ASSESSMENT FOR SECONDARY EDUCATION

The **Program Effectiveness Objectives** of the Secondary Biology Program are to prepare teachers that meet the criteria of effective teachers as outlined in the Illinois Professional Teaching Standards and National Science Teachers Association (NSTA) 'Science Teacher Preparation Standards'. Specifically, our objectives are to prepare science teachers who are:

1. Proficient in content knowledge of Biology and allied science disciplines.
2. Cognizant of the roles of education, science and technology in society and the skill to use current and relevant issues to teach science.
3. Prepared to address diverse student learning styles especially in the urban classroom as well as problem solve and manage effectively high school classroom.
4. Able to create and deliver effective instructional plans that feature nature of science and inquiry methods that are data-based and promote critical thinking and problem-solving skills.
5. Prepared to incorporate technology, math and statistics into lessons regularly.
6. Able to apply effective and varied assessment tools in order to gauge student learning and develop their teaching expertise.
7. Poised to become active members of the science education community.
8. Prepared to conduct biology experiments safely and teach safe laboratory practices to students.

A secondary goal of the program is to provide service to the community through outreach efforts to elementary, middle, and high schools, informal science providers, industry and government. We are currently developing a specific outcome aligned to this goal at a Departmental level.

LEARNING OUTCOMES FOR BIOLOGY SECONDARY EDUCATION MAJORS

As demonstrated from the assessment instruments listed below, the end of the program, each Secondary Biology Student will be able to:

1. Explain current concepts and practices of Biology and allied disciplines as defined by the National Science Education Standards. Instruments 1 and 2 (Licensure exam and Biology content diagnostic test) are both taken before student teaching, usually the same semester as the 'Methods' (BIOL 4630) course.
2. Develop Lessons that engage students explicitly and implicitly in the nature and practices of science. Part of Planning Assessment 3. Nature of Science assignment completed during Methods course and use of NOS and science practices during Student Teaching are assessed as part of instruments 3 and 4.
3. Develop Lessons that include key components of scientific inquiry and engage students in inquiry activities. The use of inquiry is assessed through multiple instruments: 3, 4, 5, 6, 8. Understanding and use of inquiry begins during Methods course (instruments 8, 3) is implemented more fully during Student Teaching (4, 5) and ends with examples used within professional portfolio at end of student teaching (6).
4. Make Linkages between their science disciplines and real-world applications to local communities and society in general. A Science Technology and Society module is prepared during Methods course (part of Instrument 3) and linkages are evaluated more broadly during Student teaching (Instrument 4)
5. Create a safe, positive, and productive classroom environment to maximize student learning. A safety module for Biology classrooms is prepared during the Methods course and implementation is assessed during Student Teaching (Instrument 7).
6. Integrate their knowledge of content and pedagogy to plan lessons for diverse learners.

Evaluated as part of Instruments 3 and 6

7. Evaluate student conceptions and learning through the use of varied assessments and use assessment to guide instruction. Instrument 5, the Impact on Student Learning project, is completed during student teaching.

These outcomes are diagrammed in our **Curriculum Map for Biology Secondary Education Majors** (K = Knowledge/comprehension, A = Application/Analysis, S = Synthesis/Evaluation):

Learning Outcome	MATH 1200/10 PHYS 1140 GEOG 1300	CHEM 1550/60 CHEM 2500/10 PHYS 1510/20	BIOL 1710 BIOL 3040/50 BOT 2050 ZOOL 2040	BIOL 2550 BIOL 3055 PSLY 2040	PSYC 2020/40 SPED 4301	SPED 4303 ED 4500 READ 4100 CAS 2630	BIOL 4060	BIOL 1092	BIOL 4/5715	BIOL 4/5710 BIOL 4/5725	BIOL 4750
1.	K	K/A	K/A	K/A			A/S	K/A/S	S	A/S	S
2.		K	K	K			A/S		S	A/S	S
3.		K	K	K			A/S		S	A/S	S
4.		K	K	K			A/S	K/A/S	S	S	S
5.		K	K		K	A/S	A/S		S	S	S
6.					K	A	A/S		S	S	S
7.					K	A	A/S		S	A/S	S

