

# IUPUI-Purdue School of Science

## Biotechnology –Bachelor of Science

### AREA I COMMUNICATION – 9 credit hours

#### A. English Composition – 6 credit hours

(Grade of a C or better in each course is required.)

ENG-W131 (ENG-W140) English Composition I 3 cr. \_\_\_\_\_

Second composition course

TCM 32000 Written Communication in Sci and Ind 3 cr. \_\_\_\_\_

#### B. Speech Communication – 3 credit hours

COMM-R110 Speech Communication 3 cr. \_\_\_\_\_

### AREA II FOREIGN LANGUAGE

No foreign language proficiency is required for the B.S. degree. However, knowledge of foreign language is strongly recommended for any student planning to attend graduate school.

### AREA III GENERAL EDUCATION REQUIREMENTS

#### A. Humanities, Social Sciences, &

Comparative World Cultures – 12 credit hours

HIST-H114 Western Civilization II 3 cr. \_\_\_\_\_

or HIST-H109 Perspectives on the World 1800 to Present

One course each from List H, S and C.

See School of Science Course List.

List H: \_\_\_\_\_ 3 cr. \_\_\_\_\_

List S: \_\_\_\_\_ 3 cr. \_\_\_\_\_

List C: \_\_\_\_\_ 3 cr. \_\_\_\_\_

#### B. Junior/Senior Integrator – Requirement currently suspended.

#### C. Physical and Biological Sciences –18-23 credit hours

CHEM-C105 Principles of Chemistry I 3 cr. \_\_\_\_\_

CHEM-C125 Experimental Chemistry I 2 cr. \_\_\_\_\_

CHEM-C106 Principles of Chemistry II 3 cr. \_\_\_\_\_

CHEM-C126 Experimental Chemistry II 2 cr. \_\_\_\_\_

CHEM-C341 Organic Chemistry Lecture I 3 cr. \_\_\_\_\_

CHEM-C343 Organic Chemistry Laboratory I 2 cr. \_\_\_\_\_

(strongly recommended; not required for B.S.)

CHEM-C342 Organic Chemistry Lecture II 3 cr. \_\_\_\_\_

(strongly recommended; not required for B.S.)

PHYS-P201 or PHYS 15200 General Physics I 5 cr. \_\_\_\_\_

Consult a departmental academic advisor concerning the acceptability of other courses.

#### D. Math and Computer Science

1. MATH 23100/MATH 23200, MATH 22100/MATH 22200

or MATH 16500/MATH 16600 6 cr. \_\_\_\_\_

2. STAT 30100 Elementary Statistical Methods 3 cr. \_\_\_\_\_

3. One course in computer science programming 3 cr. \_\_\_\_\_

CSCI-N207 is recommended.

(CSCI-N241 and CSCI-N299 do not count in this AREA.)

### AREA IV MAJOR COURSES

Students must have a grade of C- (1.70) or higher for each course listed in AREA IV. Students must have a 2.00 Grade Point Average in all Major Courses.

\*Course no longer offered at IUPUI

\*\* Ivy Tech Course Equivalent/Recommended

### Required Courses (45 credit hours)

\*BITN 20000 Principles of Biotechnology/

\*\*BIOT 101 Intro to Biotechnology 4 cr. \_\_\_\_\_

\*BITN 21000 Business and Regulatory/

\*\*BIOT 103 Safety & Regulatory Compliance for

Biotechnology 3 cr. \_\_\_\_\_

\*BITN 22000 Cell Culture and Fermentation/

\*\*BIOT 201 Cell Culture and Cellular Processes 4 cr. \_\_\_\_\_

\*BITN 23000 Analytical Methods in Biotechnology/

\*\*BIOT 211 Analytic Methods in Biotechnology I 3 cr. \_\_\_\_\_

\*BITN 24000 Protein Purification and Formulation/

\*\*BIOT 231 Protein Analysis and Purification 4 cr. \_\_\_\_\_

\*BITN 25000 Biotechnology Internship/

\*\*BIOT 280 Co-op Internship 3 cr. \_\_\_\_\_

BIOL-K101 Concepts of Biology I 5 cr. \_\_\_\_\_

(pre-req: CHEM-C101 or one year of high school chemistry)

BIOL-K322 Genetics & Molecular Biology 3 cr. \_\_\_\_\_

BIOL-K323 Genetics & Molecular Biology Lab 2 cr. \_\_\_\_\_

BIOL-K324 Cell Biology 3 cr. \_\_\_\_\_

BIOL-K356 Microbiology 3 cr. \_\_\_\_\_

BIOL-K357 Microbiology Laboratory 2 cr. \_\_\_\_\_

BIOL-K483 Biological Chemistry or

CHEM-C484 Biomolecules and Catabolism 3 cr. \_\_\_\_\_

(pre-req: CHEM-C 342)

BIOL-K484 Cellular Biochemistry 3 cr. \_\_\_\_\_

### AREA V ELECTIVES

#### A. Electives

1. No grade below a C– will be accepted toward the degree program in any biology, biotechnology and chemistry course.

2. To receive credit for a laboratory for which there is an accompanying pre- or co-requisite lecture, the lecture must be completed with a minimum grade of C–.

3. See School of Science Bulletin for additional requirements.

### GENERAL INFORMATION

A. A minimum of 124 credit hours must be completed for graduation. This total must include residence of at least two semesters at IUPUI and completion of at least 32 credit hours at the 300-level or above taken at IUPUI.

B. No more than 64 credit hours earned in accredited junior colleges can be applied toward a degree.

C. Courses taken outside the Schools of Science and Liberal Arts must receive departmental approval. No more than 6 credit hours of athletic, studio, clinical, performing arts course work will count towards the degree. See Departmental Advisor.

D. Independent study (correspondence) courses may be taken for general electives up to a maximum of 12 credit hours with approval from the School of Science.

E. Courses taken on the pass/fail option will only count as general electives and not towards any degree requirements of the School or Program.

F. The following courses do not count toward any degree program in the School of Science. (**NOTE: This is not a complete list.** The School and department reserve the right to exclude course credit when it is deemed as overlapping with other earned credit or it is determined to be remedial in nature: all agriculture courses, BIOL-N120, BUS-K201, BUS-K204, all COAS courses, CSCI-N1## level courses, CPT 10600, CIT 10600, EDUC-U205, EDUC-X100, EDUC-X150, EDUC-X151, EDUC-X152, ENG-W001, ENG-W130, MATH-M010, MATH-M020, MATH-M001, MATH 00100, MATH 00200, MATH 11000, MATH 11100, MATH 12300, MATH 13000, MATH 13100, MATH 13600, PHYS 01000, UCOL-U112, all remedial or developmental courses.