Mathematics Requirements – Policy Benchmarking

I. Summary

A review of 17 ABOR and peer institutions reveals that all but two institutions have institution-wide mathematics requirements, though some institutions may have additional requirements for select programs. Ten institutions, like the University of Arizona, require a minimum of 3 units to meet the mathematics requirement, and no institutions require beyond 6 units.

Nine institutions list the required coursework in the policy. Seven institutions do not name coursework that meets the requirements, but their course catalog may be filtered to view courses that meet the mathematics requirement.

Only two institutions besides the University of Arizona specify in-policy that the requirement may be waived through credit by exam and/or placement test; most institutions refer only to meeting the requirement via course work.

Almost all institutions allow students to select 1-2 courses from a list of pre-approved coursework to meet the requirement (with some majors requiring specific courses). No other institutions have multiple set strands designated by major like the University of Arizona.

At seven institutions, the only departments that may offer courses to satisfy the requirement are Mathematics, Statistics, and/or Data Science. The remaining nine institutions allow coursework from a wide assortment of departments not traditionally related to math.

Other than four institutions requiring students to complete the requirement within their first 30-60 units, no institution specified when in a plan of study the mathematics requirement needed to be completed.

A. Minimum Credits to Fulfill Math Foundations Requirement

INSTITUTION	MINIMUM CREDITS
• **University of Arizona** • Arizona State University • Northern Arizona University • University of California-Davis • University of California – LA • University of Iowa* • University of Maryland • University of Minnesota • University of North Carolina • University of Texas – Austin • University of Washington – Seattle • University of Wisconsin- Madison	3
• Ohio State University*	3; *"Additional mathematics courses may be necessary to fulfill your major or pre-major requirements."*
• University of Florida • University of Illinois • Michigan State University • Pennsylvania State University • Texas A&M University	6

*No institutional requirement; the data listed reflect the institutions' College of Arts and Sciences policy.

B. Does the Policy Specify the Required Courses?

INSTITUTION	COURSES SPECIFIED
• **University of Arizona** • University of California- Davis • University of Florida • University of Iowa* • Michigan State University • University of North Carolina • Ohio State University* • Pennsylvania State University • Texas A&M University • University of Texas	Yes
• Northern Arizona University	"You may use any course with an MAT or STA prefix included in your chosen degree plan to fulfill the mathematics requirement, EXCEPT the following courses: • MAT 101X • MAT 102X • MAT 100 • MAT 108 • MAT 123 • MAT 150"
• Arizona State University • University of California – Davis • University of Illinois • University of Maryland • University of Minnesota • University of Washington -Seattle • University of Wisconsin – Madison	No; course catalog filters for courses that meet requirement

*No institutional requirement; the data listed reflect the institutions' College of Arts and Sciences policy.

C. Pathways Specified to Meet Requirement

PATHWAYS	INSTITUTION																
	UA	ASU	NAU	UCD	UCLA	UF	UI- Urb	UI -Iowa*	UM- Col	MSU	UM -Twi	OSU*	PSU	TAMU	UT- Aus	UW -Sea	UW- Mad
College Credit	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Credit by Exam	X								X							X	X
Placement Test	X								X								X
SAT / ACT					X												

*No institutional requirement; the data listed reflect the institutions' College of Arts and Sciences policy.

D. Strands / Course Options

INSTITUTION	STRANDS
• **University of Arizona**	3 strands (general, moderate, & substantial), determined by major
• Michigan State University	4 different options of course combinations (options determined by placement exam)
• Arizona State University • Northern Arizona University • University of California – Davis • University of California- LA • University of Illinois • University of Iowa* • University of Maryland • University of Minnesota • University of North Carolina • Pennsylvania State University • Texas A&M University • University of Texas – Austin • University of Washington – Seattle • University of Wisconsin - Madison	Select 1 or more courses from several options
• University of Florida	Select 1 or more courses from several options. Note in policy: "*Some majors require or recommend specific general education courses.*"
• Ohio State University*	Select 1 or more courses from several options. Note in policy: "*Additional mathematics courses may be necessary to fulfill your major or pre-major requirements.*"

*No institutional requirement; the data listed reflect the institutions' College of Arts and Sciences policy.

