# Mathematics

Students are required to complete at least one mathematics course to fulfill the Liberal Studies Mathematics requirement. Additional mathematics requirements may be specified by the student's major or college.

## ***Mathematics Expected Undergraduate Student Learning Outcomes***

Syllabi for courses designed to fulfill the Liberal Studies Mathematics requirement must provide course content that enables students to achieve the Expected Undergraduate Student Learning Outcomes identified below. Course proposals may identify additional objectives from the list of Expected Undergraduate Student Learning Outcomes as appropriate to the course content.

Informed Learners understand nature and society through forms of inquiry fundamental to the sciences, the humanities, and the arts. Learners are informed by knowledge and ways of knowing that extend beyond core concepts enabling them to link theory and practice.

As *Informed Learners* students will demonstrate knowledge and understanding of:

- the ways of modeling the natural, social and or technical worlds As

Empowered Learners are critical thinkers who demonstrate intellectual agility and creativity and the ability to manage or create change. They are able to derive meaning from experience and observation. They communicate well in diverse settings and employ various strategies to solve problems. They are empowered through mastery of intellectual and practical skills.

*Empowered Learners* students will demonstrate:

- problem solving skills using a variety of methods and tools
- critical thinking skills including analysis, application and evaluation

## ***Mathematics Required Course Content***

Proposals for courses designed to fulfill the Liberal Studies Mathematics requirement must include opportunities for students to:

- develop and apply deductive reasoning skills
- apply multiple problem solving techniques as appropriate to the course
- promote understanding and use of mathematical formulas
- enable the interpretation, analysis and use of numerical and graphical data
- develop mathematical models to solve problems

Additionally, individuals proposing courses designed to fulfill the Liberal Studies Mathematics requirement are encouraged to include opportunities for students to:

- increase confidence and ability in using mathematics
- introduce historical context of mathematical problems and their solutions
- introduce the appropriate use of technology as a tool in problem solving
- include applications and problems from a variety of disciplines

## ***Mathematics Common Learning Objectives***

All courses meeting the Liberal Studies Mathematics requirement will establish common course objectives stating:

At the conclusion of the course the student should be able to:

- understand deductive reasoning and apply it in the problem solving process
- apply appropriate techniques to solve a variety of problems
- interpret, understand and apply mathematical formulas appropriate to the course
- interpret, analyze and use numerical data and graphs
- develop simple mathematical models to solve problems