**LBHC Associate of Science Degree in Mathematics (includes the math and pre-engineering options)**

Program Learning Outcomes Curriculum Map and Plan[[1]](#footnote-0)

Note: This plan includes only the required courses, beyond the general education requirements, that are in common with the math and pre-engineering options.

Updated 2023.07.24

| Program learning outcomes: *Graduates should be able to…* | MA  216 | MA  121[[2]](#footnote-1) | MA  171 | MA 172 |
| --- | --- | --- | --- | --- |
| 1. Analyze math facts, concepts, and relationships (through written work elucidating organizational computation steps, providing an explanation of a solution where appropriate and hand drawing graphs of functions and other relations). | I | A[[3]](#footnote-2) (2022-23) | R | R |
| 1. Analyze and formulate possible solutions to math related problems that consider social, economic, political, or scientific issues~~.~~  We can identify how the students will be assessed in the footnotes below. I can show you when we meet. | I | A[[4]](#footnote-3) (2023-24) | R | R |
| 1. Communicate information using mathematical symbols, graphs and vocabulary | I | A[[5]](#footnote-4) (2024-25) | R | R |
| 1. Apply techniques used for data analysis, graphical presentation, and other computational skills | I | A[[6]](#footnote-5) (2025-26) | R | R |

1. Only courses that are a part of the main program of study requirements should be listed on the first row. Courses that are not required for only this program are excluded from the list of courses (e.g., exclude general education core requirements). I, R, and A indicate the main program of study requirements – courses in which each program learning outcome is introduced (I), reinforced (R), and formally assessed (A). There should only be one formal assessment (A) in each row and the year of assessment should be noted. Not every cell in every row needs to be filled in; however, each listed course should have at least one letter – either an I, R, or A in its column. This document was created and reviewed by Dorci, Jonah, and Amber. Faculty decided to use MA 121 for assessment because there are more students/data (MA 171 and 172 usually have only 1-2 students. [↑](#footnote-ref-0)
2. Note: We decided to use MA 121 for the assessment because there are more students (and more data) in MA 121. MA 171 and 172 typically only have 1-2 students. [↑](#footnote-ref-1)
3. Program learning outcome 1 is assessed in MA 121 (college algebra) in test #3. [↑](#footnote-ref-2)
4. Program learning outcome 2 is assessed in MA 121 (college algebra) in test #2. [↑](#footnote-ref-3)
5. Program learning outcome 3 is assessed in MA 121 (college algebra) in test #2 and test #3. [↑](#footnote-ref-4)
6. Program learning outcome 4 is assessed in MA 121 (college algebra) in test #2 and test #3. [↑](#footnote-ref-5)