

# BIEN 680. BIOPROCESSING OF VACCINES.

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Credits: 4

Offered by: Bioengineering (Graduate Studies)

Terms offered: Winter 2026

[View offerings for Winter 2026 in Visual Schedule Builder.](#)

## Description

Building on recent developments and expansion in the mammalian cell culture for production of complex biologics such as viral vaccines and viral vectors, the following topics will be covered: Principles of immunology and industrial virology; Cell physiology for vaccine production; Cell lines for vaccine production; Upstream process development and process intensification strategies; Purification and downstream processing of viral vaccines; Analytical and potency assays; Formulations and delivery of vaccines; Basics of clinical trials and regulatory principles; Immunization policies. Case studies on bioprocessing/manufacturing licensed vaccines.

- Prerequisite: Permission of Instructor.

Most students use Visual Schedule Builder (VSB) to organize their schedules. VSB helps you plan class schedules, travel time, and more.

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