

Location

The course will be held at the JRC Institute of Transuranium Elements located at the **Campus North** of the **Karlsruhe Institute of Technology**, which is located ~10 km north of Karlsruhe next to Eggenstein-Leopoldshafen

(<https://ec.europa.eu/jrc/en/institutes/itu>)

Map at: <http://www.kit.edu/downloads/Campus-Nord.pdf>)



If you are interested in participation, please provide following information to:

Dr. Dario MANARA and Dr. Concetta FAZIO

European Commission, Joint Research Centre (JRC)

Institute for Transuranium Elements (ITU)

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Please complete all sections

Name:

Institution:

Address:

.....

e-mail:

Phone:

undergraduate student

graduate / Ph.D. student

other



EURATOM Coordination and
Support Action
GENTLE

Intersemester Course

“Nuclear Fuels”

JRC-ITU Karlsruhe, Germany
June 6^h June 10th, 2016



Introduction and Scope

A **five days intersemester course** is organized within the framework of the EURATOM FP7 GENTLE project <http://www.gentleproject.eu/>.

The course comprises:

- Lectures by experts
- Laboratory visits with practical demonstrations.

The course focuses on the topic **Nuclear Fuels**. It is open to all interested (post-) graduate students of academic/research institutions of the European Union (EU) and is limited to 20 participants. Main goal of the course is to enrich the students' background and stimulate their interest in the role and importance of nuclear materials, and in particular fuels, for the reactor design, operation and safety, the nuclear waste management, shielding of nuclear facilities and safeguarding. Special importance is given to the practical aspects and precautions linked with handling radioactive and fissile materials.



Students following this course will earn knowledge, skills and competences available at research centres specialised in the field of Nuclear Materials and equipped with the experimental facilities needed for the safe handling of these materials. Students will acquire competences on topics that are generally not provided by academic institutions as e.g. practical details on the nuclear fuel cycle, skills in handling radioactive materials, and competence in dealing with such materials also in emergency cases. Particular attention will be given to practical aspects of glove-boxes, radiation protection, and laboratory demonstrations. The course aims therefore at complementing nuclear engineering and nuclear materials studies by providing a comprehensive overview of the nuclear fuel cycle, from the uranium mining and fuel production to the spent fuel and highly-radioactive waste management. It is also suited for professionals needing to update their knowledge in the field of nuclear fuels.

Course contents

1. Nuclear Fuel Cycle Overview
2. Fuel Fabrication Processes
3. Fuel Handling Risks and Medical Follow-up
4. Fuel Characterisation and Properties
5. Accidental scenarios
6. Fuel Industrial Reprocessing-Waste Management
7. Laboratory visits (JRC ITU)
8. Introduction to safety and criticality
9. Practical Work in training glove box

General information

The intersemester course is organized by the *European Commission's Joint Research Centre - Institute for Transuranium Elements, JRC-ITU*, the *Commissariat à l'Energie Atomique et aux Energies Alternatives (CEA, France)*, and the *Hauptabteilung Dekontaminationsbetriebe, WAK-HDB*.

For graduated and post-graduate students of European academic institutions the intersemester course is free of charge. The GENTLE project will cover the following costs:

- Attendance to the course
- Coffee breaks
- Shuttle from Karlsruhe city to JRC-ITU

Other costs must be supported by the participant (e.g. travel from home country, accommodation, etc.). Additional information is available at <http://gentleproject.eu/courses/schedule/>

The course is funded by the GENTLE project, EURATOM Fission Training Schemes of the European Commission's 7th Framework Programme .



Registration

The requested information of the registration form (see front page) must be provided and sent to the following E-mail addresses:

- petra.strube@ec.europa.eu,
- dario.manara@ec.europa.eu

Deadline for registration is 18th of May, 2016