

367h An Elective Course in Drug Delivery for Chemical Engineers

Stephanie Farrell

Drug Delivery is a burgeoning field that represents one of the major research and development focus areas of pharmaceutical industry today, with new drug delivery system sales exceeding 10 billion dollars per year. Chemical Engineers play an important and expanding role in this exciting field, yet undergraduate chemical engineering students are rarely exposed to drug delivery through their coursework.

To design and produce a new drug delivery system, an engineer must fully understand the drug and material properties and other design variables that affect the release of the drug from the system. The engineer must also have an active understanding of the relevant areas of pharmaceutical medical sciences in order to collaborate with scientists from those disciplines. This paper describes an elective course that focuses on the application of ChE fundamentals to the design of drug delivery systems. The course structure and topics are presented, several demonstrations and experiments are described, and relevant texts and other references are discussed.