

# QLABS VIRTUAL ROTARY FLEXIBLE LINK

## Virtual platform for distance and blended undergraduate control systems courses

QLabs Virtual Rotary Flexible Link is a fully instrumented, dynamically accurate digital twin of the Quanser Rotary Flexible Link system. It behaves in the same way as the physical hardware and can be measured and controlled using MATLAB®/Simulink® and other development environments. With QLabs Virtual Rotary Flexible Link, you can enrich your lectures and activities in traditional labs, or bring credible, authentic model-based lab experiences into your distance and online control systems course.

Same as the physical Rotary Flexible Link, this virtual experiment is ideal for the analysis and control of vibrations encountered in large, lightweight robotic structures that exhibit flexibilities and require feedback control for improved performance.

QLabs Virtual Rotary Flexible Link is available as a 12-month, multi-seat subscription. The platform is compatible with the physical Rotary Flexible Link curriculum, which covers various modelling and control topics.

### Features



#### Academically appropriate

High-fidelity, credible lab experiences equivalent to use of physical lab equipment



#### Comprehensive Resources

ABET-aligned curriculum



#### Open access

Full access to system parameters through MATLAB®/Simulink®



#### Scalable

12-month, multi-seat subscription

### Courseware

#### Modelling Topics

- Lagrange derivation
- State-space representation
- Model validation
- Parameter estimation

#### Control Topics

- Linear-quadratic regulator
- Vibration control

QLabs Virtual Rotary Flexible Link runs on Windows 10 (64-bit) and requires MATLAB and Simulink R2019a or later (not included).

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