Railway Trackwork – A client’s Perspective” The presentation was held on 9:30am-10:45am, 17 November 2021 in Qatar University.



Figure 34 – Railway Trackwork – A client's Perspective

❖ **Introduction to the Intelligent Transport Systems (ITS):**

Eng. Motasem Meqdad from WSP Delivered a presentation Titled “Introduction to the Intelligent Transport Systems (ITS)” The presentation was held on 15 November 2021 in Dr. Deepti Muley Course CVEN461: Traffic Engineering.

❖ **Environmental Engineering in Practice: Green Energy and Environmental Services Company Experience.**

Eng. Amar El Awad from Green Energy and Environmental Services Delivered a presentation Titled: “Environmental Engineering in Practice: Green Energy and Environmental Services Company Experience” The presentation was held on 16 November 2021 in Dr. Alaa AlHawari course: CVEN340: Analysis and Design of Hydraulic Systems.



Figure 35 – Environmental Engineering in Practice

Events Organized:

Minor in Engineering Project Management

An introduction session was held for the Minor in Engineering Project Management. The event was organized on Monday, February 1, 2021 on Web ex platform.

The Minor in Engineering Project Management is a new program for engineering students at Qatar University. The purpose of the minor in Engineering Project Management is to train the next generation of global engineers in the field of engineering project management that encompasses multiple sub disciplines. The minor delivers a comprehensive approach that focuses on all aspects of an engineering project starting from the initiation, planning, scheduling, developing of cost estimates and budgets, analyzing risks, and planning risk responses and quality control.

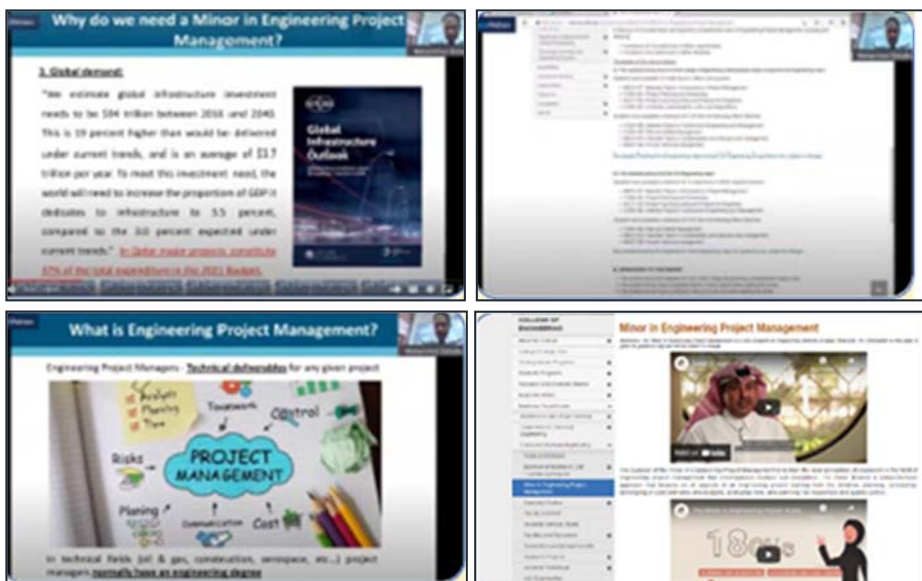


Figure 36 – Minor in Engineering Project Management

Other event co-organization:

Media Appearance:

The Department had several appearance in the media including 7 articles in the newspaper: Dr. Hussein, Al-Arab, 8 Feb 2021; Dr. Eid, Al-Raya, 15 Feb 2021; Dr. Al-Raoush, Al-Raya 4 March 2021; Dr. Ebead, Al-Raya, 29 March 2021; Dr. Al-Raoush, Al-Arab, 23 Aug 2021; Dr. Alraoush, ALsharq 2021, Dr. Alnahhal, Al- Raya 4 Dec 2021.

