

TODO

WORK PACKAGE

TITEL : Development & Integration of Weight-On-Bit (WOB) Module

WOPA.Nr: 0005

CONTEST YEAR: 2023/2024

ISSUED BY: C. SOILEMEZIDIS

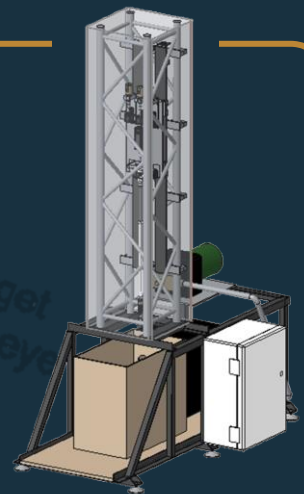


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Drillbotics® is a prestigious international university competition where teams from around the globe collaborate to design and develop an autonomous directional drilling rig. This challenge merges engineering expertise with innovation, aiming to revolutionize the drilling industry while promoting collaboration and hands-on experience.



OBJECTIVE

DEADLINE: 31st December 2023

To design, develop, and integrate a WOB module into the rig, providing accurate force measurements and insights into the dynamics of drilling.

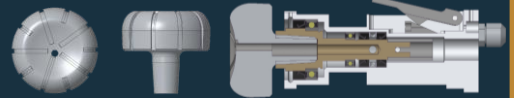
DESCRIPTION

This task aims to introduce the student to the intricacies of force measurements, especially in the context of drilling operations. Delving deep into how WOB data is acquired and interpreted, the student will gain insights into why WOB data appears the way it does. They will grapple with challenges like noise in measurements and will learn techniques to filter out these disturbances for clear, accurate data capture. The technical aspects of the task involve familiarizing oneself with Kicad for PCB design, where the student will craft a specialized board for the WOB module. Simultaneously, they will immerse themselves in C programming to develop code for the module's microcontroller, ensuring its seamless functioning within the rig's ecosystem.

OUTCOME

Upon successful completion of the task, the rig will be enhanced with a state-of-the-art WOB module that offers precise force measurements and enriches the data pool available for drilling operations. The student will not only grasp the mechanical and electronic underpinnings of force measurement but will also become adept at using Kicad for PCB design and programming microcontrollers using C. Additionally, they'll gain a deeper understanding of the practical challenges in drilling operations and how technology can be leveraged to address them.

CONTACT



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Student Work Packages

Students interested in hands-on experience and applying their academic knowledge are encouraged to take on these work packages. If you're keen to express interest, apply for a work package, or seek more details, please contact us. It's up to you to decide whether the task aligns with your skills and interests. If you lack experience in the highlighted fields (in BLUE), seize the opportunity to learn with us. Don't worry; the primary requirement is motivation. This journey is all about learning and growing.

Certificate of Completion for Work Packages

Upon successful and timely completion of the designated work package, and if the specified outcomes are met, a certificate will be issued to the individual responsible for the task. This certificate stands as an official recognition of the individual's diligence, skill, and commitment to the project.

Complexity grade

1. 20h	3. 60h	5. 100h
2. 40h	4. 80h	6. >100h



Complexity grade

6
5
4
3
2
1



TUC Drillbotics®
learning & creation



MECHANICAL



ELECTRICAL



ADMINISTRATIV



PROGRAMMING



AI



DESIGN