جامعة الإمام عبدالرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

SDG 6.5.1
Educational Opportunities
2022-2023

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1. Clean Energy Patent registered by United States Patent Office for an inventor from IAU

United States Patent Office registered a patent to the Associate Professor of Organic Chemistry at IAU, Dr. Asma Al-Sharif, in field of Clean Energy for her innovative method of producing nano-sorbent material consisting of carbon nanotubes grafted with acrylic acid and an acrylamide polymer.

Dr. Asmaa Al-Sharif indicated that the idea of the invention includes producing and preparation of advanced nanomaterials consisting of carbon nanotubes grafted with acrylic acid and acrylamide polymer to act as nano filters remove and absorb toxic phenolic materials from industrial wastewater which pose a threat to living organisms, pointing out that the toxic phenolic compounds is one of the most important serious problems of industrial wastewater, as it is used in many different industries, and therefore it is necessary to get rid of these compounds for avoiding health risks.

She explained that this technology is promising for water desalination and purification companies and industrial wastewater plants, and it saves effort and time, highly effective and law cost. Thus, it achieves sustainable development and production of treated water, indicating that the most prominent feature of this invention beside low cost it is easily to be prepared in research laboratories compared to preparing other nanomaterials, which need expensive devices and equipment and complex preparation methods.

Al-Sharif confirmed the possibility of benefiting from these nano-filters several times and recycling them while maintaining their high efficiency and thus achieving sustainable development and production of treated water, which has a significant environmental impact, with a great possibility to apply this invention due to its environmental importance in production of treated water along with economic cost.

It is noteworthy that Al-Sharif, who obtained the patent, is an associate professor of organic chemistry at Imam Abdul Rahman bin Faisal University and obtained a specialized certificate in clean energy from the Massachusetts Institute of Technology in the United States of America. She has many published research articles in field of organic preparations and clean energy. She worked as a visiting researcher and participated at many conferences in several countries around the world.

https://www.iau.edu.sa/en/news/clean-energy-patent-registered-by-unitedstates-patent-office-for-an-inventor-from-iau

2. Research on Polluted water

Part of the visit of the delegation of the General Corporation for Saline Water Conversion @swcc_ksa
to #جامعة_الإمام_عبدالرحمن_بن_فيصل included a tour of:

▫ Research Center at the College of Science
@IAU_cs

▫ College of Computer Science and Information Technology
@IAU_CCSIT

▫ College of Engineering
@CE_IAU_SA

https://twitter.com/IAU_KSA/status/1604581022351368192

3. Water Conversion

Educational opportunity regarding water conversion

The given Twitter video link shows a part of the visit of the delegation of the General Corporation for Saline Water Conversion @swcc_ksa to IAU included a tour of Research Center at the College of Science, IAU, College of Computer Science and Information Technology, IAU, and College of Engineering, IAU.

https://twitter.com/IAU_KSA/status/1604581022351368192

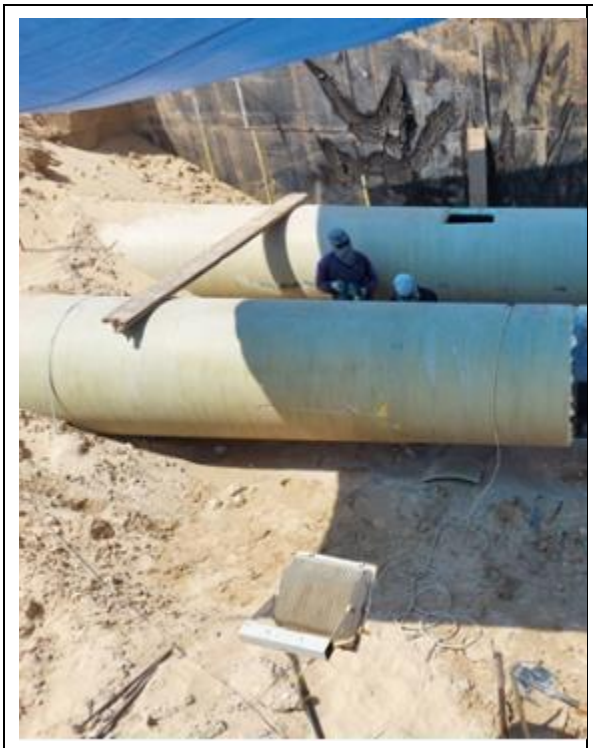
4. Water pollution control in IAU Campus area

