As the number of renewable energy generation units and, consequently, solid-state based converters increases in the power grid, many power electronics concepts should be integrated into power system analysis and design. Thus, a power laboratory course with emphasis on the nexus between power electronics and power system is desired. However, the flexibility of instructors in designing a wide range of educational experiments is limited by the use of specialized educational setups. This problem can be resolved by allowing students to assemble their setups using laboratory scaled-down devices; however, implementation times can limit students to focus on the main concepts of the experiments. In particular, lacking experience with hardware description languages to develop switching patterns and control schemes for solid-state based converters further increases the implementation times. In this paper, a technique for rapidly implementing switching patterns and control schemes for power converters is proposed. This technique provides an easy-to-use laboratory allowing students to focus on reinforcing the theory learned in energy conversion, motor-drive, power electronics, and power system classes while still providing instructors with the flexibility to design a wide range of educational