



Mechanical engineer in the EN-MME design office

Project code	51
Supervisor	Federico Carra
Department	EN
Title	
Mechanical engineer in the EN-MME design office	
Description	
<p>The mandate of the EN-MME group is to provide to the CERN community specific engineering solutions combining mechanical design, fabrication and material sciences. EN-MME involves a large spectrum of highly specialized activities, including on-site facilities and sub-contracting: CAD design, advanced calculations, high precision CNC machining, sheet metal forming, welding and vacuum brazing, dynamic and static measurements, micrometric 3D metrology, metallurgical analysis, destructive and non-destructive material testing.</p> <p>You will be assigned to the EN-MME design office, the biggest design office at CERN, in charge of the design of components to be installed in particle accelerators and detectors. You will be responsible of engineering studies, typically with analytical and numerical tools, with the goal of defining and validating the design of new components.</p>	
Functions and Training Value	
<p>You will join the engineering team within the EN-MME group, with the following tasks: Participate to the design of new hardware to be installed in particle accelerators, through advanced analytical and numerical calculations. Apply the main international Standards for the safety validation of the equipment. Provide support to the equipment owners in the operation of particle accelerator elements, studying upgrades to the operating conditions, performing diagnostics through calculations in case of malfunctioning, studying remedies that can be put in place by the MME main workshop, optimizing the component's behaviour. Device ad-hoc experiments to validate the design solutions in terms of materials and geometry. The tests are performed at CERN, or at the premises of international partners. Perform calculations with explicit codes to benchmark and optimize technological processes such as forming, bending, cutting, brazing and welding, which are typically adopted by the MME main workshop and by CERN subcontractors during the production of new components. Prepare presentations, reports and technical notes of the studies performed.</p>	
Qualifications/Skills	
<p>Profile: Master degree in mechanical engineering or equivalent.</p> <p>Technical experience with finite element codes and software such as Matlab or Mathcad. Familiarity with 3D CAD tools and precision manufacturing, assembly and construction methods, including preparation, planning, drawing and quality control. Motivated to work in a team and in a multidisciplinary environment and to follow-up components from conception through to operation.</p>	



Specific details: A good proficiency in spoken and written English is required, with the ability to draw-up technical specifications and/or scientific reports and to make oral presentations. French is an asset, and the willingness to learn French is required. Good working knowledge of ANSYS would be an asset.