

# Project proposal

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Title: Main module monocoque design and manufacturing  
 Supervisor: ...  
 Timeframe: Spring 2022

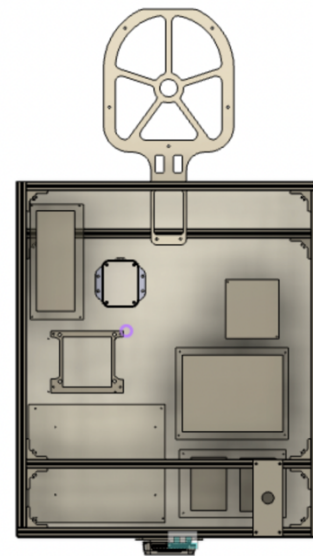
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EPFL Xplore is an interdisciplinary project which aim is to design and develop rovers to participate in international competitions, namely The University Rover Challenge and the European Rover Challenge.

## Project description

As complex machines, these rovers integrate numerous systems, from computers to batteries, including sensors that need to be carefully placed for optimal reading. It is the function of the main module to integrate these components while maintaining structural rigidity and resistance.

The purpose of this project is to design the next generation of Xplore's main module as a monocoque structure. The student will first need to understand the requirements that he/she needs to fulfill then choose the proper materials and the manufacturing technique. He/She will next be able to design the module and test it by means of simulations (static and dynamic FEA) but also manufacture small samples to test them for real.



The student will be part of the Xplore Structure Team to facilitate communication and information sharing regarding past and current designs.

## Requirements

- Prior knowledge of Fusion360 and advanced CAD skills
- Basics in FEA Analysis (static and dynamic)

- Strong basis in composite materials

**Contact**

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