Training the Renaissance Engineer of 2025

By
Keith Curtis
Technical Staff Engineer
Microchip Technology Inc.
2355 W. Chandler Blvd.
Chandler, AZ 85224
Office (480) 792-7026
Fax (480) 792-4150
keith.curtis@microchip.com
www.microchip.com

The Renaissance man was the evolutionary successor to the specialist of the Middle Ages. Whereas the Middle Ages man was only a farmer, or a soldier, or a baker; the Renaissance man was a master of many talents—business, culture, art, music; even tactics and self defense. The resulting sum of all these talents was far greater than the individual parts.

In industry today, we are seeing a similar fusion among the engineering disciplines. For example, the power-supply designer is learning embedded microcontroller design; the mechanical engineer is learning control theory; and the embedded-design engineer is learning about Radio Frequency (RF) design. This fusion is pushing engineers to become "Jacks of All Trades," with design experience in numerous disciplines beyond their core expertise.

This means that today's educators need to develop curriculum that exposes students to a variety of disciplines and helps them to develop a multidisciplined view of electronic design. While this runs counter to the current compartmentalized design methodologies taught today, it can be achieved with existing curriculum material.

This paper will examine some of the hybridization that is occurring in the industry and make recommendations about curriculum changes to address the needs of the 2025 Renaissance Engineer.