QUANSER
INNOVATE·EDUCATE

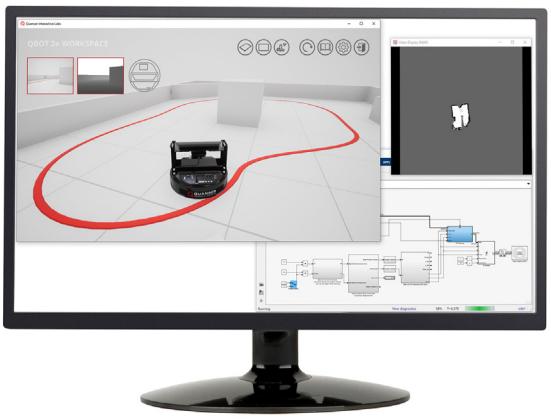
QLABS VIRTUAL QBOT 2e

Virtual platform for distance and blended undergraduate and advanced robotics courses

QLabs Virtual QBot 2e is a fully instrumented, dynamically accurate virtual twin of a classic Quanser QBot 2e system. It behaves in the same way as the physical hardware and can be measured and controlled using MATLAB®/Simulink® and other development environments. QLabs Virtual QBot 2e can enrich your lectures and activities in traditional labs, or bring credible, authentic model-based lab experiences into your distance and online robotics course.

Same as the physical QBot 2e, the virtual system is an autonomous ground robot featuring built-in sensors and vision system.

Features



Academically appropriate

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

Comprehensive Resources

Curriculum mapped to popular robotics textbooks

Open access

Full access to system parameters through MATLAB®/Simulink®

Scalable

12-month, multi-seat subscription

Courseware

- Differential drive kinematics
- Forward and inverse kinematics
- Dead reckoning and odometric localization
- Path planning and obstacle avoidance
- 2D mapping and occupancy grid map
- Image acquisition, processing and reasoning
- Localization and mapping
- High-level control architecture of mobile robots
- Vision-guided vehicle control

Product Details

QBot 2e Virtual Sensors:

- 3 digital bumper sensors
- 1 Z-axis angle measurement (heading)
- 1 Kinect RGBD sensor
  - Camera resolution: 640 x 480
  - Depth sensing: 11 bit
  - Depth sensor range: 0.5 - 6 m

QLabs Virtual QBot 2e runs on Windows 10 (64-bit) and requires MATLAB and Simulink R2019a or later (not included).