

Keysight Smart Bench Essentials Series What Global Educators and Students Are Saying

Introduction

Smart Bench Essentials harnesses the power of four unique test instruments – a digital multimeter (DMM), power supply, function generator, and oscilloscope – through one graphical interface with integrated data management and analysis. The solution is powered by Keysight PathWave BenchVue software and provides a trusted and comprehensive bench setup at an affordable price to meet university budgets.



Educator Testimonials

Alex Hanson, assistant professor, electrical and computer engineering, University of Texas at Austin

“The scope is very cool. The performance to price ratio is great. It’s a gamechanger for education.”

Dylan Spruill, ECE Senior Design Teaching Assistant, North Carolina State University

“These [Keysight EDU36311A DC Power Supply] are significant improvements over most of our power supplies. We can even set delays on the channels as well as current limits on the channels. It has a very easy-to-use user interface, especially for those already used to using Keysight oscilloscopes.

This [Keysight EDU34450A Digital Multimeter] is an insanely easy to use multimeter that can read DCV, ACV, 2 Wire Resistance, 4 Wire Resistance, Continuity, Diodes, DCI, ACI, Frequency, Temperature (with a specific thermistor) and Capacitance. You can set the sample rate at Slow, Medium, or Fast as well. The user guide is really clearly laid out so if you need to make an AC current ready and never have before, it is quite easy to just look it up in the user guide.”

Mark Bauer, professor at University of Nebraska – Lincoln

“They [Smart Bench Essentials] all match so nicely. It makes a really impressive looking setup here.”

Scott Koziol, engineering professor, Baylor University

“I put myself in the student case where they walk up and use their intuition and twist the knobs, and by and large, I was able to find what I needed to do. There is a lot of capability in these devices for this price point. I can easily pay that for just one oscilloscope.”

Matthew Spencer, associate professor of engineering, Harvey Mudd College

“The power supply has a really nice display, and the wealth of information about current, voltage, power, and current/voltage setpoints made this very easy to use.”

Donald Heer, engineering professor, Oregon State University

“I think they’re really cool looking scopes. Having a lot of experience with scopes, power supplies, and multimeters, they seem very intuitive.”

Philip Leong, engineering professor at the University of Sydney

“Overall, the equipment works intuitively and was a pleasure to use. I like all the buttons and display.”

Sean Hum, engineering professor, University of Toronto

“There’s been a significant move towards virtual laboratories and instrumentation recently, but we really wanted to have a bench for students to be able to test their designs. We feel like students need this experience despite the proliferation of these virtual lab products, and there’s this notion not only in our university but also from companies that hire our graduates that true ECEs touch hardware.

Those same companies are expecting our graduates to have hands-on experience in hardware and testing. I find the Smart Bench Essentials bundle a great all-around package. The instruments fit together very nicely in this cool aesthetic, and it looks great. This would be very attractive for students to use.”

Dr. Dennis Derickson, engineering professor, California Polytechnic State University

“These Smart Bench Essentials fit a good entry-level spot in the test and measurement equipment world with the right amount of the performance and these instruments here are less than I paid for my scope some 12 years ago. Having large displays on the instruments makes it so easy to see. One of the things I like is that the instruments are very lightweight, portable, easy to move around. I really liked the Bode plot function.”

Student Benefits

By using Smart Bench Essentials, students benefit from hands-on lab experience as they develop their basic test and measurement instrumentation skills and gain exposure to the same instruments engineers use every day. With PathWave software, students also have the benefit of accessing their lab equipment remotely and with their peers, to test, analyze, and share data.

Student Testimonials

Justin Merchan, engineering student at University of Illinois, Chicago

"Keysight Smart Bench Essentials has allowed our robotics team to not only perform all the essential measurements and testing in our project, but also it allowed us to improve our projects and data taking. Our favorite feature of the Smart Bench Essentials is the ability to remotely control all the tools from a computer anywhere. This feature was especially handy for team members that preferred to work remotely in our projects. This would not have been possible with our previous tools."

Charlie Yang, engineering student, National Cheng Kung University

"The Keysight Smart Bench Essentials has a very good user interface. I do not need to read the manual to understand how to operate the instrument, which makes this instrument far better than the general physics laboratory instruments of the past. The Smart Bench series also has a beautiful appearance; it looks very fashionable, which instantly makes the laboratory look more advanced. As a student, what impresses me most about Keysight's Smart Bench Essentials are that they can be controlled by computers. It fully meets the needs of modern students."

Peyman Darvish, engineering graduate student, University of Malaya

"The DC power supply can provide us accurate and specific voltage for our systems. From different angle views, the screen can be seen very clearly with really nice resolutions."

Renee Aimba, engineering student at Oregon State University

"The different channels, different colors are very nice. This is more appealing to use. They are very easy to use, too."

Additional Information

To learn more about hands-on learning for in-class, hybrid, and remote teaching, visit Keysight's [Transform Your Academic Teaching Lab](#).