

# Moorpark College Biotechnology Program 1998/1999

## Associate in Science Degree and/or Certificate of Achievement

### EXISTING COURSES

Course Description	Name	Units	Hours of Lecture	Hours of Laboratory
BIOL 2A	General Biology I	4	3	3
CHEM 12*	Introductory Chemistry I	5	4	3
CHEM 13*	Introductory Chemistry II	5	4	3
PHYS 1	Human Physiology	5	4	3
MICRO 1	Principles of Microbiology	5	3	6
MATH 15	Introductory Statistics	5	5	--
CIS 28	Microsoft Office Professional	3	2	3
ENGL 11	Report and Technical Writing	3	3	--

\*Alternate courses are CHEM 1A - General Chemistry I and CHEM 1B General Chemistry II.

### BIOTECHNOLOGY COURSES (New in Fall 1998)

Each of the new BIOTECH 2 modular courses are 1 unit classes with four hours of lecture and 12 hours of laboratory each week for two weeks.

Modular courses are scheduled sequentially in a semester and students are expected to complete all eight modules in one semester. Note that each of the BIOTECH 2 modules has a prerequisite of the preceding module, except for BIOTECH 2A, with a prerequisite of BIOTECH 1.

Recommended courses: PH 1/1L Descriptive Physics/Laboratory - 3 hours lecture, 3 hours laboratory.

Total required units in the major: 48 (or 50 if CHEM 1A & 1B replace CHEM 12 & 13)

Students completing major courses would receive a **Certificate of Achievement in Biotechnology**.

Students completing major courses plus general education courses would receive an **Associate in Science Degree in Biotechnology**.

Prerequisite	Course Description	Name	Units	Hours of Lecture/ weeks in class	Hours of Laboratory/ weeks in class
CHEM 13 or CHEM 1B, BIOL 2A, MATH 15	BIOTECH 1	Introduction to Biotechnology	5	3/16	6/16
BIOTECH 1 and MICRO 1	BIOTECH 2A	Plant Design	1	4/2	12/2
BIOTECH 2A	BIOTECH 2B	Process Support	1	4/2	12/2
BIOTECH 2B	BIOTECH 2C	Manufacturing Technology: Cell Culture, Microbial Fermentation	1	4/2	12/2
BIOTECH 2C	BIOTECH 2D	Manufacturing Technology: Recovery, Purification	1	4/2	12/2
BIOTECH 2D	BIOTECH 2E	Manufacturing Technology: Formulation, Fill, and Packaging	1	4/2	12/2
BIOTECH 2E	BIOTECH 2F	Quality Control: Applied Analytical Methodologies	1	4/2	12/2
BIOTECH 2F	BIOTECH 2G	Environmental Control	1	4/2	12/2
BIOTECH 2G	BIOTECH 2H	Validation	1	4/2	12/2

Suggested Course Sequence:

<b>First Year</b>			
<b>First Semester</b>	<b>Units</b>	<b>Second Semester</b>	<b>Units</b>
CHEM 12	5	CHEM 13	5
CIS 28	3	BIOL 2A	4
MATH 15	5	ENGL 11	3
Total units	13	Total units	12
<b>Second Year</b>			
<b>Third Semester</b>	<b>Units</b>	<b>Fourth Semester</b>	<b>Units</b>
MICRO 1	5	BIOTECH 2A	1
BIOTECH 1	5	BIOTECH 2B	1
Total Units	10	BIOTECH 2C	1
		BIOTECH 2D	1
		BIOTECH 2E	1
		BIOTECH 2F	1
		BIOTECH 2G	1
		BIOTECH 2H	1
		PHYS 1	5
		Total Units	13