



## FUSION TECHNOLOGIES & ENGINEERING

### Profile 1 - Electrical Engineering – Instrumentation & Control (I&C)

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Electrical Engineering - I&C	Barcelona (Spain)	12 months	1

#### Description of tasks

- Support the development of electronics systems for the ITER I&C Systems
- Assist in the design, testing, and implementation of electronic components and circuits.
- Contribute to the preparation of technical specifications, schematics, and documentation.
- Support integration and verification activities to ensure proper functioning of electronics systems.
- Collaborate with engineering teams to optimise electronic solutions for ITER requirements.

#### Your qualifications

- Bachelor's degree in Industrial Engineering, Electrical Engineering, or Electronics Engineering.

#### Advantageous

- Knowledge of electrical and electronic engineering principles.

Ability to support electronics design, testing, and integration activities.

#### Competencies

- Strong analytical and problem-solving skills.
- Good communication and organisational skills, with the ability to work effectively in multidisciplinary teams.

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Electrical Engineering - I&C	Barcelona (Spain)/Cadarache (France)	12 months	2

#### Description of tasks

- Support activities related to Instrumentation and Control Systems for fusion diagnostic and heating systems.
- Contribute to the modelling and testing of diagnostics, including support to experimental validation activities.
- Assist in the preparation, testing, and commissioning of diagnostics and additional heating systems.
- Support the analysis of measurement data and contribute to technical reporting.
- Participate in the preparation of technical documentation and assist with system integration and testing activities.

#### Your qualifications

- Bachelor's degree in Industrial Engineering, Electrical Engineering, Electronics Engineering, Instrumentation and Control Engineering, or another relevant technical discipline.

#### Advantageous

- Basic understanding of instrumentation and control systems.
- Interest in diagnostics, measurement systems, and high-power RF technologies such as gyrotrons.
- Ability to support testing, commissioning, and data analysis activities.

#### Competencies

- Good analytical and problem-solving skills.
- Good communication and organizational skills, with the ability to work effectively in multidisciplinary teams.

## Profile 2 - Engineering Analysis Plasma Engineering & System Qualification

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Engineering Analysis Plasma Engineering & System Qualification	Barcelona (Spain)	12 months	1

### Description of tasks

- Support activities related to nuclear analysis and the management and use of nuclear data.
- Assist in performing analyses to support nuclear engineering studies and safety assessments.
- Contribute to the processing, verification, and organisation of nuclear data used in simulations and analyses.
- Support the preparation of technical documentation and reports related to nuclear analysis activities.
- Contribute to the development and improvement of tools used in the workflow for nuclear analyses.
- Collaborate with engineering and physics teams to support ongoing nuclear studies.
- Assist in the technical meetings.

### Your qualifications

- Bachelor's degree in Engineering or Physics, preferably with a specialisation in Nuclear Engineering or a related field.

### Advantageous

- Knowledge of relevant nuclear physics, shielding and radiation transport principles.
- Basic knowledge of radiation transport codes (e.g., MCNP, OpenMC) and activation codes (e.g., FISPACT-II, ACAB).
- Basic knowledge of Python and collaborative code development.

### Competencies

- Proactive approach to problem-solving and initiative-taking.
- Teamwork skills, collaborating effectively with colleagues, sharing ideas, and supporting each other to achieve common goals.
- Basic knowledge of fusion-based experimental devices: ITER, IFMIF, JT-60SA and DEMO in particular.

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Engineering Analysis Plasma Engineering & System Qualification	Barcelona (Spain)	12 months	1

#### Description of tasks

- Support the development of applications for pre-processing and post-processing of FEM (Finite Element Method) models.
- Assist in setting up, running, and analysing FEM simulations for mechanical components and systems.
- Contribute to the development of scripts or tools to automate FEM workflows and data analysis.
- Support documentation of FEM analyses, including results, findings, and recommendations.
- Collaborate with engineering teams to optimise FEM modelling approaches and improve simulation efficiency.