**«جاسم بن حمد الثانوية للبنين» تفوز بالمركز الأول
اختتام مسابقة الجسر الخشبي
للمدارس الثانوية**

تمت في يوم الاثنين الموافق 14/11/2021م مسابقة الجسر الخشبي للمدارس الثانوية للبنين في جامعة قطر، حيث شارك في المسابقة 10 فرق من المدارس الثانوية للبنين في قطر، وقد تم اختيار «جاسم بن حمد الثانوية للبنين» كالفائز بالمركز الأول.

تمت في يوم الاثنين الموافق 14/11/2021م مسابقة الجسر الخشبي للمدارس الثانوية للبنين في جامعة قطر، حيث شارك في المسابقة 10 فرق من المدارس الثانوية للبنين في قطر، وقد تم اختيار «جاسم بن حمد الثانوية للبنين» كالفائز بالمركز الأول.

8th High School Wooden Bridge Competition concludes

THE PENINSULA - Doha



The 8th High School Wooden Bridge Competition organized by the Department of Civil and Architectural Engineering at Qatar University, College of Engineering (C-AE), ended with a virtual closing award ceremony.

The first place was awarded to Jassim bin Hamad Secondary School for Boys, and second place to Ahmed bin Harbal Secondary School for Boys.

Commenting on the event, Mohammed Ibrahim, Head of Department of Civil and Architectural Engineering, said, "The competition aims to promote civil engineering skills among Qatari secondary school students by providing them with the opportunity to test and design small bridges and come up with innovative bridges that can bear loads. This competition is a way to showcase the principles of civil engineering to participants, to highlight its importance to life and industry, and to attract distinguished Qatari students to the civil engineering programme."

Concerning the competition rules and requirements, Dr. Waleed Alshabab, Associate Professor in the Civil Engineering Department and the competition's supervisor, said, "Secondary schools participated in the competition, and 30 wooden bridges were tested. The total length of each bridge is 800 cm. The model wooden bridges are made with wooden sticks and wood glue, with the actual number of wooden sticks used in the bridge not exceeding 120, and the width not exceeding 30 cm."

"This competition enhances the students' confidence and their ability to make scientific decisions based on simple principles of Civil Engineering. It also aims to provide them with the skills to work as a team and instill a spirit of cooperation to do any fruitful work," he added.

**الترويج لكلية الهندسة
جامعة قطر تحتّم مسابقة الجسر الخشبي**

في إطار التواصل المجتمعي الذي تولاه كلية الهندسة مع المؤسسات المحلية والمدارس الثانوية، تقام مسابقة الجسر الخشبي للمدارس الثانوية للبنين في جامعة قطر، حيث شارك في المسابقة 10 فرق من المدارس الثانوية للبنين في قطر، وقد تم اختيار «جاسم بن حمد الثانوية للبنين» كالفائز بالمركز الأول.

تمت في يوم الاثنين الموافق 14/11/2021م مسابقة الجسر الخشبي للمدارس الثانوية للبنين في جامعة قطر، حيث شارك في المسابقة 10 فرق من المدارس الثانوية للبنين في قطر، وقد تم اختيار «جاسم بن حمد الثانوية للبنين» كالفائز بالمركز الأول.

**الطلاب استكفوا قدراتهم للإبداع في التصميم
اختتام مسابقة الجسر الخشبي الافتراضية للمدارس الثانوية**



تمت في يوم الاثنين الموافق 14/11/2021م مسابقة الجسر الخشبي الافتراضية للمدارس الثانوية للبنين في جامعة قطر، حيث شارك في المسابقة 10 فرق من المدارس الثانوية للبنين في قطر، وقد تم اختيار «جاسم بن حمد الثانوية للبنين» كالفائز بالمركز الأول.

تمت في يوم الاثنين الموافق 14/11/2021م مسابقة الجسر الخشبي الافتراضية للمدارس الثانوية للبنين في جامعة قطر، حيث شارك في المسابقة 10 فرق من المدارس الثانوية للبنين في قطر، وقد تم اختيار «جاسم بن حمد الثانوية للبنين» كالفائز بالمركز الأول.

