



Out of core nuclear fuel management: front end

This course is part of [Nuclear fuel management: a practical approach Specialization](#)

 Instructor: [Juan Luis François Lacouture](#)

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5 modules

Gain insight into a topic and learn the fundamentals.

5.0 ★

(20 reviews)

Intermediate level

Some related experience required

1 week to complete

at 10 hours a week

Flexible schedule

Learn at your own pace

Skills you'll gain

Process Engineering Natural Resource Management Manufacturing Processes Energy and Utilities Engineering Calculations Manufacturing and Production
Materials science Environment and Resource Management Chemical Engineering Production Process Chemistry [View less skills](#)

Details to know



Shareable certificate
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Assessments

7 assignments

 Taught in English

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Build your subject-matter expertise

This course is part of the [Nuclear fuel management: a practical approach Specialization](#)
When you enroll in this course, you'll also be enrolled in this Specialization.

- Learn new concepts from industry experts
- Gain a foundational understanding of a subject or tool
- Develop job-relevant skills with hands-on projects
- Earn a shareable career certificate

There are 5 modules in this course

You will be able to recognize and describe the basic principles of the different steps of the front end of the fuel cycle, will be capable to find updated information and knowledge about the subject of study and will have the skills to perform basic calculations of the front end of the nuclear fuel cycle.

Introduction to the nuclear fuel cycle

Module 1 • 3 hours to complete

[Module details ^](#)

What's included

13 videos 3 readings 2 assignments

[Hide info about module content ^](#)

[13 videos • Total 68 minutes](#)

Welcome • 3 minutes

Introduction • 3 minutes

Start of nuclear fuel cycle • 5 minutes

Uranium resources • 6 minutes

Thorium • 6 minutes

Integrated nuclear fuel cycle system • 2 minutes

Uranium database tab • 7 minutes

Deposit models tab • 4 minutes

Statistic tab • 4 minutes

Statistic tab. Part 2 • 8 minutes

Country report • 4 minutes

Statistic tab chart • 6 minutes

Thorium database • 4 minutes

[3 readings • Total 30 minutes](#)

Uranium deposits • 10 minutes

Resources of nuclear fuel • 10 minutes

Thorium • 10 minutes

 **2 assignments • Total 90 minutes**

Assessment 1 • 45 minutes

Practical Assessment 1 • 45 minutes

Mining and Milling, Conversion of nuclear fuel

[Module details ^](#)

Module 2 • 1 hour to complete

What's included

 2 videos  2 readings  1 assignment

[Hide info about module content ^](#)

 **2 videos • Total 12 minutes**

Uranium mining • 6 minutes

Uranium milling and conversion • 5 minutes

 **2 readings • Total 20 minutes**

Uranium mining • 10 minutes

Uranium miling • 10 minutes

 **1 assignment • Total 30 minutes**

Assessment 2 • 30 minutes

Enrichment of Nuclear Fuel

[Module details ^](#)

Module 3 • 1 hour to complete

What's included

 4 videos  2 readings  1 assignment

[Hide info about module content ^](#)

 **4 videos • Total 23 minutes**

Uranium enrichment • 4 minutes

Uranium enrichment. Part 2 • 5 minutes

Front end facilities • 5 minutes

Front end facilities. Part 2 • 8 minutes

 **2 readings • Total 20 minutes**

Uranium enrichment • 10 minutes

Uranium enrichment. Part 2 • 10 minutes

 **1 assignment • Total 45 minutes**

Assessment 3 • 45 minutes

Nuclear Fuel Fabrication

[Module details ^](#)

Module 4 • 2 hours to complete

What's included

 3 videos  2 readings  2 assignments

[Hide info about module content ^](#)

[3 videos • Total 15 minutes](#)

Fuel fabrication • 6 minutes

Fuel fabrication. Part 2 • 3 minutes

Front end facilities • 5 minutes

[2 readings • Total 20 minutes](#)

Fuel fabrication • 10 minutes

Fuel fabrication. Part 2 • 10 minutes

[2 assignments • Total 105 minutes](#)

Practical assignment 2 • 45 minutes

Assessment 4 • 60 minutes

Case of study

Module 5 • 2 hours to complete

[Module details ^](#)

What's included

[1 video](#) [2 readings](#) [1 assignment](#)

[Hide info about module content ^](#)

[1 video • Total 8 minutes](#)

Calculate material balance associated with front end • 8 minutes

[2 readings • Total 20 minutes](#)

Material balance in the front-end of the nuclear fuel cycle • 10 minutes

MOOC credits (spanish) • 10 minutes

[1 assignment • Total 120 minutes](#)

Front-end case study • 120 minutes



Earn a career certificate

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Instructor

Instructor ratings [5.0 ★ \(6 ratings\)](#)



[Juan Luis François Lacouture](#)

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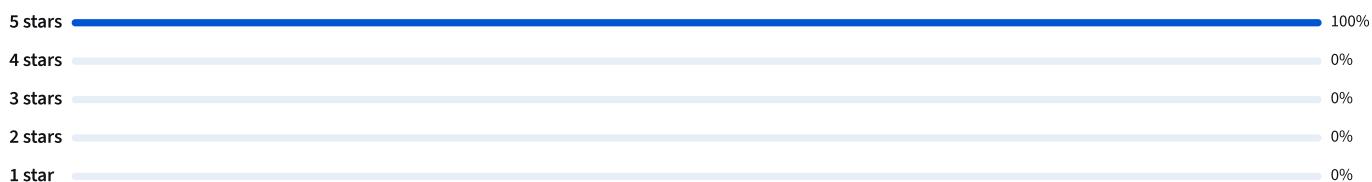


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◀ ▶

★ 5.0 20 reviews



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★ 5 · Reviewed on Oct 9, 2025
 Excellent teaching, very interesting topics, well-explained with plenty of real-life examples.

MK
★ 5 · Reviewed on Jul 10, 2025
 Great opportunity for me to learn advance nuclear physics material.

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^ When will I have access to the lectures and assignments?

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^ What will I get if I subscribe to this Specialization?

When you enroll in the course, you get access to all of the courses in the Specialization, and you earn a certificate when you complete the work. Your electronic Certificate will be added to your Accomplishments page - from there, you can print your Certificate or add it to your LinkedIn profile.

↖ Is financial aid available?

Yes. In select learning programs, you can apply for financial aid or a scholarship if you can't afford the enrollment fee. If fin aid or scholarship is available for your learning program selection, you'll find a link to apply on the description page.

More questions



[Visit the learner help center](#)

Financial aid available, [learn more](#)

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Cybersecurity	Google Data Analytics Certificate	Computer Science	Examples of Strengths and Weaknesses for Job Interviews
Data Analytics	Google IT Support Certificate	Data Science	High-Income Skills to Learn
Digital Marketing	Google Project Management Certificate	Education & Teaching	How Does Cryptocurrency Work?
English Speaking	Google UX Design Certificate	Engineering	How to Highlight Duplicates in Google Sheets
Generative AI (GenAI)	IBM Data Analyst Certificate	Finance	How to Learn Artificial Intelligence
Microsoft Excel	IBM Data Science Certificate	Healthcare	Popular Cybersecurity Certifications
Microsoft Power BI	Machine Learning Certificate	Human Resources (HR)	Preparing for the PMP Certification
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