Water meter to regularly check water quality

Water Desalination plant at IAU

Water Pollution control system at IAU

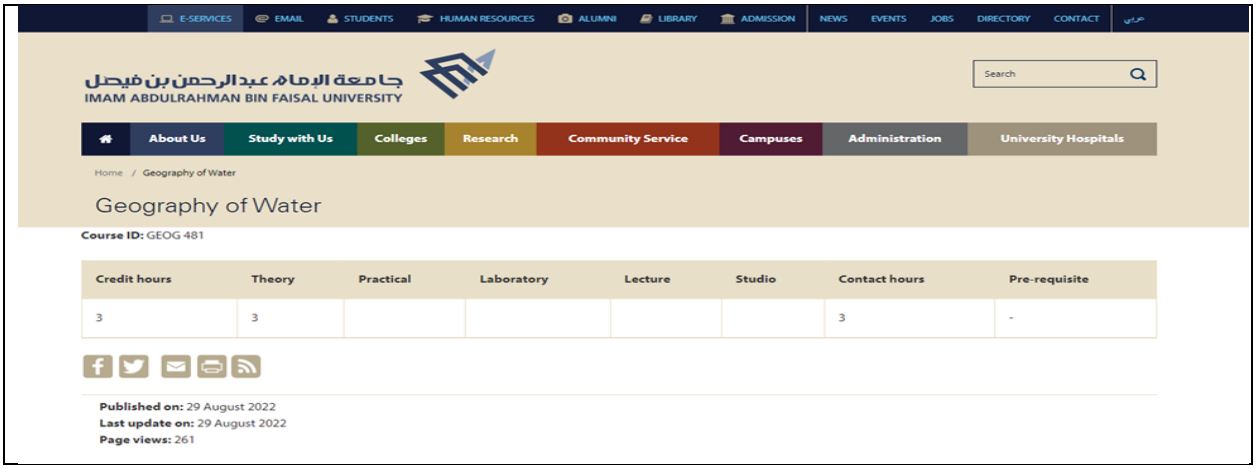
Recycled water processed in the tanks to protect ground water contamination



Water Pipes periodically inspected and repaired for any leaks or worn outs

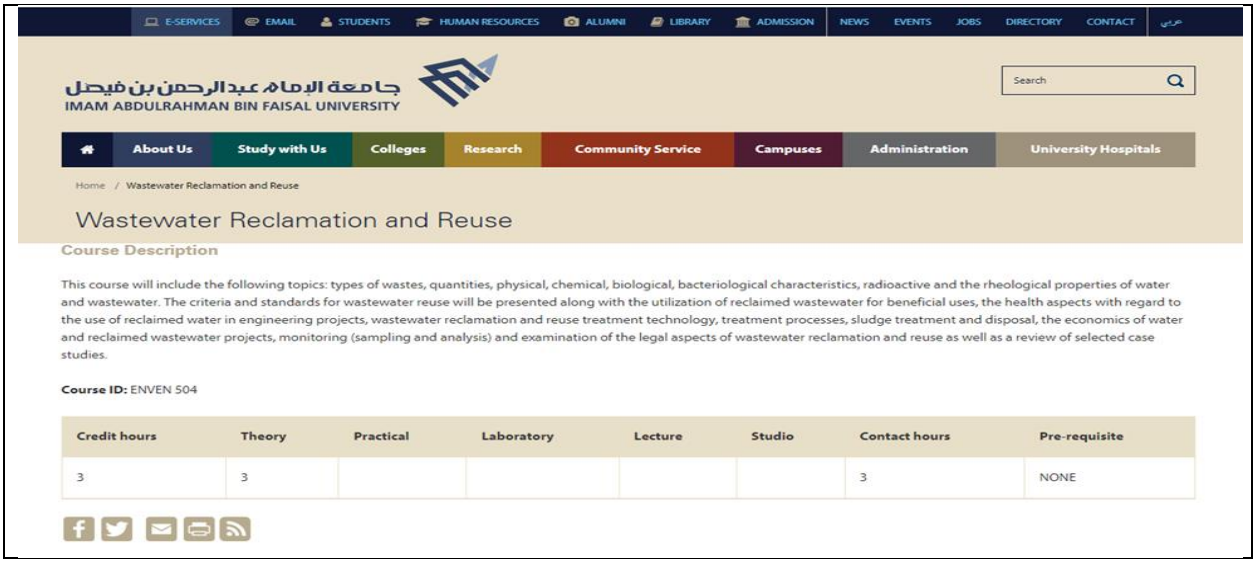
5. Educational Opportunities on Water Management offered by IAU to the Student Community

