Program Learning Outcomes

I= Introduced
R= Reinforced
M= Mastered

Program Name: Biology (B.S.)

Date: 8-20-20, rev. 9-3-24

Program Learning Outcomes Knowledge, skill, or behavior students can demonstrate upon program completion		Courses Mapped to Outcomes													
		BIOL 105/107 (or 207)	BIOL 106/108 (or 208 or 195)	BIOL 221 Hum Phys	BIOL 301 Micro	BIOL 315 Adv Ecol	BIOL 318 Math Bio	BIOL 330 Bio Phys	BIOL 340 Adv Plnt	BIOL 341 Virol	BIOL 343 Plnt Sys	BIOL 348/349 Cell Bio	BIOL 355 Dev Bio	BIOL 356/357 Genetic	BIOL 366 Mol Bio
1	Students will demonstrate knowledge across broad biological topics	I	I	R	R	R	R	R	R	R	R	R	R	R	R
2	Students will demonstrate knowledge about the cellular level of biological organization		I	R	R	R				M		M	M	M	M
3	Students will demonstrate knowledge about the molecular and genetic levels of biological organization		I		R					M		M	R	M	M
4	Students will demonstrate knowledge about the organismal level of biological organization	I		R		R		R		M					
5	Students will demonstrate knowledge about the ecological and evolutionary levels of biological organization	I				M	R	M	R	R	R				
6	Students will express confidence in their abilities to engage in scientific inquiry	I	I	R	R	R	R	R	R	R	R	R	R	R	R
7	Students will convey readiness for the next steps in their career trajectories	I	I												
8	Students will synthesize and communicate knowledge about the living world		I												

9	Students will understand and make meaningful connections across disciplinary boundaries when responding to a current issue in the biological sciences						R	R							

Program Learning Outcomes Knowledge, skill, or behavior students can demonstrate upon program completion		Courses Mapped to Outcomes										
		BIOL 370 Anim Behav	BIOL 374 Bio Insect	BIOL 380 Field Stud	BIOL 421 Evo Bio	BIOL 422 Invert Zoo	BIOL 432 Vert Zoo	BIOL 442 Anim Phys	BIOL 490 Independent Research	BIOL 495 Capstone	Biology Seminar Series	Cognate courses in CHEM, PHYS,GES
1	Students will demonstrate knowledge across broad biological topics	R	R	R	R	R	R	R	R		R	
2	Students will demonstrate knowledge about the cellular level of biological organization				R	R						
3	Students will demonstrate knowledge about the molecular and genetic levels of biological organization				M			R				
4	Students will demonstrate knowledge about the organismal level of biological organization	M		R	M	R	M	M				
5	Students will demonstrate knowledge about the ecological and evolutionary levels of biological organization	M		M	M		M	R				
6	Students will express confidence in their abilities to engage in scientific inquiry	R	R	R	R	R	R	R	M		R	
7	Students will convey readiness for the next steps in their career trajectories								R	M	R	
8	Students will synthesize and communicate knowledge about the living world								M			
9	Students will understand and make meaningful connections across disciplinary boundaries when responding to a current issue in the biological sciences										R	M

Program Learning Outcomes: Assessment Tools

Program Name: Bachelor of Science (BS) in Biology

Date: 8-20-2020, rev. 9-3-24

Program Learning Outcomes Knowledge, skill, or behavior students can demonstrate upon program completion		Measurement Tool	Timeline/Frequency of Assessment	Target	Review
1	Students will demonstrate knowledge across broad biological topics	Overall scaled scores on Major Field Test in Biology (MFT-B)	Students take MFT during their senior year. Results will be compiled from MFT website	Hope cohort will score at or above the national average as identified by ETS.	Results (scores) reviewed every three years by faculty during department meeting in fall semester
2	Students will demonstrate knowledge about the cellular level of biological organization	Cell Biology subscore on MFT-B	Students take MFT during their senior year. Results will be compiled from MFT website	Hope cohort will score at or above the national average as identified by ETS.	Results (scores) reviewed every three years by faculty during department meeting in fall semester
3	Students will demonstrate knowledge about the molecular and genetic levels of biological organization	Molecular Biology and Genetics subscore on MFT-B	Students take MFT during their senior year. Results will be compiled from MFT website	Hope cohort will score at or above the national average as identified by ETS.	Results (scores) reviewed every three years by faculty during department meeting in fall semester
4	Students will demonstrate knowledge about the organismal level of biological organization	Organismal subscore on MFT-B	Students take MFT during their senior year. Results will be compiled from MFT website	Hope cohort will score at or above the national average as identified by ETS.	Results (scores) reviewed every three years by faculty during department meeting in fall semester
5	Students will demonstrate knowledge about the ecological and evolutionary levels of biological organization	Population Biology, Evolution, and Ecology subscore on MFT-B	Students take MFT during their senior year. Results will be compiled from MFT website	Hope cohort will score at or above the national average as identified by ETS.	Results (scores) reviewed every three years by faculty during department meeting in fall semester

6	Students will express confidence in their abilities to engage in scientific inquiry	National Survey of Student Engagement (NSSE) items: a. Thinking critically and analytically b. Analyzing numerical and statistical information	Students complete NSSE survey during freshman and senior years. Results will be requested from Frost Center	Cohort average of 3.50 on 4-point scale	Results (scores) reviewed every three years by faculty during department meeting in fall semester
7	Students will convey readiness for the next steps in their career trajectories	Biology Department graduate survey items: a. "I am well prepared for a future in biology." b. "I received good advice about careers from at least one faculty member." c. "I received help from at least one faculty member with employment or graduate/professional school information/applications."	Students complete biology department graduate survey during senior year. Results will be compiled from Qualtrics	Cohort average of 3.25 on 4-point scale	Results (scores) reviewed every three years by faculty during department meeting in fall semester
8	Students will synthesize and communicate knowledge about the living world	Participation in dissemination events such as CURCA, public talks, publications, conferences/professional meetings, curriculum development	Departmental faculty complete FAR annually. Student participation in dissemination will be compiled from these FAR reports	75% of cohort will participate in at least one dissemination activity	Annual review by faculty during department meeting in fall semester
9	Students understand and make meaningful connections across disciplinary boundaries when responding to a current issue in the biological sciences	Connections to Disciplines component of AACU Integrative Learning VALUE Rubric	Students complete a common writing assignment (departmentally developed) during senior year in their respective upper-level biology course (fall or spring semester, not both)	Cohort average of 3.25 on 4-point scale	Annual review by faculty during department meeting in fall semester