The growth of the planet’s population makes the traditional industrial model of “take, make and waste” unsustainable. The circular economy, in which resources are continuously reused, offers a solution. For manufacturers of durable goods the circular economy requires a well-functioning circular supply chain that includes reverse logistics, product recovery operations, development of markets for recovered products, and integration of reuse and product recovery into the firm’s daily operations. How to educate undergraduate practice-focused engineers in the design, implementation, and operation circular supply chains is un-explored and the purpose of the paper is to identify a suitable teaching method. Because courses in circular supply chain topics are currently non existent, the paper first develops a set of learning goals based on the skillset necessary to design, implement, and operate a circular supply chain. Second, the paper examines whether the teaching method of a similar cross-disciplinary course in innovation can be successfully applied. This teaching method is based on cross-disciplinary team projects that work with innovation in cooperation with a participating firm. The study concludes that the teaching method can be (largely) applied. However, future research should test the paper’s results with studies using data from circular supply chain courses.