

BIOPROCESSING (BP)

BP 601: Bas Engineering for Scientists**Credits:** 2**College:** School of Design & Engineering**Schedule Type:** Lecture**BP 602: Bas Biochem & Bio for Engineer****Credits:** 2**College:** School of Design & Engineering**Schedule Type:** Lecture**BP 603: Intro to Biopharm Processing****Credits:** 2**College:** School of Design & Engineering**Schedule Type:** Lecture**BP 604: Intro to Downstream Unit Oper****Credits:** 4**College:** School of Design & Engineering**Schedule Type:** Lecture/Lab**BP 605: Intro to Upstream Unit Oper****Credits:** 4**College:** School of Design & Engineering**Schedule Type:** Lecture/Lab**BP 606: Intro to Biopharm & Biologics**

This master level course is part of the Innovation MBA (iMBA) concentration in Biopharmaceutical Commercialization. It is intended for non-scientists and those who are new to the biopharmaceutical and biologics industries. Through a series of case studies and real-life experiences, the course introduces the history of biopharmaceutical development; beginning with first generation treatments, including insulin, human growth hormones and tissue plasminogen activator, to next generation therapeutic modalities, such as CAR-T cell, gene therapy and novel vaccines. Upon completion of this course, participants will be prepared to engage in high level discussions and decisions across all major functional areas related to the commercialization of products in the biopharmaceutical industry. This course will provide participants with a basic scientific background and the ability to participate and contribute to business-related operations that are critical to expanding areas within biopharma, including proteins and monoclonal antibodies, modern vaccines and cell/gene therapies.

Credits: 3**College:** School of Design & Engineering**Schedule Type:** Lecture, On-Line**BP 607: Biopharm Comm: Strat&Analytics**

Commercialization represents the biopharma function that is most visibly tied to overall company health. This function is responsible for bringing drugs to market and overseeing their financial performance. They must work closely with development teams to manage portfolio and pipeline, while also translating successful clinical trials into viable products that are embraced by prescribers and consumers. Interaction with manufacturing is critical as well, as supply chain and demand must be aligned across these functions. Ultimately, if commercialization teams are high-functioning, this translates into strong company performance and investor confidence.

Credits: 3**College:** School of Design & Engineering**Schedule Type:** Lecture, On-Line**BP 608: Biopharm & Bio: Reg & Quality**

This course is part of the Innovation MBA (iMBA) concentration in Biopharmaceutical Commercialization and is intended for students that are new to the biopharmaceutical and biologics industries. Through a series of case studies and real-life experiences, the course introduces the various regulatory guidelines (FDA and EMA) which are followed by the pharmaceutical industry for the approval of biopharmaceuticals and biosimilars. The course also highlights the important regulatory and draft FDA guidelines for next generation therapeutic modalities, such as CAR-T cell, gene therapy and novel vaccines. The regulatory guidelines for implementing QbD in biopharmaceutical processes will be introduced.

Credits: 3**College:** School of Design & Engineering**Schedule Type:** Lecture, On-Line