**Requirements for Teachers of Life Science, Grades 9-12** (Updated February 2023)

*Biology Major, Secondary Education Minor*

**Requirements for MN licensure in Life Science 9-12** (32 credits)

*A BA degree in any subject area is required to apply for this license. (This is not a major. See below for additional courses required for the Biology major.)*

**\_\_\_\_\_\_\_** BIOL 101 Foundations of Biology (4 credits) **[NW, T1]**

\_\_\_\_\_\_\_ BIOL 201 Intermediate Cell Biology and Genetics (4 credits)

\_\_\_\_\_\_\_ BIOL 202 Evolution in Action (4 credits)

\_\_\_\_\_\_\_ BIOL 305 Invertebrate Zoology (spring) **OR** BIOL 307 Biology of Microorganisms (fall) (4 credits)

\_\_\_\_\_\_\_ BIOL 316 Genetics (4 credits)

\_\_\_\_\_\_\_ BIOL 323 Animal Physiology (spring 2019, fall odd years thereafter) **OR** BIOL 327 Plant Physiology (fall, even

 years) (4 credits)

\_\_\_\_\_\_\_ BIOL 334 General Ecology (fall) **OR** BIOL 336 Behavioral Ecology (spring) **OR** BIOL 337 Aquatic Ecology (fall) (4 credits)

**The following additional courses are required for a Biology major:** (15-16 credits)

\_\_\_\_\_\_\_ CHEM 125 Introduction to Chemical Structure and Properties (4 credits)

\_\_\_\_\_\_\_ CHEM 201 Purification and Separation Lab 1 **[NW]** (0-1 credit)

\_\_\_\_\_\_\_ MATH 124 Probability and Statistics (4 credits) **[AS, QR, J1, T1]**

\_\_\_\_\_\_\_ BIOL 3XX Additional Upper Level Biology Course

\_\_\_\_\_\_ Plus **one additional course** from the following list:

MATH 118, 119 or 120 **[ALL - AS, M1]**

CHEM 250/202, CHEM 251/203 or CHEM 255/205

PHYS 105**[NW]** or 191**[NW M1]**

CSCI 140, 150**[AS QR, T1]** or 239

ENVR 175 **[NW, QR]**

Completion of a **Biology capstone** through any of the following options (done during senior year):

1. An Honors Thesis (BIOL 398), Biological Research (BIOL 372), or summer research (at CSB/SJU or elsewhere) that satisfied institutional capstone criteria. (This option requires a formal presentation on campus or at some other venue.)
2. Completion of hands-on research in the context of the 2-credit Senior Capstone in Biology course (BIOL 380).
3. Completion of a research proposal or review paper in the context of the Senior Capstone in Biology.

**Foundational Education Courses Required for Licensure** (42-43 credits)

\_\_\_\_\_\_\_ EDUC 111 Introduction to Teaching and learning in a Diverse World **[CI]** (4 credits)

\_\_\_\_\_\_\_ EDUC 203 Human Growth and Development (4 credits) **[SW, J1]** Pre-req: EDUC 111

\_\_\_\_\_ EDUC 213 Clinical Experience 5-8/K-12 Diversity Immersion (1 or 2 credits)

* Pre-req: EDUC 111 & First-Year Teacher Shadow

\_\_\_\_\_\_\_ EDUC 305 Human Exceptionalities (1 credit) Pre-req: EDUC 203

\_\_\_\_\_\_\_ EDUC 352 Teaching Reading in the Middle/Secondary Classroom (2 credits) Pre-req: EDUC 379A

\_\_\_\_\_\_\_ EDUC 355 Science Pedagogy 9-12 **[EX]** (4 credits) **Fall Only**

* Pre-req: Acceptance to the Education Program

\_\_\_\_\_\_\_ EDUC 359 Issues in Education (1) (Take semester prior to student teaching)

* Pre-req: unconditional acceptance into the Education Program

\_\_\_\_\_\_\_ EDUC 379A Educational Psychology (4 credits) **[SW, QR, TF]** Pre-req: EDUC 111, taken with Pedagogy course

\_\_\_\_\_\_\_ EDUC 390 Ethics in Human Relations **[CS, BN]** (4 credits)

* Pre-req: Acceptance into the Education Program

\_\_\_\_\_\_\_\_ Passing Scores on the MN Teacher Licensure exams in content and pedagogy.

*Capstone Experience* Pre-req: successful completion of all requirements

\_\_\_\_\_\_\_ EDUC 365 Student Teaching (16 credits)