Figure 37 – Appearance in Newspaper



Figure 38- Dr. Hussein bin, Al-Arab, 8 Feb 2021



Figure 40- Dr. Alnahhal, Al-Raya 4 Dec 2021



Figure 39 Dr. Ebad, Alraya, 29 March 2021



تقدو تحالفاً دولياً بحثياً يضم جامعات مرموقة جامعة قطر تدرس تدفق الغاز بالصور الإشعاعية ثلاثية الأبعاد

الأبحاث:

تتضمن مجموعة بحثية تتكون من باحثين من جامعة قطر وجامعة كولومبيا في نيويورك وجامعة مرموقة في إسطنبول، تدرس تدفق الغاز باستخدام التصوير الإشعاعي ثلاثي الأبعاد. وتهدف الدراسة إلى فهم كيفية تدفق الغاز في الخزانات الجوفية تحت الأرض، وهو أمر مهم لتقدير احتياطيات الغاز وتخطيط استخراجها.

تتميز هذه الأبحاث على عدة اختلافات، حيث تم دمج تدفق الغاز وتركيبتنا الجزيئات والفراغ بشكل متشابه من حيث التدفق. وتتميز الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال. وتتميز الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال.

تميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال. وتميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال.



د. رائوش



د. رائوش

Figure 41- Dr. Al-Raoush, Alarab, 23 Aug 2021

استخدام الصور الإشعاعية ثلاثية الأبعاد جامعة قطر تدرس تدفق الغاز في باطن الأرض

إبراهيم بن محمد الراجحي
رئيس اللجنة الوطنية للبحوث والدراسات
مدير عام البحوث والدراسات
جامعة قطر

عبدالله بن محمد العبدان
مدير عام البحوث والدراسات
جامعة قطر

د. رائوش

د. رائوش

تميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال. وتميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال.



د. رائوش



د. رائوش

Figure 42- Dr. Alraoush, ALsharq 2021

تطوير أنظمة التخلص من المياه الجوفية

في مشروع بحثي جديد بكلية الهندسة جامعة قطر - هشام عبد الراجحي

تتميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال. وتميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال.

د. رائوش

د. رائوش

د. رائوش

د. رائوش

Figure 43- Dr. Eid, Al-Raya, 15 Feb 2021

مشروع لحماية المياه الجوفية من الملوثات النفطية

بتعاون بين جامعتي قطر وجامعة كولومبيا وكندا - د. رائوش وبنو العبدان

تميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال. وتميزت الدراسة باستخدام التصوير الإشعاعي ثلاثي الأبعاد، وهو أمر جديد في هذا المجال.

د. رائوش

د. رائوش

د. رائوش

د. رائوش

Figure 44- Dr. Alraoush, Alarab, 23 Aug 2021

Appendix-A4-Students Activities

Competitions & Awards:

8th Wooden Bridge Competition 2021:

The Department of Civil and Architectural Engineering organized the 8th 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. Eighteen Independent High Schools participated in the competition.



Figure 45 – Wooden Bridge Competition 2021

The Winners in the 8th Wooden Bridge Competition 2021:

SR.NO.	School Name	Position
1	Jassim Bin Hamas Secondary School For Boys	1 st Place
2	Ahmed Bin Hanbal Secondary School For Boys	2 nd place
3	Al Shahaniya Secondary School For Boys	3 rd Place

Senior Design Poster Competition Spring 2021:

The Senior Design –II Poster Competition Spring 2021 Contest was held on the 12th of April 2021 online. Six 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:

Number	Student ID	Students name	Project Title	Supervisors	Position
1	1	201602430 AlmodatherAhmed Hassan Mohamed	COMPARATIVE STUDY ON CONVENTIONAL VS. PRE-ENGINEERED STEEL BUILDINGS IN QATAR	Dr. Wael Al Nahhal (P)	1st
	2	201601242 Mohammed Mashoor Kairi Talhami		Dr. Elshafie	
	3	201604416 Abdurahman Hafez Mohammed Kashem			
	4	201609536 Mhd.Taisir Mhd.Mosallam Al Baba			
2	1	201706034 Mohammed Said Mohammed Fawaz	Design of a Landfill for Municipal Waste generated from Al-Keesah	Dr. Riyadh (P)	2nd
	2	201506571 Khamis Mounir Khamis Alkassas		Dr. Hisham Eid	
	3	201604176 Jassim Ahmad A M Al-Sanadi			
	4	201517433 Sadon Mohammed J H Al-Azba			
3	1	201701555 Mohamad Iskandar	Design of a Multi-Lane Highway in Qatar	Dr. Okan (P)	3rd
	2	201705018 Mohamed Abouelomrin		Dr. Dias	
	3	201701629 Ahmed Ahl		Dr. Al-Hawari	
	4	201602302 Faisal Al-Obaidli		Dr. Murat	
4	1	201703105 Mahmoud Walid Mahmoud Salem	Assessment of Geometry, Control and Drainage of Road Section in Doha City	Dr. Wael Al hajyaseen (P)	3rd
	2	201603841 Ahmed Basheir Mahgoub Abdelkarim		Dr. Dias	
	3	201703908 Sam Verniel Patan Iral		Dr. Al-Hawari	

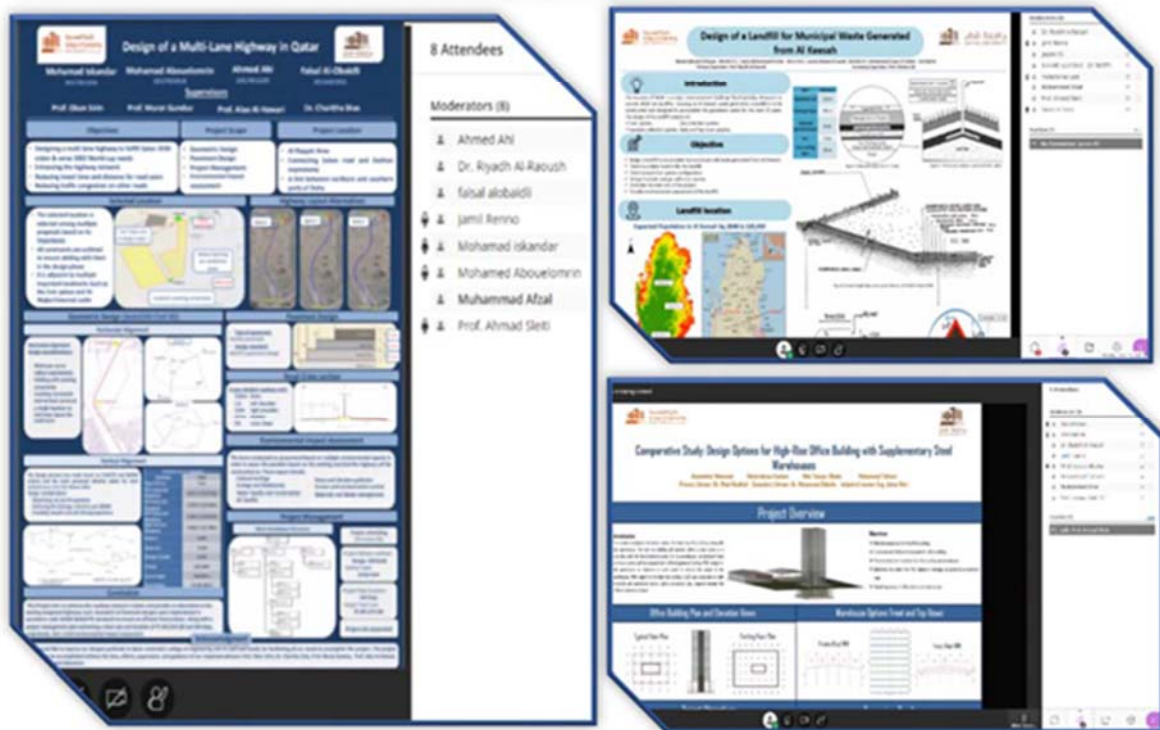


Figure 46 – Poster Competition Spring 2021

Senior Design –II Contest Spring 2021:

