

New postgraduate Program in Geothermal Energy Engineering

(Engineering Diploma)

Faculty of Engineering at Cairo University is offering Egypt's first postgraduate program in Geothermal Energy Engineering, as part of the Geothermal Energy Capacity Building project (GEB) funded by Erasmus+. The diploma is the first post-graduate program in Egypt specialized in the field of Geothermal Energy.

Prerequisites:

The program accepts engineering graduates who hold a B.Sc. from Egyptian universities or an equivalent degree according to the Supreme Council of Universities (SCU) in Mining and Geological Engineering, Petroleum Engineering, Metallurgical Engineering, Mechanical Engineering, and Electrical Engineering with no prerequisites. Other engineering graduates shall study and successfully pass two thermodynamics and geology principles modules at any ungraduated engineering program found in an authorized Egyptian University by SCU before enrolling in the program.

Objectives:

1. Master a wide spectrum of geothermal engineering knowledge and specialized skills and can apply acquired knowledge.
2. Apply analytic critical and systemic thinking to identify, diagnose and solve geothermal engineering problems with a wide range of complexity and variation.
3. Work in and lead a heterogeneous team of professionals from different engineering specialties that is necessary for Achieving success in the field of geothermal engineering.
4. Recognize his/her role in promoting the geothermal engineering field and contribute to the development of the profession and the community.
5. Value the importance of the environment, both physical and natural, and work to promote sustainability principles.
6. Use techniques, skills, and modern geothermal engineering tools necessary for engineering practice.

Program Structure:

The program consists of thirteen courses (seven mandatory courses in Table 1 and six elective courses in Table 2), and the project is one of the mandatory courses. The total number of credit hours is 30 hours of courses of 500 code in a maximum of 4 semesters.

Partners



Table 1 the mandatory courses of the diploma program

Course Code	Topic	Number of credit hours	prerequisite courses
MIN 521	Geology for geothermal energy	3	-
MIN 522	Thermal Engineering for Geothermal Systems	3	-
MIN 523	Geothermal Resources and Reservoir Engineering	3	-
MIN 524	Drilling Engineering for Geothermal energy systems	3	-
MIN 525	Shallow geothermal engineering: overview and applications	4	MIN 522
MIN 526	Deep geothermal engineering: overview and applications	4	MIN 521 MIN 523
MIN* 588	Project on Geothermal Energy Engineering	4	

*** MIN 588 the graduation project requires the completion of 26 credit hours (6 mandatory courses and 2 elective courses).**

Table 2 the elective courses of the diploma program

Course Code	Topic	Number of credit hours	prerequisite courses
MIN 527	Geothermal power plants: operation and maintenance.	3	MIN 522 MIN 526
MIN 528	HVAC systems and direct use of geothermal energy	3	MIN 522 MIN 525
MIN 529	Oil and gas wells revitalization for geothermal energy exploitation.	3	MIN 524 MIN 526
MIN 530	Life Cycle & Environmental impact assessment of geothermal projects.	3	MIN 525 MIN 526
MIN 532	Project management, techno-economic analysis, and finances.	3	MIN 525 MIN 526
MIN 533	Renewable and non-renewable energy resources hybrid systems.	3	MIN 522 MIN 525 MIN 526

*** The student shall select two courses taking into consideration the prerequisite.**

Contacts:

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