Our assessment methods and instruments are designed to satisfy assessment requirements for both the Program Effectiveness Objectives and the Student Learning Outcomes, as shown below:

Program Objectives	**Student Learning Outcomes**	**Assessment Instruments**	**Candidate Criteria**	**Program Effectiveness Criteria (A= Acceptable T= Target)**
1, 3, 5, 6	1	1: State Licensure Exam	A: Overall score of 240 $\leq x$ (passing score out of 300). T: Overall score and majority of suborder scores of 240 $\leq x$	A: 80% of candidates pass with score of 240/300 or better, overall. T: 100% of candidates pass with score of 240/300 or better, overall.
1	1	2: Biology content evaluation	A: Attain score of 75% or greater on Secondary Science diagnostic tests given during Methods or 1092 courses. T: Attain score of 85% or greater on Secondary Science diagnostic tests.	A: 80% of candidates attain 75% or better score on tests. T: 100% of candidates attain 75% or better score on tests.

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2, 4, 5, 8	2,3,4	3: Planning Thematic unit during Methods course (included in Portfolio)	A: 'B' grade (80%) on Thematic Unit. T: 'A' grade (90%) on Thematic Unit.	A: 80% of students earn 80% or greater on Thematic Unit. T: 100 % of students earn 80% or better on Thematic Unit.
2, 3, 4, 5, 8	1, 2, 3, 4, 5, 6, 7	4: Implementation/ Clinical Practice during Student Teaching	A: B overall grade on Student Teacher Evaluation Report. T: A overall grade on Student Teacher Evaluation Report.	Acceptable: 100 % of Teacher candidates earn 'B' or better grade on Final Student Teacher Evaluation Report. Target: same as 'Acceptable'.
2, 3, 4, 6, 8	1, 2, 3, 4, 5, 6, 7	5: Impact on Student Learning / Environment project completed during Student Teaching (included in Portfolio)	A: Score of 3-5 pts on 'Evidence of Student Learning' Assessment 5 Rubric – sections 1 and 6. T: Score of 6-8 pts on 'Evidence of Student Learning'. Assessment 5 Rubric – sections 1 and 6.	Target: 100% of Teacher Candidates earn Acceptable or Target scores on 'Evidence of Student Learning'. Assessment' 5- sections 1 and 6.
1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6, 7	6: Professional Portfolio & Dispositions	Portfolio: A: 'B' (80%) grade overall on Portfolio Rubric. T: 'A' (90%) grade overall on Portfolio Rubric. Disposition: A: 'Acceptable' overall on Disposition rubric; T: 'Target' overall rating on Disposition Rubric.	A: 80% of teacher candidates earn 80% score or better on Portfolio Rubric. Target: 100% of teacher candidates earn 80% score or better on Portfolio Rubric.
8	5	7: Student Safety Module prepared during Methods course and demonstrated during Student Teaching course (NSTA required).	A: 70% $\leq x <$ 80% on Safety Rubric. T: 80% $\leq x$ on Safety Rubric.	A: 100% of students earn 70% or greater on Safety Rubric. T: 100% earn 80% or greater on Safety Rubric.
4, 5, 8	1, 2, 3, 4, 7	8: Inquiry Investigation project completed during Methods course (NSTA required)	A: 70% $\leq x <$ 79% on Investigation Rubric. T: 80% $\leq x$ on Investigation Rubric.	A: 100% of students earn 70% or better on Investigation Rubric. Target: 100% earn 80% or better on Investigation Rubric.
Additional		Alumni Survey	Full completion of survey is sought; not part of academic assessment	Target: 100% response rate with responses that are complete, constructive and provide insights on the effectiveness of our program.
Additional		Graduation Rate	We strive for 100% graduation rates.	A: 80%. T: 90%
Additional		First Year Retention Rate	We strive for each candidate to remain at CSU.	A: 80%. T: 90%