

# UC San Diego - WASC Exhibit 7.1

## Inventory of Educational Effectiveness Indicators: Mathematics, June 27, 2012

Academic Program	<p style="text-align: center;">(2) What are these learning outcomes?</p> <hr/> <p style="text-align: center;">Where are they published? (Please specify)</p>	<p style="text-align: center;">(3) Other than GPA, what data/evidence is used to determine that graduates have achieved stated outcomes for the degree?</p>	<p style="text-align: center;">(4) Who interprets the evidence? What is the process?</p>	<p style="text-align: center;">(5) How are the findings used?</p>
<p><b>Department:</b> <i>Mathematics</i></p> <p><b>Majors:</b> <i>B.S. in Mathematics</i> <i>B.S. in Applied Mathematics</i> <i>B.S. in Mathematics-Computer Science</i> <i>B.A. in Mathematics-Secondary Education</i> <i>B.S. in Joint Major in Mathematics &amp; Economics</i> <i>B.S. in Mathematics-Scientific Computation</i> <i>B.S. in Probability &amp; Statistics</i> <i>B.S. in Mathematics-Applied Science</i></p> <p><b>(1) Have formal learning outcomes been developed?</b> <i>Yes</i></p> <p><b>(6) Date of last Academic Senate Review?</b> <i>2007-08</i></p>	<p><b>Students graduating with the degree should be able to:</b></p> <ol style="list-style-type: none"> <li>Upon graduation, our undergraduate students will demonstrate a solid understanding of differential, integral and multivariable calculus. Students will be able to apply these concepts to a variety of problems.</li> <li>Demonstrate a solid understanding of vector calculus, linear algebra and ordinary differential equations. Students will be able to apply these concepts to a variety of problems.</li> <li>Demonstrate a good understanding of rigorous mathematical proof. They will be able to write well-organized and logically sound mathematical arguments.</li> <li>Demonstrate a solid understanding of higher level algebra and/or analysis.</li> <li>Demonstrate a solid understanding of at least one area of specialization within mathematics</li> </ol> <hr/> <p><b>Learning outcomes published:</b></p> <ul style="list-style-type: none"> <li>UCSD Course Catalogue</li> <li><a href="http://math.ucsd.edu/">http://math.ucsd.edu/</a></li> <li>Core course sequence descriptions in the Department.</li> <li>Course syllabi</li> <li>Articulation Agreements with California Community Colleges (project IMPAC)</li> </ul>	<p><b>Data/Evidence:</b></p> <ul style="list-style-type: none"> <li>In the upper and lower core course sequences, faculty teaching later in the sequence assess whether students have learned the material from the previous courses in the sequence.</li> <li>Faculty teaching the advanced electives determine whether students have learned the upper division core material.</li> <li>Faculty teaching the standard electives and the upper division core courses determine whether the students have learned the lower division core material.</li> <li>Exit surveys of graduating seniors provide evidence about strengths and weakness of the program.</li> <li>Minimum of 52 units of upper division mathematics coursework.</li> <li>Required upper division courses in mathematical theory.</li> <li>Outcome 1 is met by successfully completing Math 20A-B-C.</li> <li>Outcome 2 is met by successfully completing Math 20D-E-F.</li> <li>Outcome 3 is met by successfully completing Math 109.</li> <li>Outcome 4 is met by successfully completing at least one of Math 100A, 102, 103A, 140A, 142A, 170A.</li> <li>Outcome 5 is met by successfully completing at least one mathematical sequence. A sequence is defined as a two or three quarter long progression of related coursework in a specified mathematical field.</li> </ul>	<ul style="list-style-type: none"> <li>Undergraduate Affairs Committee and Vice-Chair for Undergraduate Education oversee requirements, which are endorsed by full faculty.</li> <li>At the end of each academic year, the Vice Chair solicits faculty feedback regarding the core curriculum and reports findings to the Undergraduate Affairs Committee. Minor adjustments are made if necessary and approved by the faculty. Major changes are approved by the full faculty and CEP.</li> <li>The Vice-Chair for Undergraduate Education acts on all requests/petitions for variation of requirements.</li> <li>CEP Review Committee</li> </ul>	<ul style="list-style-type: none"> <li>Individual course instructors use feedback to modify their classes.</li> <li>Internally the department adjusts requirements and course sequences for the major.</li> <li>CEP approves any changes to the major requirements.</li> </ul>