# MATHEMATICS, MIDDLE-LEVEL MATHEMATICS ENDORSEMENT CERTIFICATE, GRADUATE

Through completion of the required courses in this certificate program, teachers currently certified in the state of Washington will earn a middle-level (4th through 9th grades) mathematics teaching endorsement. The MA in teaching K–9 mathematics program, with endorsement-specific electives completed, also meets the middle-level endorsement requirements, and students in the degree program need not enroll separately in this certificate program. The certificate program is for students seeking the endorsement only, without the master's degree, and differs from the undergraduate add-on middle level endorsement program in that the graduate courses will be populated by certified teachers who may have had teaching experience that they will bring to bear. The certificate program courses will also be offered in the late afternoons and summer quarters, whereas the courses in the undergraduate program are primarily offered during the day in the regular academic year.

Completion of this program—by a currently certified teacher with one or more Washington State Teaching Endorsements—will satisfy the Washington state requirements for a middle level mathematics teaching endorsement (grade levels 4–9).

**General Admission Requirements for the Middle Level Mathematics Add-On Endorsement**
- A Washington State Teaching Certificate.
- Demonstration of entry-level competency on an inventory of content knowledge for teaching mathematics administered in the Mathematics Department.

Note: for students who have not previously completed MATH 141 or equivalent, or MATH 311, the program will total 40 credits.

**Required Courses**

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| EDUC 517 | THE CULTURE OF MIDDLE LEVEL SCHOOL | 3 |
| MATH 510 | NUMBER SENSE FOR TEACHERS | 3 |
| MATH 511 | RATIO AND PROPORTION - TEACHERS | 3 |
| MATH 512 | GEOMETRIC REASONING - TEACHERS | 3 |
| MATH 513 | DATA ANALYSIS AND PROBABILITY FOR TEACHERS | 3 |
| MATH 514 | ALGEBRAIC REASONING - TEACHERS | 3 |
| MATH 515 | MEASUREMENT FOR TEACHERS | 3 |
| MATH 516 | CALCULUS FOR MIDDLE LEVEL TEACHERS | 4 |
| MATH 528 | PROBLEM-CENTERED LEARNING | 3 |
| MTED 525 | ASSESSMENT AND MATHEMATICS LEARNING | 3 |
| MTED 694 | MATHEMATICS MIDDLE LEVEL TEACHING INTERNSHIP | 4 |
| **Total Credits** | | **35** |

**Students who successfully earn a Mathematics, Middle-Level Mathematics Endorsement Graduate Certificate from EWU should be able to do the following:**
- demonstrate an understanding of concepts and practices related to data analysis, statistics and probability and apply the fundamental ideas of discrete mathematics in the formulation and solution of problems;
- demonstrate computational proficiency using various strategies, including a conceptual understanding of numbers, relationships among number and number systems and meanings of operations with all real numbers;
- possess a deep understanding of how students learn mathematics and of the pedagogical knowledge specific to mathematics teaching and learning;
- understand and apply the mathematical processes of problem solving, reasoning, communicating and connecting; use varied representations to support and deepen mathematical understanding; and embrace technology as an essential tool for teaching and learning mathematics;
- understand relationships among quantities, functions and the analysis of change and demonstrate a conceptual understanding of and procedural facility with fundamental single variable calculus;
- use spatial visualization and geometric modeling to explore and analyze geometric figures and apply and use measurement concepts and tools.