1. GENERAL EDUCATION

**ARTS (6 cr)**

- **ENGL 015 or 030; Rhetoric & Comp** 3
- **ENGL 202C: Technical Writing** 3
- **CAS 100 A, B, or C: Effective Speech** 3

**HUMANITIES (6 cr)**

- **ENGL 004, 005; ENGL: 007; 010, 011, 012**
- **SPAN 101, 102; SPAN: 103, 104**
- **FREN 101, 102; FREN: 103, 104**
- **GERM 101, 102; GERM: 103, 104**
- **ITAL 101, 102; ITAL: 103, 104**
- **ITAL 101, 102; ITAL: 103, 104**

**SOCIAL & BEHAVIORAL SCIENCES (6 cr)**

- **HIST: 100, 101, 102, 103; HIST: 104, 105, 106**
- **PSYCH 101, 102; PSYCH: 103, 104**
- **SOC 101, 102; SOC: 103, 104**

Students may petition to substitute 3 credits from one of the above knowledge domains for 3 credits in another domain, thereby substituting 9-6-3 credit pattern for the default 6-6-6 pattern in these general education courses.

**COMMUNICATIONS (GWS) (9 cr)**

- **ENGL 015 or 030; Rhetoric & Comp** 3
- **ENGL 202C: Technical Writing** 3
- **CAS 100 A, B, or C: Effective Speech** 3

**HEALTH & PHYSICAL ACTIVITIES (3 cr)**

- **(GHA or GHS or GPE)**
- **(GHA or GHS or GPE)**
- **(GHA or GHS or GPE)**

**WRITING ACROSS THE CURRICULUM (3 cr)**

- **3 cr**

**US/INTERNATIONAL CULTURES (6 cr)**

- **US**
- **IL**

2. REQUIREMENTS FOR THE MAJOR

**CHEMISTRY (16 cr)**

- **CHEM 110 (H): Chemical Principles I - "C" required** 3
- **CHEM 111: Experimental Chemistry I - "C" required** 1
- **CHEM 112 (H): Chemical Principles II - "C" required** 3
- **CHEM 113: Experimental Chemistry II** 1
- **CHEM 210 (H): Organic Chemistry I** 3
- **CHEM 212 (H): Organic Chemistry II** 3
- **CHEM 213: Organic Chemistry Lab** 2

**PHYSICAL CHEMISTRY SEQUENCE (3 or 6 crs)**

- **CHEM 450: Physical Chemistry Thermoenergetics** 3
- **CHEM 452: Physical Chemistry Quantum Chemistry** 3

or

**BMB 428: Physical Chem w/Biological Applications** 3

**BIOCHEMISTRY & MOLECULAR BIOLOGY (28 cr)**

- **BMB 251: Molecular & Cell Biology** 3
- **BMB 252: Molecular & Cell Biology II** 3
- **BMB 400: Molc. Biol. of the Gene** 2
- **BMB 401: General Biochemistry** 3
- **BMB 402: General Biochemistry** 3
- **BMB 430: Developmental Biology** 3
- **BMB 442: Lab Prot., Nuc. Acid, Molec Clon** 3
- **BMB 443W: Lab Protein Purif./Enzymo** 3
- **BMB 445W: Lab Molecular Genetics** 2
- **BMB 460: Cell Growth & Differentiation** 3

**MICROBIOLOGY (8 cr)**

- **MICRB 201: Intro. Microbiology** 3
- **MICRB 202: Intro. Microbiology Lab** 2
- **MICRB 410: Principal of Immunology** 3

**MATHEMATICS (8 cr)**

- **MATH 140: Calculus I - "C" required** 4
- **MATH 141: Calculus II** 4

**BIOLOGY (3 cr)**

- **BIOL 322: Genetic Analysis** 3

**PHYSICS SEQUENCE (8 or 12 crs)**

- **PHYS 211: Gen. Physics: Mechanics** 4
- **PHYS 212: Gen Phys: Elec./Magnetism** 4
- **PHYS 213: Gen Phys: Fluids/Thermal** 2
- **PHYS 214: Gen Phys: Wave/Motion/Quantum** 2
- **PHYS 250: Intro Physics I** 4
- **PHYS 251: Intro Physics II** 4

**FIRST YEAR SEMINAR (1 cr)**

- **PSU 016: First Year Seminar** 1

3. ELECTIVES IN THE MAJOR

LIST A select 5-6 credits from any 400 level BMB/MICRB course with a maximum of 4-credits in 496:

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Total

4. MATHEMATICAL SCIENCE

**LIST B select 2-3 credits from:**

- **CHEM: 210, 212, 213, 410, 411, 412, 413, 414**
- **CHEM: 212, 212, 213, 410, 411, 412, 413, 414**
- **CHEM: 212, 212, 213, 410, 411, 412, 413, 414**

**LIST C FREE ELECTIVES**

Select 4-13 credits from Department List

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Total

5. ELECTIVES IN THE MAJOR

**LIST C FREE ELECTIVES** — With the EXCEPTION of the courses listed below, ALL courses appearing in the University Bulletin are acceptable as elective courses: 6 credits of ROTC may be applied toward graduation requirements.

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** listelectives**

6. ENTRANCE TO MAJOR

- **2.0 GPA is required**
- **CHEM: 100 H: Chemical Principles** 3
- **CHEM: 111: Experimental Chemistry I** 1
- **CHEM: 112 H: Chemical Principles II** 3
- **MATH: 140: Calculus I** 4

A student enrolled in this major must receive a grade "C" or better in the following courses specified by Senate Policy 82-44

7. TO GRADUATE

A "C" grade or better is required in 2 of the following 3 courses. All 3 courses required.

- **MICRB: 201: Intro. Microbiology** 3
- **MICRB: 251: Molecular & Cell Biology** 3
- **MICRB: 252: Molecular & Cell Biology** 3

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Total ≥ 9

Earn "C" or higher in 9 credits of any 400-level MICRB/BMB courses except

**BMB 443W, 444, 445W, 446, BMB/MICRB 442, 496, MICRB 421W, 422, 447**

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Total ≥ 9

8. REMEDIAL & REPEATS

Courses that do not meet degree requirements

9. SENATE POLICY 83-80

Source/Time Credit acquisition:

- 36 of last 60 credits at PSU?
- 60 credits in last 5 years?

10. GPA/CREDITS

- Overall GPA must be ≥ 2.0
- Total credits earned (less repeats and remedial; must have at least 125 credits to graduate)

11. University Activities/Awards

12. Program Exceptions