Geography of Water



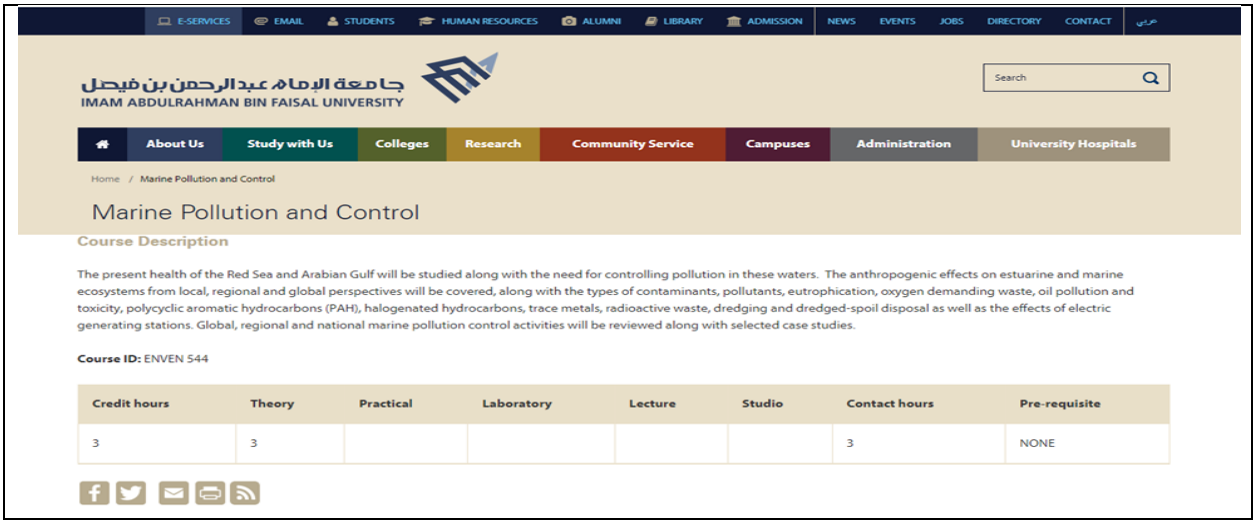
https://www.iau.edu.sa/en/courses/geography-of-water