#### Your qualifications

- Bachelor's degree in Mechanical Engineering or a related engineering discipline.

#### Advantageous

- Knowledge of FEM theory and practical experience with FEM codes such as ANSYS and/or Abaqus.
- Familiarity with programming or scripting (e.g., Python) for automation or post-processing.

#### Competencies

- Strong analytical and problem-solving skills.
- Good communication and organisational skills, with the ability to work in multidisciplinary teams.

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Engineering Analysis Plasma Engineering & System Qualification	Barcelona (Spain)	12 months	1

#### Description of tasks

- Contribute to the modelling and analysis of Electron Cyclotron (EC) wave transmission and RF behaviour.
- Assist in performing RF stray radiation analyses and related electromagnetic simulations.
- Support benchmarking of simulation results with available experimental data.
- Contribute to the development, testing, and analysis of small-scale mock-ups to validate electromagnetic models.
- Support electromagnetic analyses related to Neutral Beam magnetic shielding systems.

#### Your qualifications

- Bachelor's degree in Electrical Engineering, Industrial Engineering, or another relevant engineering discipline.

#### Advantageous

- Knowledge of electromagnetics and RF modelling principles.
- Experience or familiarity with electromagnetic simulation tools such as ANSYS or other finite element software.
- Interest in simulation, modelling, and experimental validation.

#### Competencies

- Strong analytical and problem-solving skills.
- Good communication and organisational skills, with the ability to work in multidisciplinary teams.

## Profile 3 - Materials Manufacturing & Metrology

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Materials Manufacturing & Metrology	Barcelona (Spain)	12 months	2

### Description of tasks

- Support virtual assembly activities, including modelling of mechanical systems and components.
- Contribute to the development of virtual assembly models to analyse tolerances, fits, and mechanical interfaces.
- Assist in performing metrology and mechanical engineering assessments using virtual models.
- Support automation and robotics activities related to measurement processes.
- Contribute to the development and optimisation of robotics and automated solutions for measurement and assembly tasks.
- Support documentation of assembly and measurement automation analyses, findings, and recommendations.
- Collaborate with engineering teams to improve design accuracy, assembly processes, and automation workflows.

### Your qualifications

- Bachelor's degree in Engineering or any other technology-related field, preferably with a focus on Mechanical Engineering.

### Advantageous

- Basic understanding of general mechanical engineering principles, including tolerances and fits.
- Familiarity with metrology and measurement techniques, and robotics automation.
- Ability to develop and work with virtual assembly models and automated measurement processes.

### Competencies

- Good analytical and problem-solving skills.
- Good communication and organisational skills, with the ability to work in a multidisciplinary team.

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Materials Manufacturing & Metrology- Materials Manufacturing	Barcelona (Spain)	12 months	1

#### Description of tasks

- Support the development and deployment of the Neutral Beam (NB) Technical Coordination Hub on SharePoint, including improving site structure, organizing pages, and optimizing data repositories.
- Collaborate with IT to automate data imports and develop reporting tools using Power BI.
- Collect technical information from project managers on NBI components (manufacturing, qualification, interfaces, safety, compliance) and populate the Hub.
- Maintain reporting tools and support overall project coordination.
- Support the Neutral Beam in technical transversal activities related to manufacturing processes and procedures.

#### Your qualifications

- Bachelor's degree in Mechanical Engineering, Materials Engineering, or a related engineering discipline.

#### Advantageous

- Understanding of technical coordination and project support.
- Understanding of manufacturing processes and process management principles.

#### Competencies

- Communication and teamwork skills.
- Proactive approach and ability to take initiative.
- Autonomy and curiosity in problem-solving.
- Digital skills for data handling, SharePoint, and reporting tools.