The Senior Design –II Spring 2021 Contest was held on the 6th of May 2021, online. Six 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 2021)					
Positions	Student ID	Students name	Project Title	Supervisors	
1st	1	201602430	AlmodatherAhmed Hassan Mohamed	Comparative Study: Design Options for High-Rise Office Building with Supplementary Steel Warehouses	Dr. Wael Al Nahhal (P) Dr. Elshafie
	2	201601242	Mohammed Mashhoor Kairi		
	3	201604416	Abdurahman Hafez Mohammed Kashem		
	4	201609536	Mhd.Taisir Mhd.Mosallam Al Baba		
2nd	1	201601600	Ahmed Amr Mohamed Farang Madkoor	Sports City Hotel	Dr. Ansari (P) Dr. Murat
	2	201702363	Yousef Ahmed Mohamed Refaat Tolba		
	3	201604198	Abdullah Yousif Eisa Mohamed Osman		
	4	201607606	Mohammed Ahmad Q A Al-Ajbar		
3rd	1	201706034	Mohammed Said Mohammed	Design of a Landfill for Municipal Waste generated from Al-Keesah	Dr. Riyadh (P) Dr. Hisham Eid
	2	201506571	Khamis Mounir Khamis Alkassas		
	3	201604176	Jassim Ahmad A M Al-Sanadi		
	4	201517433	Sadon Mohammed J H Al-Azba		

Figure 47– Senior Design –II Contest Spring 2021 Winners

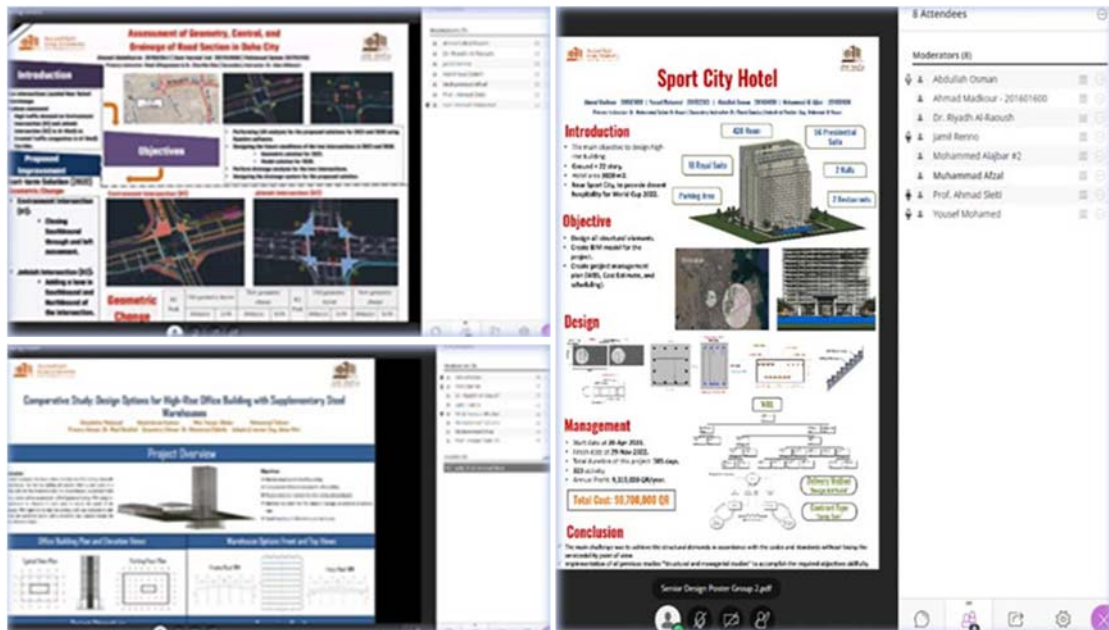


Figure 48 – Senior Design –II Contest Spring 2021 Posters

Senior Design Poster Competition Fall 2021:

The Senior Design –II Poster Competition Fall 2021 Contest was held on the 15th of Nov 2021. Students presented their projects to the Jury members as well as to internal and external examiners. Here are the details of the winners:

