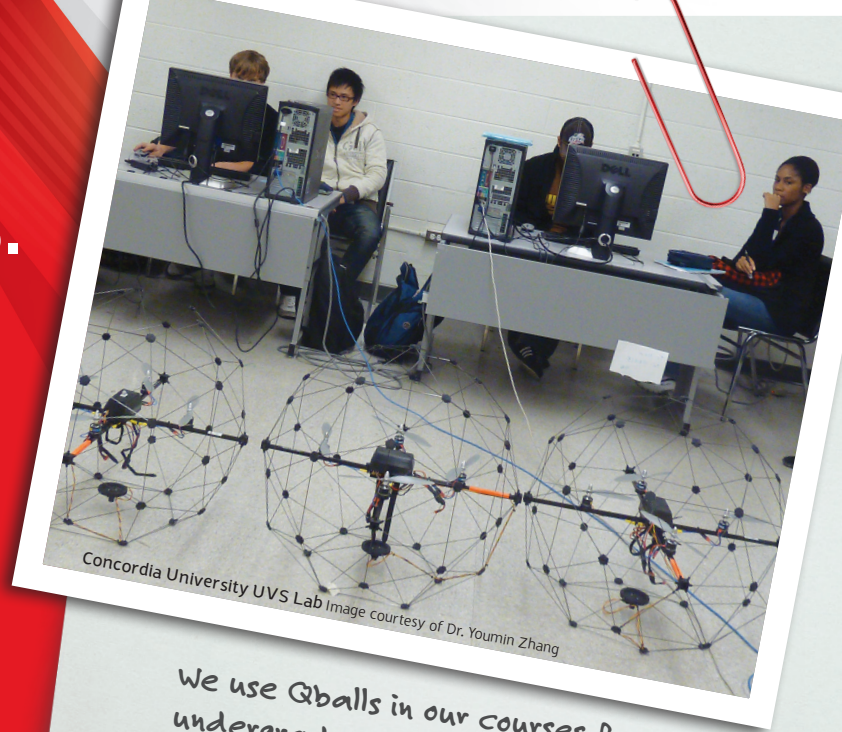


# Unmanned vehicles. Let students take control.



Concordia University UVS Lab Image courtesy of Dr. Youmin Zhang

We use Qballs in our courses for undergraduate and graduate students to demonstrate the concept of flight control. This cutting-edge technology helps students link theory with engineering practice. Students are attracted and motivated to continue in their studies and work.

Dr. Youmin Zhang  
Concordia University, Canada

The Quanser Unmanned Vehicle Systems (UVS) Laboratory is a multi-purpose, multi-agent platform for study and development of unmanned aerial vehicles and mobile robotics. Designed for indoor use, with this lab you can perform a wide range of experiments, including vehicle modeling and control, motion planning, obstacle avoidance, sensor fusion, fleet maintenance, multi-agent navigation and autonomous/supervisory operation in a safe, controlled environment.

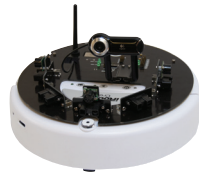
## Six components of an unmanned vehicle lab:



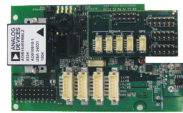
PC-based control station optimizes UVS Labs. PC is pre-configured with MATLAB®/Simulink®, Real-Time Workshop®, QUARC® control design software and pre-designed controller.



Qball-X4 unmanned aerial vehicle, an open-architecture quadrotor with an embedded computer is ideal for advanced multi-agent missions and teaching basic vehicle navigation and control.



Qbot mobile robot has a built-in processor, sensors and vision system. Curriculum is included and gives students hands-on experience with motion planning, mapping, path tracking, obstacle avoidance and more.



Onboard data acquisition and computer allow for wireless communication between unmanned vehicles. Configure parameters in real-time and observe sensor measurements from control station.



Tracking system consists of six infrared cameras that allow for accurate measurement of unmanned vehicle positions, essential for performing autonomous missions.



QUARC® control design software integrates with Simulink® and allows students to design, implement and test control theory in real-time – quickening development and integration.



QUANSER  
INNOVATE. EDUCATE.

Inquire about a demo: [info@quanser.com](mailto:info@quanser.com) or 1-877-781-6737

**CAPTIVATE. MOTIVATE. GRADUATE.**