Engineering Project

Chair of Helicopter Technology

Forward Flight Propeller Test Rig Design for New Lab Course

Keywords: Testing, Experimental, Propeller Design

Background:

As part of our teaching plan, we would like to create a new lab course that teaches students the design of rotors/ propellers. Within this course, students will engage in the complete design cycle by creating small-scale propellers (approximately 20 cm in diameter), manufacturing them via 3D printing, and subsequently evaluating their performance using a purpose-built experimental setup.

To support this, we are currently building a test rig capable of assessing propeller performance in both hover and forward flight conditions, using a small wind tunnel.

Goal: In this Project we want your team to design a simple test rig for small propellers. Your tasks will be the selection of components, such as motor, controller and drive shaft and the subsequent design and assembly of the test rig. A final test for proper functionality will conclude the project.

Work packages:

- **Research of suitable components**
- **Design, assembly and testing of the test rig**
- **Testing the feasibility of 3D-printed rotor blades**

About us: We are looking for a team of independent and highly motivated students, with interest in helicopters, testing and practical work for an engineering project.

Skills: High motivation and the ability to independently familiarize with new topics. Construction Skills, Experience in RC model making preferred.

Language: English/German
Start: as soon as possible
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