## Profile 4 - Mechanical Engineering

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Mechanical Engineering	Barcelona (Spain)	12 months	2

### Description of tasks

- Support activities related to the Technology Development Programme (TDP) and Tritium Projects.
- Assist in the follow-up and monitoring of ongoing TDP tasks and related technical developments.
- Contribute to the analysis and mapping of manufacturing processes to support technology development and improvement activities.
- Support engineering assessments related to functional performance and manufacturing processes, particularly in areas such as vacuum, cryogenics, and tritium systems.
- Assist in engineering analyses, including FEM simulations, CAD modelling, and fabrication process evaluations.
- Contribute to the preparation of technical documentation, reports, and project follow-up materials.
- Collaborate with multidisciplinary teams to support the implementation of technology development and engineering activities.

### Your qualifications

- Bachelor's degree in Mechanical Engineering, Physics, Metallurgy, or another relevant engineering discipline.

### Advantageous

- Knowledge of FEM, CAD, and fabrication technologies.
- Basic understanding or interest in vacuum systems, cryogenics, or tritium-related technologies.

### Competencies

- Strong analytical and problem-solving skills.
- Adaptable with the ability to work in a dynamic technical environment.
- Good communication and organisational skills, with the ability to collaborate in multidisciplinary teams.

## Profile 5 - Technology Development Programme

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Technology Development Programme	Barcelona (Spain)	12 months	1

### Description of tasks

- Support Technology Development Programme (TDP) activities, including the organisation of workshops and technical meetings.
- Assist in exploiting and analysing results from TDP workshops to support critical technology mapping.
- Contribute to Technology Breakdown, Technology Assessment, and Technology Road mapping activities.
- Support the preparation of technical reports and documentation summarising findings and recommendations.
- Collaborate with multidisciplinary teams to ensure effective execution of TDP objectives.

### Your qualifications

- Bachelor's degree in Engineering or any other technology-related discipline.

### Competencies

- Familiarity with, or willingness to engage in, Technology Breakdown, Technology Assessment, Technology Mapping, and Road mapping activities.
- Ability to support technical reporting and documentation.
- Strong analytical and organisational skills.
- Ability to work collaboratively in multidisciplinary teams.
- Knowledge on data visualization tools (e.g. power BI) or willingness to acquire it.

## Profile 6 - Project Engineering, CAD & Technical Data Management

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Project Engineering, CAD & Technical Data Management	Barcelona (Spain)	12 months	1

### Description of tasks

- Support AI and machine learning activities applied to technical follow-up and project monitoring.
- Contribute to the development of AI tools and models to analyse technical data and support decision-making.
- Assist in the processing, analysis, and interpretation of data from materials, manufacturing, or engineering processes.
- Support the integration of AI solutions within engineering and technical workflows.
- Collaborate with teams to test, validate, and optimise AI models for practical applications.
- Support the Technology Development Programme activities related to AI.
- Support internal training activities on AI

### Your qualifications

- Bachelor's degree in Data Science, Engineering (Nuclear, Materials, Industrial, Mechanical), or Physics.

### Advantageous

- Knowledge of AI and machine learning methods and tools.
- Understanding of data science applications in materials, manufacturing, or engineering contexts.

### Competencies

- Strong analytical and problem-solving skills.
- Ability to work collaboratively in multidisciplinary teams.
- Good communication and organisational skills.

Department	Domain/Activity area	Location	Duration	Nr of position(-s) available
FUSION TECHNOLOGIES & ENGINEERING	Project Engineering, CAD & Technical Data Management	Cadarache (France)	12 months	1

#### Description of tasks

- Support activities related to the leak detection system, including the management and tracking of mechanical components.
- Assist in the organisation and monitoring of components throughout fabrication, delivery, and integration phases.
- Contribute to maintaining and updating component databases and related documentation.
- Support preparation of technical documentation and reporting related to component management.
- Collaborate with engineering and fabrication teams to ensure proper traceability and configuration of system components.

#### Your qualifications

- Bachelor's degree in Mechanical Engineering, Manufacturing Engineering, or another relevant discipline.

#### Competencies

- Basic understanding of mechanical systems and fabrication processes.
- Ability to manage and organise technical information and component data.
- Familiarity with databases and data management tools.
- Good analytical and organisational skills.
- Good communication skills and ability to work in multidisciplinary teams.