**Assessment of student learning in Math (B.A.) and Math with Teaching Certification (BA).**

Demonstrate how this revision impacts the assessment of student learning for the major.

| **ULOs** | **CWEOs** | **Student Learning Outcome / Objective** (Students will demonstrate the ability to +[Bloom’s action verb]+ [something] | **Courses** in which **students receive feedback** on this learning objective. | **Measure** (Method to gauge achievement of expected results. A measure can relate to multiple outcomes) | **Target** (Overall level for satisfactory performance on a Measure- Outcome/Objective combination.) | **Timeline** (How often will measure be collected?) |
| --- | --- | --- | --- | --- | --- | --- |
| **2. Breadth and depth of knowledge** Develop knowledge common to the liberal arts and sciences in the fields of arts, humanities, natural sciences, and social sciences. Students will also develop specialized nowledge and disciplinary expertise | **4.1 Breadth and depth of knowledge:** Understanding the foundational content and philosophical assumptions of one’s specialized area of study | Graduates will demonstrate an understanding of the foundational content of mathematics. Foundational content’, as outlined by published curriculum guidelines such as those of the Mathematical Association of America. Foundational proficiency includes completion of introductory courses in applied disciplines that are closely related to mathematics. | MATH 111, 112, 195, 211, 261, 301, 308, 341, 362, 382, 392, 405, 412, 490, 494, STAT 291, PHYS 211, 212, COSC 181 | Major Field Test – ETS Mathematics Major Field test, taken by all mathematics seniors in the final month of the degree plan | In each 5 year cluster, IMS mathematics' student results will rank in the upper quartile among all institutions participating. | Assessed every 5 years |
| **4.2 Specialized scholarship.** Become proficient in the scholarship of their discipline and demonstrate specialized skills needed to pursue a career and/or graduate school | **4.2 Scholarship:** Engaging in scholarship in one’s specialized area of study | Graduates will engage in scholarship in mathematics, demonstrating the professional skills of independent problem-solving, self-directed research, and oral and written communication. The Department will provide the opportunity for scholarship activities in mathematics such as conference attendance and interdisciplinary Collaboratory projects and will encourage professional pursuits such as article submission, summer research, and internships. | MATH 195, 341, 392, 405, 490, 494 | Once every 5 years, a sample of five randomly selected student final projects (paper, presentation, video recording) in MATH 494 will be judged by an external mathematics consultant, according to a rubric developed by the department that includes a 5-pt. scale for each of the four professional skills included in the objective (20 pts total). | For each professional quality (independent problem-solving, self-directed research, oral communication, and written communication) at least two projects will be judged at the 4 or 5-pt. level and no more than one ranking of 1 or 2 pt will be received. | Every 5 years |
| **5. Self-Awareness** Gain awareness of identity, character, and vocational calling | **4.4 Intrapersonal Awareness:** Gaining an awareness of options for employment, voluntary service, and/or graduate education in one’s specialized area of study | Graduates will gain an awareness of options for employment, voluntary service and/or graduate education in mathematics or closely related fields. | MATH 195, 494 | Students will complete assignments in both MATH 195 and MATH 494 related to vocational and educational options in mathematics and mathematics education. Once every 5 years, the department will randomly select 5 graduates of the MATH/MATT major and analyze the quality of these assignments longitudinally, looking for evidence of *gained awareness*, according to a rubric written by the department. | Among the 5 samples of student work selected, 4 or 5 will show evidence of at least satisfactory growth in understanding and awareness. | Every 5 years |
| **3. Faith knowledge & application** Develop informed and mature convictions about Christian faith and practice | **4.5 Faith knowledge & application:** Articulating how faith connects to one’s specialized area of study and to potential career options in that area of study | Graduates will articulate a maturing understanding of how faith connects to mathematics and how the biblical call to vocation relates to potential career options in mathematical sciences. | MATH 195, 494 | (Same measure as above row; likely the same assignments) | (See above) | Every 5 years |
| **4.3 Specialized skills** Become proficient in the scholarship of their discipline and demonstrate specialized skills needed to pursue a career and/or graduate school | **4.3 Specialized skills:** Developing proficiency in one’s specialized area of study sufficient to pursue a career and/or continue education at the graduate level | Graduates will demonstrate sufficient skills to use technology to enhance understanding and simplify computation and to present work professionally with technology. | MATH 111, 112, 211, 308, 341, 382, STAT 291, 324, 325, 326, PHYS 211/212 | Samples of student work in courses using different technologies | In each measurement cycle, samples of both basic and advanced use of at least three technological tools will be identified, representing work from at least four different courses. |  |