TRAINING PROGRAMME · INTER-COMPANY COURSE

code_aster from a developer's perspective

CODE_aster

DATES	DURATION	FORMAT	LEVEL	PRICE
March 18, 2027 early bird −10%	**1 day · 7 h**	**Remote · English**	**Advanced**	**€900 excl. VAT** Academic €400 excl. VAT

Audience

- **Industry:** engineers and developers contributing to the source code, packaging deliverables or deploying on HPC.
- **Academia:** researchers and PhD students developing their own features in code_aster.

Prerequisites

Good user-level practice of code_aster. Basic Python and C++/Fortran welcome; no prior compilation experience needed.

Practical arrangements

Maximum group size: 6 participants per trainer during practical work. Inter-company course.

Registration and access time

Registration through the online form on the session page, at least 30 days before the start of the session: https://simvia.tech/services/training/code-aster-developer-toolbox-online-training-202704

Overview
(context, benefits)

Get hands-on with the code_aster development environment: from compiling the source to shipping an image, including code modification and regression testing.

A resolutely hands-on course: practical work built on a review of the theoretical fundamentals, with exercises of increasing difficulty, from discovery to an industrial case.

The complete workflow: the tools of the simulation chain (Salomé, code_aster, ParaView) are used together, as in a real study.

Practising trainers: our engineers and PhDs use these codes every day on industrial projects.

Close supervision: 1 trainer for a maximum of 6 trainees during practical work.

An inter-company format that encourages participants to share their experience with peers.

Objectives and targeted skills

Learning objectives, assessed during and at the end of the course. By the end of the course, participants will be able to:

- Set up a local development environment and compile code_aster.
- Modify Python, C++ or Fortran code and recompile incrementally.
- Validate a change with non-regression tests (.mess, OK/NOOK).
- Build and version a Docker or Apptainer image of your version.

Course content

MORNING **From the source code to your first modification**

- Repository layout: Python, C++, Fortran, catalogues, tests
- Local environment: devcontainer, Spack, dependencies
- Full vs incremental build, quick diagnosis of a build error
- First Python/catalogue change, validated by a run

AFTERNOON **Compiled change, tests and delivery**

- Day-to-day architecture: where to go depending on what you change
- C++ or Fortran change and incremental rebuild
- Testing: .mess files, OK/NOOK criteria, non-regression tests
- Docker image, Apptainer/Singularity conversion, versioning

Teaching methods

Remote course in a virtual classroom, in English.

Active teaching alternating theory and hands-on practical work on the participant's own computer, with exercises of increasing difficulty.

Resources: virtual classroom with screen sharing, course materials given to each participant, remote assistance from the trainer during practical work.

Pre-course call to understand participants' needs; end-of-day review (feedback and adjustments); immediate satisfaction survey at the end of the course.

Supervision

Simvia adapts each course to the actual needs of the trainees. Sessions rely on active teaching, with practical and personalised exercises that anchor learning in real time.

Theory sessions alternate with supervised practical work.

Equipment

Computer with an internet connection, microphone and speakers or headset; software installed before the session (installation help is provided).

Duration

Total duration: 1 day, i.e. 7 hours.
Schedule: 9:00 am – 12:30 pm and 1:30 pm – 5:00 pm.

Dates

March 18, 2027

Location

Remote course in a virtual classroom, inter-company format. The connection link is sent with the joining instructions.

Price per participant

Company: €900 excl. VAT per participant.
Academic: €400 excl. VAT per participant.
Included: help with installing the latest version of the software, training completion certificate.

Early bird (10% off the company price): €810 instead of €900 excl. VAT for any registration by **January 18, 2027**, 2 months before the start of the session.

French companies may have the course covered by their OPCO (French skills operator) under the skills development plan. Not eligible for CPF (French personal training account).

Accessibility

Simvia is committed to making its courses accessible to people with disabilities; our premises are accessible to people with reduced mobility. Our trainers adapt their teaching methods to each situation. For any specific need, please contact our disability officer: oumaima.nassif@simvia.tech.

Course manager, contact	**Teaching manager:** Florian Hermet, florian.hermet@simvia.tech **Administrative and disability officer:** Oumaima Nassif, oumaima.nassif@simvia.tech **General contact:** training@simvia.tech
Trainers	**Basile Marchand** PhD in computational mechanics, computational mechanics tech lead Practising code_aster trainer at Simvia, working daily on industrial projects. If unavailable, a trainer with equivalent expertise is appointed and confirmed in the joining instructions.
Attendance and certificate	Attendance sheet signed by trainees and trainer for each half-day. Training completion certificate issued upon passing the final assessment.
Assessment	Formative assessment during the practical work. Summative assessment at the end of the day (validating learning across the course). Immediate satisfaction survey at the end of the course. Delayed assessment 2 months after the course, for the trainee and the company.
Going further	Simvia offers specialisation modules and a technical support service to deepen and extend skills development. Full catalogue: https://simvia.tech/services/training/catalog