

WHAT “MATHEMATICS” COURSE IS REQUIRED IN COLLEGE?

- GENERAL EDUCATION REQUIREMENTS -



Quantitative Reasoning is the methodology used to analyze quantitative information to make decisions, judgments, and predictions. It involves defining a problem by means of numerical or geometrical representations of real-world phenomena, determining how to solve it, deducing consequences, formulating alternatives, and predicting outcomes. QR courses may come from a wide range of disciplines representing the natural and social sciences.

<https://lsa.umich.edu/lsa/academics/lsa-requirements/quantitative-reasoning-requirement.html>
<http://www.lsa.umich.edu/saa/publications/coursereport01/qr.pdf>



Mathematics Requirement (includes quantitative literacy courses)

<https://www.insidehighered.com/news/2016/07/06/michigan-state-drops-college-algebra-requirement>
<https://reg.msu.edu/AcademicPrograms/Print.aspx?Section=284>



Quantitative Experience: Individuals with competency in quantitative skills possess the ability to reason and solve problems from a wide range of authentic contexts and everyday life situations. They can interpret quantitative data and use that analysis to provide support for sophisticated arguments. They can clearly communicate those arguments in a variety of formats as appropriate. This requirement is aimed at developing those skills in all of our students.

<https://www.insidehighered.com/news/2016/06/16/debate-over-whether-all-undergraduates-should-take-mathematics-course>
<https://bulletins.wayne.edu/undergraduate/general-information/general-education/competency-requirements/>



Formal Reasoning: This area incorporates courses from disciplines such as computer science, mathematics, statistics, linguistics and logic that require students to use formal reasoning systems to model and solve problems. A formal reasoning course must be taken prior to junior standing.

http://catalog.oakland.edu/content.php?filter%5B27%5D=-1&filter%5B29%5D=&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=%22Formal+Reasoning%22&filter%5B32%5D=1&filter%5Bcpag%5D=1&cur_cat_oid=44&expand=&navoid=5284&search_database=Filter#acalog_template_course_filter



Foundations - Mathematical Sciences: The physical sciences seek to explore and explain the structure and processes of the physical universe. They seek to understand the fundamental workings of nature, from the behavior of atoms to the functioning of the galaxies. Study of the history, methodologies, concepts, and applications of the physical sciences assists you in becoming scientifically literate. Each course in this category is a broad introduction to one or more of the physical sciences. Courses contribute to the development of critical-thinking and problem-solving skills, and help you apply an understanding of scientific thinking to your own life and career.

<https://www.gvsu.edu/gened/foundations-mathematical-sciences-276.htm>



Quantitative Reasoning: Quantitative reasoning skills are required in almost every major and professional program, as well as in personal and professional life. Students need quantitative literacy to function in society. Common examples include managing one's own finances (e.g., credit card debt), reading and understanding the newspaper, and informed voting.

https://catalog.emich.edu/preview_program.php?catoid=29&poiid=12713



College-Level Mathematics or Quantitative Reasoning

<https://wmich.edu/arts-sciences/proficiencies>



Mathematics and Quantitative Reasoning Competency: The Mathematics/Quantitative Reasoning requirement develops the ability to understand and solve quantitative problems that arise in a variety of contexts.

<http://cmich.smartcatalogiq.com/2019-2020/Undergraduate-Bulletin/General-Education-Requirements-Competencies-UP/II-The-Competencies/Mathematics-and-Quantitative-Reasoning-Competency>



Quantitative Reasoning and Analysis: Students who complete the Quantitative Reasoning and Analysis component will demonstrate interpretation of quantitative data leading to conclusions.

<https://www.nmu.edu/bulletin/general-education?processtype=self&action=LibStudReq&phase=phase1&elementid=1490373688>



Mathematical Modeling: Mathematical Modeling courses provide rigorous instruction in fundamental mathematical concepts and skills presented in the context of real-world applications. The modeling skills provide analytical methods for approaching problems students encounter in their future endeavors.

<https://gened.indiana.edu/requirements/index.html>



Quantitative Reasoning: Quantitative Reasoning is the process of forming conclusions, judgments or inferences from quantitative information. Quantitative Reasoning requirement at UW–Madison has two parts: Part A and B. Quantitative Reasoning A courses provide students with skills in mathematics, computer science, statistics or formal logic that are needed for dealing with quantitative information. The acquired skills are broad-based in order to have a positive impact on the readiness of students to take a Quantitative Reasoning B course in a variety of disciplines. Quantitative Reasoning B courses allow students to enhance their Quantitative Reasoning Proficiency in a more advanced setting, where they make significant use of quantitative tools in the context of other course material.

<https://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext>



Mathematics, Formal Reasoning, Technology: All courses in this area involve mathematical reasoning. This reasoning could either be problem solving and pattern finding at the inductive level, or formal and abstract reasoning at the deductive level, or a combination of both forms of arguments. In all courses, students' abilities to develop logical arguments are strengthened and improved. The courses may also provide opportunities for the students to explore the role of formal reasoning in history, society, and the modern world, and to reflect upon its use in formulating well-founded, ethical decisions.

<https://miamioh.edu/liberal-ed/current-students/2015current-students/foundation5/index.html>



Quantitative Analysis: Quantitative analysis enables one to understand and analyze quantitative information presented in various formats. It involves reasoning by symbolic, numerical, or geometrical means; determining various ways to solve problems; and predicting possible consequences.

<https://www.luc.edu/core/quantitativeanalysiscoursesub-first.shtml>