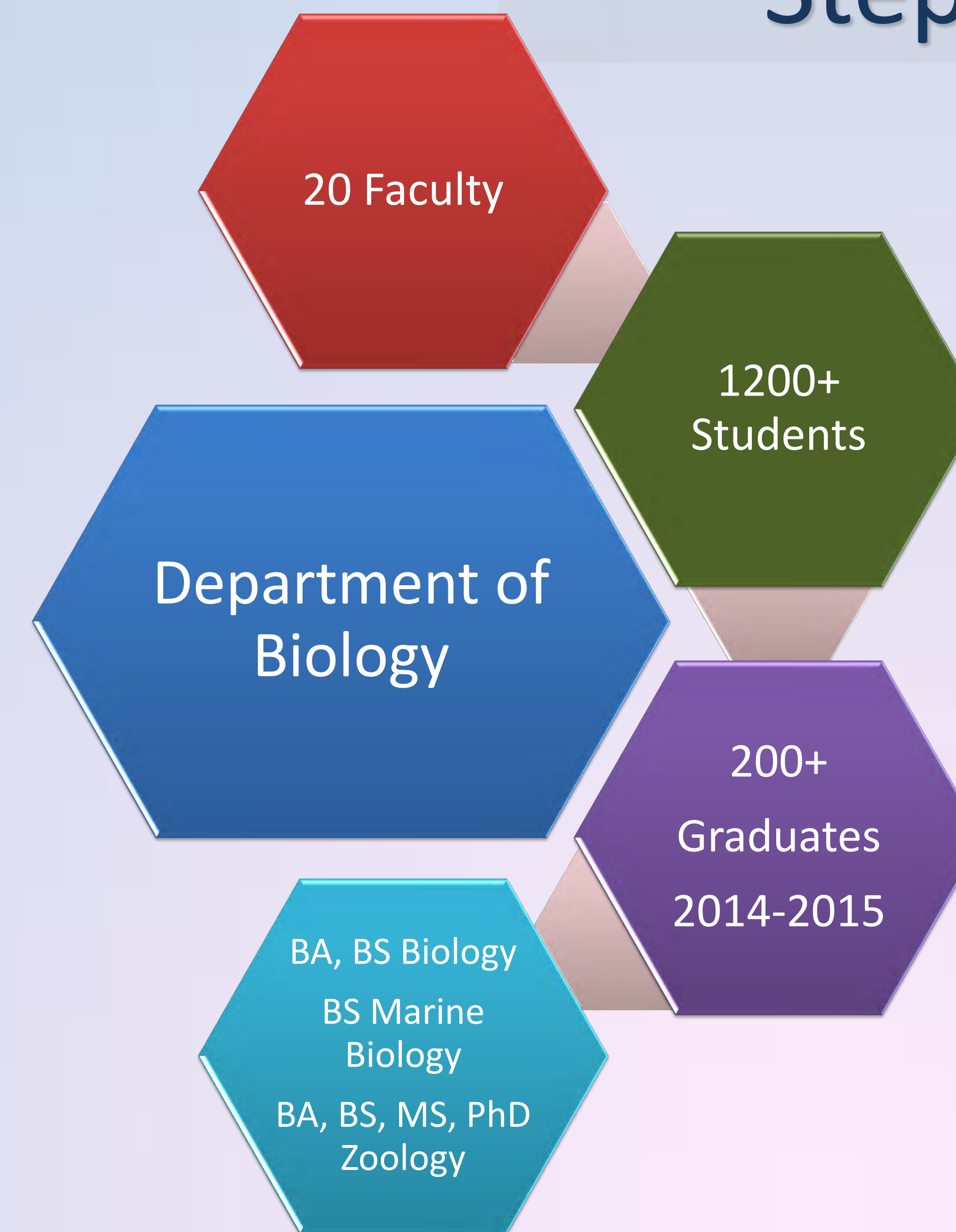


# Collaborative Curricular Improvement Guided by Assessment

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## Introduction

The faculty of the Department of Biology worked closely over the past few years to implement program-level assessment for all programs. In doing so, we identified areas for improvement in the undergraduate Biology degrees. Together, the faculty have been gradually outlining new curricula that better align with their student learning outcomes, provide appropriate focus in the upper-division and aid in assessment of all program-level Student Learning Outcomes.



## BA and BS Biology Curriculum Map (Core Courses)

| Course Number | 1 | 2 | 3 | 4 | 5 | 6 (OC) | 6 (W) |
|---------------|---|---|---|---|---|--------|-------|
| BIOL 171      | I | I |   | I | I |        |       |
| BIOL 171L     |   | I | I | I | I |        | I     |
| BIOL 172      | I | I |   | I | I |        |       |
| BIOL 172L     | I | I | I |   | I | I      | I     |
| BIOL 265      | R | R | R |   |   |        |       |
| BIOL 265L     | R | R | R | R | R | R      | R     |
| BIOL 275      | R | R | R |   |   |        |       |
| BIOL 275L     |   | R | R | R | R |        | R     |
| BIOL 375      | R | R |   |   |   |        |       |
| BIOL 375L     |   | R |   |   | R | R      | R     |

**Key:** I – Introduce R- Reinforce M – Mastery A - Assess

## Student Learning Outcomes (SLOs)

- SLO1** Student will be able to explain biological processes from molecules to ecosystems in an evolutionary context, including being able to use examples from Hawai'i.
- SLO2** Student will be able to demonstrate scientific literacy by critically evaluating scientific evidence, identifying gaps in knowledge, and applying strong evidence-based biological arguments to real-world problems.
- SLO3** Student will be able to apply the scientific method to generate new hypotheses, formulate experimental approaches and outline potential outcomes, applying appropriate logical and quantitative methods.
- SLO4** Student will demonstrate inquisitiveness regarding, and respect for, the biological world.
- SLO5** Student will work individually and in teams in an ethical manner, and demonstrate respect for diversity of viewpoints.
- SLO6** Student will in oral and written forms, be able to communicate biological information clearly and professionally.

## Challenges Identified

- Minimal structure to upper-division coursework.
- Limited consistency between upper-division major electives for assessment purposes.
- Majority of upper-division coursework is completed outside of the department.
- Students have very different experiences.

## Successful Strategies

- Involve multiple faculty members in planning, then bring to the full faculty for a vote.
- Bring changes to the faculty in phases to ensure buy-in as curriculum modifications progress.
- Involve key stakeholders in discussions before anything is brought to the entire faculty.
- Maintain focus on the SLOs, but encourage conversation on outside factors important to the major.

Considerations

## Key Content Areas

- Evolution
- Ecology
- Cell and Molecular Biology
- Physiology
- Morphology and Biodiversity

## Modify Existing Courses

- Move content to different courses
- Combine redundant courses
- Ensure course content meets SLOs and Key Content Areas

## New Curriculum Map

- Creating a new curriculum map to include proposed additional coursework

## Incorporate Graduation Requirements

- Identify potential areas to meet foundations, diversifications, focus, etc.
- Consider the student's entire academic journey

## Next Steps

- Submit curriculum changes, along with new and modified course proposals in Fall 2016
- Identify signature assignments for upper-division courses to use for assessment.
- Finalize a comprehensive assessment plan following approval of changes

