

# PHARMACEUTICAL MANUFACTURING TECHNOLOGY

Associate in Applied Science Degree | Career Program

Department of Chemistry, Earth Sciences, and Environmental Sciences

## Program Description

The Pharmaceutical Manufacturing Technology (PMT) program is a specialized chemical technology program designed to meet the needs of the pharmaceutical and related industries (cosmetics, food, plastics, custom chemicals, research centers, pilot plants etc.). The PMT curriculum prepares students to work in manufacturing, research and development and quality control and quality assurance departments of pharmaceutical, cosmetics and related chemical industries. Today's industrial environment requires technicians well-trained in state-of-the-art instruments, computer methods, safety protocols and federal and state government regulations.

The PMT program provides a solid foundation in liberal arts and sciences combined with specialized training in the field. Students also have the option of transferring to science and engineering bachelor's programs or to pharmacy schools to continue their education. The program articulates with SUNY Empire State College. Visit the Transfer Planning website for details.

**Please note that this program is not currently accepting new students.**

## Learning Outcomes

Upon successful completion of the Pharmaceutical Manufacturing Technology program requirements, students will be able to:

1. Demonstrate the necessary knowledge, teamwork ability and laboratory skills required to begin a career as an entry-level technician in pharmaceutical and related research, institutional, and commercial enterprises.
2. Demonstrate basic laboratory safety skills and knowledge as pertains to chemistry and pharmaceutical laboratory environments.
3. Communicate effectively through oral, written, and technological means to support good laboratory operation and outcomes.
4. Demonstrate working knowledge of modern analytical instrumentation used in the pharmaceutical industry and related industries such as GC-MS, HPLC, FT-IR, TOC analyzer, UV/Vis and Fluorimetric Spectrophotometers.

## PHARMACEUTICAL MANUFACTURING TECHNOLOGY CURRICULUM (PATHWAYS)

60 Credits required for AAS Degree

Curriculum Coordinator: Dr. Thomas Brennan

### Required Core

#### A. English Composition

- ENG 110 English Composition I: Fundamentals of Writing and Rhetoric *OR* ENG 111 English Composition I: Writing and Rhetoric (3 Credits)

#### C. Life and Physical Sciences

- CHM 11 General College Chemistry I (4 Credits)

### Flexible Core

#### A. World Cultures and Global Issues

- HIS 10 History of the Modern World *OR* HIS 11 Introduction to the Modern World (3 Credits)

#### D. Individual and Society

- COMM 11 Fundamentals of Interpersonal Communication (3 Credits)

#### E. Scientific World

- CHM 12 General College Chemistry II (4 Credits)

#### Additional Flexible Core Requirement – Scientific World

- BIO 11<sup>1</sup> General Biology I (4 Credits)

### SUBTOTAL 21

### Major Requirements

- ART 10<sup>2</sup> Art Survey (1 Credit)
- BIO 12<sup>1</sup> General Biology II (4 Credits)
- CHM 27 Principles of Laboratory Safety (2 Credits)
- CHM 31 Organic Chemistry I (5 Credits)
- CHM 32 Organic Chemistry II (5 Credits)
- CHM 37 Quantitative Instrumental Analysis (4 Credits)
- CHM 38 Computer Applications in Chemistry (2 Credits)
- CHM 39 Foundations of Pharmaceutical Process Technology (3 Credits)
- CHM 40 Pharmaceutical and Chemical Technology (3 Credits)
- ENG 23 Scientific and Technical Writing (3 Credits)

- Free Electives to complete 60 credit requirement (1-2 Credits)
- MTH 13<sup>3</sup> Trigonometry and College Algebra (3 Credits)
- MTH 14<sup>3</sup> Algebra and Introduction to Calculus (3 Credits)
- PMT 41 Pharmaceutical Chemistry (3 Credits)
- PMT 42 Pharmaceutical Product Preparation (3 Credits)
- PMT 43 Pharmaceutical Laws and Regulations (2 Credits)
- Restricted Electives<sup>4</sup> (5-6 Credits)

**SUBTOTAL 39**

<sup>1</sup> Students can substitute PHY 11 for BIO 12. Students who wish to substitute both PHY 11 and PHY 12 for BIO 11 and BIO 12 need department approval.

<sup>2</sup> Students can substitute MUS 10, or any PEA one-credit course, or CPR 10, or WFA 10 for ART 10.

<sup>3</sup> Students intending to transfer to four-year programs should substitute MTH 30 and MTH 31 and 32 for MTH 13 and MTH 14.

<sup>4</sup> Students may choose any combination of restricted electives CHM 39, CHM 40, PMT 41, PMT 42 and PMT 43 to meet the program credits requirement.