Wastewater Reclamation and Reuse



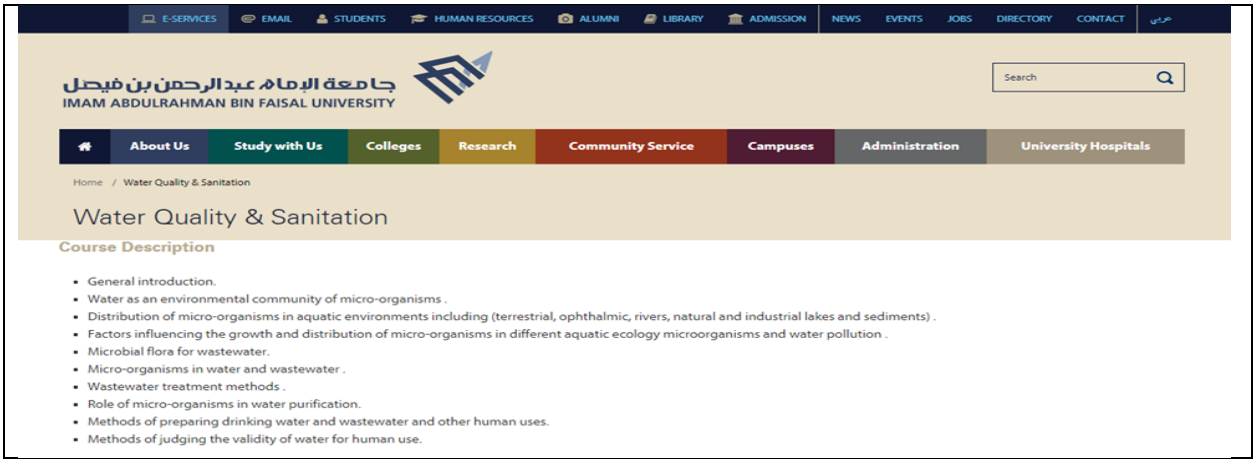
https://www.iau.edu.sa/en/courses/wastewater-reclamation-and-reuse

Marine Pollution and Control



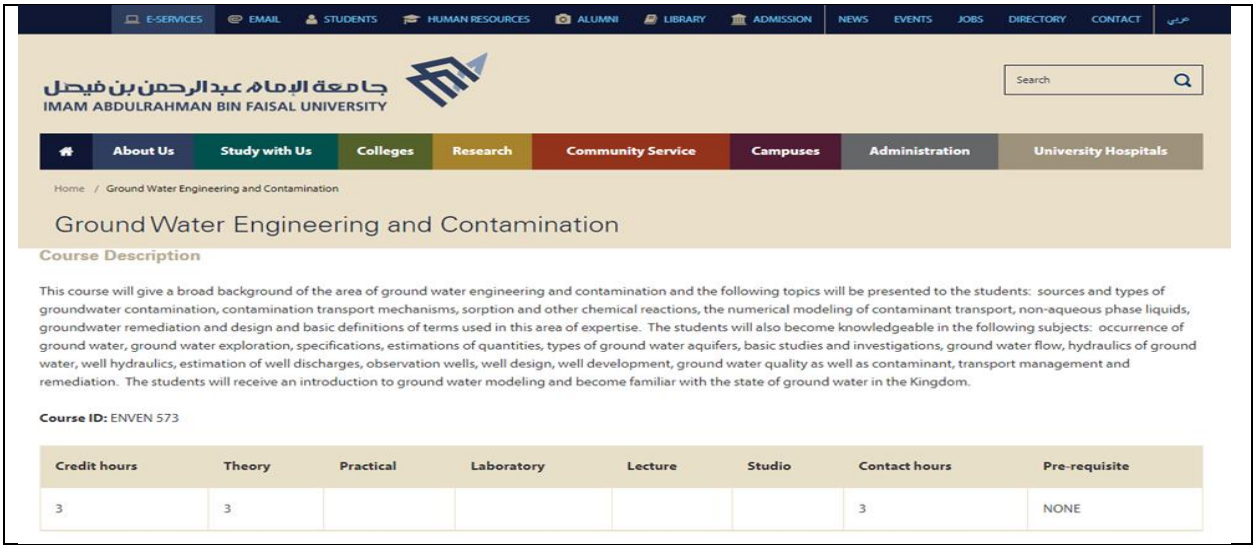
https://www.iau.edu.sa/en/courses/marine-pollution-and-control

Water Quality and Sanitation



https://www.iau.edu.sa/en/courses/water-quality-sanitation

Ground water engineering and Contamination



https://www.iau.edu.sa/en/courses/ground-water-engineering-and-contamination