Positions		Student ID	Students name	Supervisors	Project Title
1 st	1	201702950	Faisal Al-Qahtani	Dr. Arslan Ayari	Designing a Sustainable Student Activity Centre
	2	201702009	Abdelwahab Mohamed		
	3	201208469	Eisa Al-Mohannadi		
	4	201511407	Amr Kamar		
2 nd	1	201709100	Mohammed Abul Fahed	Dr. Usama Ebead	Analysis and Design of a 10-story Residential Building (Hotel)
	2	201707136	Abubakar Mohamud		
	3	201601422	Nooreldeen Abdelfattah		
	4	201707661	Al-Harith Umlai		
3 rd	1	201704656	Obadah Dahdal	Dr. Deepti Muley	Improvement of an Existing Intersection, Al-Matar Street/C-Ring Road Intersection
	2	201706148	Mohammad Abdulhameed Sakhid Shah		
	3	201703146	Ahmed Talal Al-hetmi		
	4	201401894	Saoud Alshamsi		

Figure 49 – Results for the SDP-II Poster Competition Fall2021

Senior Design –II Contest Fall 2021:

The Senior Design –II Fall 2021 Contest was held on the 18th of Nov 2021. 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:

Positions		Student ID	Students name	Supervisors	Project Title
1 st	1	201709100	Mohammed Abul Fahed	Dr. Usama Ebead	Analysis and Design of a 10-story Residential Building (Hotel)
	2	201707136	Abubakar Mohamud		
	3	201601422	Nooreldeen Abdelfattah		
	4	201707661	Al-Harith Umlai		
2 nd	1	199602666	Ahmad Mohammed Al-Hitmi	Dr. Riyadh Al-Raoush	Design of Water Distribution Networks
	2	199606351	Abdulaziz Alyafei		
	3	201512081	Omar Askar		
	4	201301422	Mohamed Elemam		
3 rd	1	201702950	Faisal Al-Qahtani	Dr. Arslan Ayari	Designing a Sustainable Student Activity Centre
	2	201702009	Abdelwahab Mohamed		
	3	201208469	Eisa Al-Mohannadi		
	4	201511407	Amr Kamar		

Figure 50 – Results for the SDP-II Project Winners Fall2021

- The Civil Engineering PhD student, Tadesse Wakjira won Qatar University the **Research Poster Award in Information & Communication Technologies – Graduate students**, his main contribution was developing machine learning based predictive models for Qatar Metro ridership considering built environment, and he developed a web-based application based on the optimized machine-learning model... The honoring ceremony was held on Wednesday 20 October 2021 at the Research Complex H10 in Qatar University and via WebEx.



Figure 51- Tadesse Wakjira Receiving his certifica

Field Trips, Social and Extra-Curricular Events

Dr. Okan Sirin organized a construction site visit on November 13, 2021 for students taking CVEN 210 Properties and Testing of Materials course, the construction site was (Al Mamoura Mosque).





Figure 52 – Construction site visit on November 2021

Dr. Vagelis Plevris organized a Visit on 9 October 2021 to a warehouse building under construction with the students doing the Senior Design Project 1 (group of 4 students).



Figure 53 – Construction site visit on October 9, 2021

Activities:

The Department maintained a rank within 151-200 place in Shanghai Ranking in the Civil Engineering subject in 2021, same as last year and better than the position of 201-300 in 2019.



Outreach Activities:

High school Visits:

The Department of Civil and Architectural Engineering outreached for high school students. Visits to Al Wakra, Omar Bin Al-Khatlab, Musaab Bin Omair, Hassan Bin Thabit high schools were organized during the academic year 2021. The visits aimed at giving detailed information about the Engineering Programs at Qatar University and to highlight the importance and roles of Civil Engineers in the society to high school students in Qatar.



Figure 54 - High School Visit 2021

Build your house exhibition:

The Department of Civil and Architectural Engineering Participated in the Second Edition of “build your house exhibition” on 20-22nd Sep 2021 at QNCC.



Figure 55- build YOUR HOUSE exhibition 2021