



Co-funded by the
Erasmus+ Programme
of the European Union

Call for Application

Advanced Course on Environmental Remediation and Sustainable oil & gas extraction

Baku

September 2022 – June 2023

GOALS

The main goal is to train professionals skilled in new technologies to be implemented in order to solve the actual emergencies in the field of bioremediation. Introducing a new type of education (the 3rd cycle), in the view of constituting a bridge between the academic and industrial sectors, to favour student's introduction in the job market.

In addition, a practical teaching methodology, consisting of problem-based learning and project work has been included, that will help improve the skills of students in their employment.

SUMMARY OF THE COURSE

The Advance Course on Environmental Remediation and Sustainable oil & gas extraction is based on a total of 10 teaching modules including lectures, tutorial work and practical work, followed by exams, a stage (practical placement) of 3 months and a thesis work (1 month), totally accounting for 60 ETCS.

Schedule: 6 hours per day (i.e. 4h in the morning, 1 h canteen, 2 h in the afternoon)

Time frame: 10 weeks front end lectures + practical placement;

The teaching of each module will be shared by at least one Azerbaijan teacher and one EU teacher. At the end of the training a thesis will be discussed in front of an International committee.

The official language of the course is English.

The exam results will be used to assign the practical placements in EU or in Azerbaijan.

PROGRAM

The content of the Advance Course on Environmental Remediation and Sustainable oil & gas extraction is divided in 4 Macro areas: Source of pollution, Characterization and Monitoring/Sensing, Remediation and Pollution Prevention.

Detailed information of the program is below reported.

	Time frame
MACRO AREA 1. SOURCE OF POLLUTION (3 ECTS; 30 hours)	19/09/22-23/09/22
1.1 Source	
1.1.1 Hydro Risk Assessment	
1.1.2 Fundamental of Oil and Gas extraction	
1.1.3 Heavy Metals	
1.1.4 Drilling Pollution	26/09/22 – 07/10/22
MACRO AREA 2. CHARACTERIZATION and MONITORING/SENSING (Chemical, Microbiological and Physical) + LAB Practice (9 ECTS; 90 hours)	
2.1 Characterization (6 ECTS)	
2.1.1 Soil	
2.1.2 Wastewater	
2.1.3 Natural Water	10/10/22 – 14/10/22
2.1.4 Solid waste/sludge	
2.1.5 Air	
2.2 Monitoring (3 ECTS)	
2.2.1 Analytical methods	
2.2.2 Soil monitoring	17/10/22 – 21/10/22
2.2.3 Water monitoring	
2.2.4 Air monitoring	
2.2.5 Sampling	
<i>Pause</i>	
MACRO AREA 3. REMEDIATION (12 ECTS; 120 hours)	24/10/22-28/10/22
3.1 Separation	
3.1.1 Adsorption	
3.1.2 Extraction	
3.1.3 Filtration	
3.1.4 Coagulation/Flocculation)	31/10/22-4/11/22
3.2 Membrane	
3.3 Chemical	
3.3.1 ISCO	
3.3.2 Dechlorination	
3.3.3 Photocatalysis	7/11/22- 11/11/22
3.3.4 Ozonation	
3.3.5 Chemical reduction	
3.3.6 Electro-Fenton	
3.4 Biological	
3.5 Case Studies	14/11/22-18/11/22
MACRO AREA 4. POLLUTION PREVENTION (6 ECTS; 60 hours);	21/11/22 -25/11/22
4.1.1 Pollution Reduction (At source)	
4.1.2 Resource Recovery	
4.1.3 Carbon Capture and Storage	
4.1.4 Energy Efficiency and saving	
4.2 Bioprocesses	28/11/22- 2/12/22
4.2.1 Biorefinery	

4.2.2 Bioprocesses	
<i>Pause</i>	<i>05/12/22 – 09/12/22</i>

<i>Exams and stage selection</i>	<i>19/12/22 – 22/12/22</i>
<i>Practical placement in EU or Azerbaijan</i>	<i>Feb 2023 – Apr 2023</i>
<i>Thesis dissertation</i>	<i>mid-June 2023</i>

ASSESSMENT CRITERIA AND FINAL AWARD

At the end of the first part of the course (attendance of modules and lab modules), a written exam will take place on December 2022, which, if positively passed, will be awarded 30 ECTS (European Credit Transfer System).

25 ECTS will be attributed to a practical placement, that is a stage on a practical case study near an industrial or university laboratory where students will work under the supervision of both an academic and an industrial tutor.

To the first 12 students ranked after the exam held at the end of front-end lectures a practical placement in EU will be offered, completely supported by ITACA project. The remaining students will attend a practical placement near universities and stakeholders in Azerbaijan.

The selection of the subject and the premise assigned to each student will be made on the basis of the notes achieved in the written exam on the modules taught during the first part of the course.

Finally, at the end of the course a thesis in English language will be written on the training activity and, if successfully discussed, it will allow the achievement of 5 ECTS.

At the end of the course a certification of specialization in "Environmental Remediation and sustainable oil and gas extraction", released in the framework of the program "Staff internship and professional development" will be jointly issued by the four universities participating in the program (Baku Higher Oil School, Baku State University, Azerbaijan University of Architecture and Construction, Baku Engineering University) and the competent authorities to the students who successfully complete the entire evaluation process.

The certification of specialization corresponds to 60 ECTS.

TEACHERS

The teaching involves scholars from:

European Union Universities:

University of Rome La Sapienza (Italy), Aalborg University (Denmark), University of Patras (Greece), University of Granada (Spain).

Azerbaijan Universities:

Azerbaijan University of Architecture and Construction, Baku Engineering University, Baku Higher Oil School, Baku State University.

Private Companies:

Argus Umweltbiotechnologie GmbH (Germany).

ADMISSION REQUIREMENTS

Criteria

- English level: B1 or upper intermediate (eq. to 6 IELTS)
- M. Sc. degree in Chemistry, industrial Chemistry, Chemical Engineering, Environmental Engineering, Biochemistry, Ecological chemistry, Ecological chemical monitoring, Bioecology, Nanotechnology and related.

How to apply?

Applications must be submitted by email to: secretariat@itacaproject.eu

DEADLINE: July 5th, 2022.

The application must include mandatory the following documents (in English):

- Copy of a valid identity card
- A recent photo of the applicant
- M. Sc. degree Academic certificate
- English certificate, minimum B1 (or the equivalent 6 IELTS)
- Curriculum vitae
- Motivation Letter: short letter showing the applicant's interest in the Advance Course
- A letter of reference
- Transcript of academic records

The registration to the course is free of charge.

The total maximum number of students admitted to the course is 25.

For further details or more information: www.itacaproject.eu, info@itacaproject.eu

Selection procedure

An evaluation board appointed by the Steering Committee of ITACA will carry on the selection procedure. **The result of the selection is expected by July 25th, 2022.**

Financial support

According to the budget plan, **ITACA project will cover the travel costs and the cost of subsistence** for the practical placement in EU. For the cost of subsistence, a reimbursement up to 3810 € for stay in Italy, 4572 € for stay in Denmark, 3048 € for stay in Spain or Greece, is paid for a three-month stage.