**Program Student Learning Assessment Plan (Part A)**

**Program: Mathematics**

**Submitted by: Mathematics Department Faculty**

**Date (due February 16, 2018): February 15, 2018**

This program is offered to:

* + Traditional students only
  + AGS students only
  + Both traditional and AGS students

**List all of the program’s learning outcomes:** (regardless of whether or not they are being assessed this year)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Program Learning Outcome** | **Institutional SLO** | **Year of Last Assessment** | **Assessed This Year** | **Year of Next**  **Planned Assessment** |
| SLO 1: Math majors apply knowledge from the core components of mathematics, including calculus and analysis, algebraic structures, discrete structures, geometry, probability, and statistics. | PS | N/A | no | 2018-19 |
| SLO 2: Math majors are able to use quantifiers, write negations and equivalent statements, compose clear and exact problem descriptions, compose well-defined definitions of mathematical concepts, and compose mathematical proofs. | WC | N/A | no | 2019-20 |
| SLO 3: Math majors are able to test an argument for validity; create examples that illustrate a theorem; create counter examples; create formal proofs using direct, indirect, and induction methods. | CT | N/A | yes | 2017-18 |
|  |  |  |  |  |

Key: CT – Critical Thinking CR – Creative Thinking

PS – Problem Solving CE – Civic Engagement

WC – Written Communication OC – Oral Communication

IL – Information Literacy IT – Integrated Learning

**Describe how the program’s outcomes support the Mars Hill mission, strategic plan, departmental mission or conceptual framework.**

**These student learning outcomes require students to develop analytical and critical thinking skills, essential to a liberal arts education, while also preparing students for a career or graduate studies in the field of mathematics.**

**Institutional Learning Outcomes Assessment Map**

This map specifies the year each learning outcome will be assessed institution wide. This has been determined and approved by the University Assessment Committee (UAC).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Outcome** | **Critical Thinking** | **Creative Thinking** | **Problem Solving** | **Civic Engagement** | **Written Communication** | **Oral Communication** | **Information Literacy** | **Integrative Learning** |
| 2017-2018 | ✓ |  |  |  |  |  |  |  |
| 2018-2019 |  |  | ✓ | ✓ |  |  |  |  |
| 2019-2020 |  |  |  |  | ✓ | ✓ | ✓ |  |
| 2020-2021 |  | ✓ |  |  |  |  |  | ✓ |

**Program Learning Outcomes Assessment Map**

This map specifies the year each program learning outcome will be assessed. This is determined and approved by the department or program-level faculty.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Program SLO** | **2017-2018** | **2018-2019** | **2019-2020** | **2020-2021** |
| SLO 1: Math majors apply knowledge from the core components of mathematics, including calculus and analysis, algebraic structures, discrete structures, geometry, probability, and statistics. |  | yes |  |  |
| SLO 2: Math majors are able to use quantifiers, write negations and equivalent statements, compose clear and exact problem descriptions, compose well-defined definitions of mathematical concepts, and compose mathematical proofs. |  |  | yes |  |
| SLO 3: Math majors are able to test an argument for validity; create examples that illustrate a theorem; create counter examples; create formal proofs using direct, indirect, and induction methods. | yes |  |  |  |
| SLO 4 |  |  |  |  |
| SLO 5 |  |  |  |  |

Each year, the institution will focus on assessing our MHU Institutional Learning Outcomes. Departments will select student work samples from low-level courses (100- and 200-level courses) and from high-level courses (300- and 400-level courses). Please indicate which courses are being selected, the possible number of student work samples, and what these student products will be. (If this program is offered to both traditional and AGS students, work samples should be collected from both student populations.) These products will be assessed by the University Assessment Committee.

|  |  |  |
| --- | --- | --- |
| Courses for Traditional Students | Estimated # of direct student samples/ product(s) | Estimated # of indirect products |
| Low Level (100-200)  MTH 217 (Discrete Math) | 15 student exam papers | None |
| High Level (300-400)  MTH 450 (Senior Seminar) | 3 senior seminar papers | 3 exit interviews with graduating seniors |

|  |  |  |
| --- | --- | --- |
| Courses for AGS Students | Estimated # of direct student samples/ product(s) | Estimated # of indirect products |
| Low Level (100-200) | *Ex: 40 essays* | Ex. None at this time |
| High Level (300-400) | Ex: 36 Senior Seminar papers | Ex. 36 Exit interviews with seniors |

**Current Year Program Assessment**

**Program Learning Outcome 1:**

**Is this outcome being reexamined? Yes No**

**Assessment Activity**

|  |  |
| --- | --- |
| **Outcome Measure**  *Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard**  *Define and explain what constitutes an acceptable level of student performance (target).* |
| *Direct: Student papers will be assessed with the Critical Thinking VALUE rubric. Each course will score all papers as enrollments in these courses are less than 20.* | *At least 80% of the papers assessed will have an average score of “3” based on the approved rubric.* |

**Program Learning Outcome 2:**

**Is this outcome being reexamined? Yes No**

**Assessment Activity**

|  |  |
| --- | --- |
| **Outcome Measure**  *Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard**  *Define and explain what constitutes an acceptable level of student performance (target).* |
|  |  |

**Program Learning Outcome 3:**

**Is this outcome being reexamined? Yes No**

**Assessment Activity**

|  |  |
| --- | --- |
| **Outcome Measure**  *Explain how student learning will be measured and indicate whether it is direct or indirect.* | **Performance Standard**  *Define and explain what constitutes an acceptable level of student performance (target).* |
|  |  |

**Acknowledgement: Marymount University *Student Learning Outcomes Assessment Handbook.* Compiled by the Office of Planning and Institutional Effectiveness (April, 2015). National Institute for Learning Outcomes Assessment: Making Learning Outcomes Usable & Transparent. Guidelines for Academic Program Review: Winston-Salem State University. Rose-Hulman Institute of Technology. AAC&U VALUE outcomes: Reprinted with permission from "VALUE: Valid Assessment of Learning in Undergraduate Education."  Copyright 2017 by the Association of American Colleges and Universities.** [**http://www.aacu.org/value/index.cfm**](https://www.aacu.org/value/index.cfm)**.**