

LMC DE Committee
Institutional SLOs for DE Program
10/10/05

After completing capstone math and English courses (Math 30 and English 90) in the Developmental Education program, students will

1) Demonstrate the skills necessary for the first transfer level courses in English and Math or for the English and Math competencies for the Certificate of Achievement.

Criteria:

- a. Demonstrate proficiency in course-level outcomes for capstone developmental courses, English 90 and Math 30.
- b. Criteria for demonstrating competencies for certificate to be determined

2) Think critically to construct meaning and solve problems

Criteria:

- a. Construct meaning from pre-collegiate texts by using a critical reading process to summarize, interpret, analyze, evaluate and synthesize
- b. Interpret, analyze, and apply numerical, graphical, and algebraic representations of mathematical ideas to solve problems
- c. Solve problems using a general problem-solving process that incorporates identifying given information, paraphrasing tasks, stating assumptions, estimating, strategizing, making predictions, interpreting results, and evaluating the reasonableness of an answer

3) Read with comprehension.

Criteria:

- a. Use a critical thinking, problem-solving process when reading and employ active reading strategies to construct meaning from college-level texts and course materials
- b. Use reading as a tool for learning in academic, personal, and career situations.
- c. Read, analyze, and interpret information from charts, graphs, and tables.

4) Communicate effectively both in writing and orally.

Criteria:

- a. Use writing as a tool for learning and communicating
- b. Write clearly and effectively in a variety of forms for different audiences and purposes
- c. Engage in small group discussions to investigate ideas and apply concepts
- d. Coherently communicate, both in speaking and in writing, a personalized understanding of ideas and concepts
- e. Demonstrate an understanding of oral presentations by following directions, asking relevant questions, taking accurate notes, responding in perceptive ways to classmates' ideas.

5) Demonstrate the characteristics, habits, and attitudes of an effective learner.

Criteria:

- a. Use self-assessment and instructor feedback to improve learning.
- b. Use college resources (e.g. lab services, counseling, etc.) to improve learning and persistence toward educational goal.
- c. Take responsibility for learning, work independently, productively cope with frustration, manage time well.

The LMC Developmental Math Program has SLOs that are aligned with the above Institutional SLOs for the Developmental Education Program, as well as dovetailed with the Transfer Math Program SLOs. (See pages 3 and 4.) The English Department wrote one set of program-level SLOs to encompass both the developmental English sequence and the sequence of transfer-level English courses for the major. (See page 5.)

LMC Developmental Math Program Student Learning Outcomes

Students completing the Developmental Math Program will demonstrate:

1. **Problem-solving abilities:** Students will use mathematical reasoning to solve problems and a generalized problem solving process to work word problems.
 - a. The student can apply standard problem-solving methods and use relevant concepts to solve problems.
 - b. The student uses a generalized problem-solving rubric if such a rubric is used in the class.
 - c. The student's written work demonstrates a conceptual understanding of course concepts.
 - d. The student's written work supports his/her solution.
 - e. The student evaluates the reasonableness of his/her answer.
2. **Mathematical versatility:** Students will use verbal, graphical, numerical, and symbolic representations of mathematical ideas to solve problems.
 - a. Students will use a variety of representations to demonstrate their understanding of mathematical concepts.
 - b. Students will use a multi-prong approach to problem solving.
 - c. Students will use appropriate technology to solve mathematical problems and judge the reasonableness of their results.
3. **Communication skills:** Students will read, write, listen to, and speak mathematics with understanding.
 - a. Students will read and listen to mathematical presentations and arguments with understanding.
 - b. Students will communicate both in speaking and in writing their understanding of mathematical ideas and procedures using appropriate mathematical vocabulary and notation.
 - c. Students will coherently communicate their own mathematical thinking to others.
4. **Preparation:** Students will recognize and apply math concepts in a variety of relevant settings and demonstrate the math skills and knowledge necessary to succeed in subsequent courses.
5. **Effective Learning Attributes:** Students will demonstrate the characteristics of an effective learner.
 - a. Student has the will to succeed and demonstrates the characteristics of a successful student: motivation, responsibility, focus, perseverance, the ability to cope with anxiety, a good attitude toward learning, and time management skills.
 - b. Student has the skills to succeed. (S)he uses appropriate resources to improve learning and reach goals.
 - c. Student self-monitors and self-regulates. (S)he assesses personal strengths and weaknesses in his/her learning process and then seeks and implements a strategy for improving learning.

LMC Transfer Math Program

Students completing transfer-level math courses at LMC will demonstrate:

1. **Preparation and Mathematical Maturity:** Be prepared for the mathematical reasoning required in upper division work in their major, including the ability to generalize mathematical concepts and comprehend increasing levels of mathematical abstraction.
2. **Mathematical Literacy:**
Communicate using mathematics:
 - a. Read with comprehension documents having mathematical content and participate cogently in discussions involving mathematics;
 - b. Clearly articulate mathematical information accurately and effectively, using a form, structure and style that suit the purpose (including written and face-to-face presentation).
3. **Problem-solving ability:**
 - a. Reason with and apply mathematical concepts, principles and methods to solve problems or analyze scenarios in real-world contexts relevant to their major;
 - b. Use technology effectively to analyze situations and solve problems;
 - c. Estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results.
4. **Modeling ability:**
 - a. Construct and interpret mathematical models using numerical, graphical, symbolic and verbal representations with the help of technology where appropriate in order to draw conclusions or make predictions;
 - b. Recognize and describe the limits of mathematical and statistical methods.
5. **Effective Learning skills:**
 - a. Independently acquire further mathematical knowledge without guidance, take responsibility for their own learning, and function effectively in different learning environments.
 - b. Succeed in different learning environments, particularly in a group setting of working collaboratively with others.

Program-level SLOs for English

(Note: the English program does not have separate program-level SLOs for the developmental and transfer sequence)

At the end of the English program students will

1. Read independently for a variety of purposes in college-level materials
2. Read using a critical thinking, problem-solving approach
3. Respond coherently to text in critical, creative and personal ways
4. Write logical, coherent, developed academic essays
5. Observe, monitor and evaluate strengths and weaknesses, then apply feedback to improve skills and learning
6. Use college resources to increase learning effectiveness