

Student assistants needed

Job Profile:

Space Suit Simulator Developers (Mechanical/Electrical)

We are seeking **two motivated student assistants (HiWi)** to support the design, construction, and testing of a planetary exploration suit simulator. The space suit simulator will be used in laboratory and analog environments for research on human performance limitations in planetary (Martian/Lunar) surface operations.



Figure 1: A modified Atlas Devices EXCON suit simulator being used at the LUNA analog research facility (Credit: DLR/ESA).

We are seeking one candidate with a focus on **mechanical design and prototyping** and one with a focus on **electronics and sensor integration**; applicants with overlapping skill sets are welcome. The student assistants will work closely with a PhD student, other students, and technical staff. The student assistant(s) may have the option to extend their work to a master's thesis if a relevant independent research focus is determined.

Expected tasks include supporting or contributing to: engineering requirements definition, configuration trade studies, mechanical/electrical design of suit components, material/component selection and procurement, fabrication and assembly of suit components, integration of sensors/electronics/displays, data logging and monitoring solutions, fit tests and experiments with suited users, documentation of designs/test setups/operating procedures, and potential conference or journal publications.

Requirements:

Basic Requirements (all required)

- Language skills:
 - **English written and oral fluency** (B2 minimum)
 - **German written and oral fluency** (B2 minimum)
- Strong written and verbal communication skills
- Ability to work independently and in small, interdisciplinary teams
- Current enrollment in an engineering or other relevant bachelor's or master's program

Core Requirements (some required)

- Knowledge in at least one (1) of the following:
 - **Mechanical design** (basic structural design, dimensioning, tolerances, material selection, load considerations)
 - **Electrical design** (circuit design, power distribution, grounding/shielding concepts, understanding of communication interfaces)
- Work experience in at least one (1) of the following:
 - **CAD modeling and engineering drawings** (SolidWorks or similar) and **manufacturing/prototyping** (3D printing, basic machining, use of hand tools)
 - **Electronics integration** (wiring and integrating sensors, working with microcontrollers, assembling and testing circuit boards, cable routing and connecting, data logging and synchronization)

Additional Desired/Bonus Skills (none required, but good to have)

- Knowledge in:
 - **Systems engineering processes** (functional decomposition, engineering requirements, verification and validation processes, trade studies, interface definition)
 - **Human spaceflight and extravehicular activity** (basic understanding of EVA operations, constraints of pressurized exploration suits)
 - **Wearable systems and anthropometry** (human-device interfaces, ergonomic design, fit and comfort considerations, familiarity with anthropometric measurements)
- Experience in:
 - **Soft-goods/textile fabrication** (sewing, modifying garments, use of technical fabrics)
 - **Hardware testing** (test planning and execution, data collection, test reports)
 - **Experimentation with human participants**

The employment is based on the wage agreement for student assistants with up to **42 hours/month**.

Please send your application (letter of motivation, CV, TOR) to:

Kevin May

kevin.may@zarm.uni-bremen.de

Tel.: +49 421 218-57948

Dr.-Ing. Christiane Heinicke

christiane.heinicke@zarm.uni-bremen.de

Tel.: +49 421 218-57855