E. Departments Offering Courses that Satisfy Requirement

OFFERING DEPARTMENT	**INSTITUTION**																
	UA	ASU	NAU	UCD	UCLA	UF	UI- Urb	UI – Iow*	UM - Col	MSU	UM- Twi	UNC	OSU*	PSU	TAMU	UT - Aus	UW - Sea
Agriculture				X			X						X	X			
Anthropology				X								X					
Astronomy							X					X	X				X
Atmospheric Sciences				X			X										
Biology		X		X	X							X	X				X
Chemistry				X									X				X
Communication		X		X				X									
Computer Science		X		X	X		X	X				X	X	X			X
Data Science								X	X			X		X			
Earth Science							X					X		X			X
Economics		X		X			X					X	X				X
Education																	
Engineering		X		X			X							X			X
Environmental Science				X			X					X	X				X
Geography		X					X	X				X	X				X
Human Development				X			X							X			
Journalism							X					X					
Kinesiology							X							X			
Linguistics	X			X				X				X	X				X
Management				X													
Math	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Neuroscience		X		X								X					
Philosophy	X	X			X		X	X				X	X	X	X	X	X
Physics		X		X			X				X	X	X				X
Planning / Architecture		X					X					X					
Political Science		X		X	X			X			X	X	X				
Psychology	X			X			X	X			X	X		X		X	X
Sociology				X			X				X	X	X			X	X
Statistics			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

*No institutional requirement; the data listed reflect the institutions' College of Arts and Sciences policy.

Note: University of Wisconsin – Madison does not name its courses in policy nor allow non-students to view the schedule of classes, where courses meeting the requirement are designated.

F. Required Completion Timeline

INSTITUTION	DEADLINE
• **University of Arizona**	Graduation requirement with no other deadline specified, but entry to some programs will require completion of mathematics requirement.
• Arizona State University	"All undergraduate degree-seeking students are expected to fulfill the university's mathematics requirement by the time they have accumulated 30 credit hours in residence at ASU. Any student who has more than 30 credit hours and has not fulfilled the mathematics requirement must enroll in a mathematics course or an appropriate prerequisite course and continue to do so every semester until the mathematics requirement is met."
• Northern Arizona University	"Any student who has more than 60 hours of credit and has not fulfilled the mathematics foundation requirement must enroll in a course that fulfills the requirement or an appropriate prerequisite course and continue to do so every semester until the mathematics requirement is met." "The Mathematics Foundations course helps students during their first year to develop the skills necessary for future mathematical reasoning within their major and in their future personal and professional lives."
• University of Maryland	"[Fundamental mathematics] courses must be attempted by 30 credits and successfully completed by 60 credits."
• University of Wisconsin - Madison	"[Students] should complete Part A of the Quantitative Reasoning requirement by the end of their first year, and must complete Part A before they enroll in Part B."
• University of California – Davis • University of California – LA • University of Florida • University of Illinois • University of Iowa* • Michigan State University	Graduation requirement with no other deadline specified

• University of Minnesota • University of North Carolina • Ohio State University • Pennsylvania State University • Ohio State University* • Texas A&M University • University of Texas – Austin • University of Washington - Seattle	

*No institutional requirement; the data listed reflect the institutions' College of Arts and Sciences policy.

G. Name for Requirement

INSTITUTION	TERM USED
• **University of Arizona**	Foundation Mathematics
• University of Maryland	Fundamental Mathematics
• University of Minnesota	Mathematical Thinking
• Ohio State University*	Mathematical and Quantitative Reasoning or Data Analysis
• Arizona State University • Northern Arizona University • University of Florida • Michigan State University • Texas A&M University • University of Texas – Austin	Mathematics
• Pennsylvania State University	Quantification
• University of California – Davis	Quantitative Literacy
• University of California – LA • University of Illinois • University of Iowa • University of North Carolina • University of Wisconsin - Madison	Quantitative Reasoning
• University of Washington – Seattle	Reasoning

*No institutional requirement; the data listed reflect the institution's College of Arts and Sciences policy.

II. Full Policy Texts

University of Arizona

https://catalog.arizona.edu/policy/program-graduation/general-education/foundations#mathematics-requirements

Mathematics Requirements

Mathematics Placement Test:
Registration in all MATH courses below MATH 129, as well as MATH 163, MATH 263, and MATH 302A, may require students to take the UA Mathematics Placement Test. Test scores are valid for one year. This requirement includes transfer students with or without mathematics credit and students with credit by examination, such as Advanced Placement (AP), CLEP, or International Baccalaureate (IB).

Eligibility rules and testing information may be found on the **Math Placement Homepage**.

Foundations Mathematics Requirement:
All students, as part of their Foundations requirements, are expected to demonstrate mathematical knowledge and quantitative reasoning by completing one of the following 3-unit courses or by achieving a minimum math placement code as stated below:

1. earning credit for LING 123, (Introduction to Mathematical Approaches to Language), or MATH 105 (Mathematics in Modern Society), or PHIL 110 (Logic and Critical Thinking)-check prerequisites, such as a minimum math placement code (see the chart provided on the **Math Placement Homepage**); or
2. earning credit for any 3-unit (or more) mathematics course numbered above Math 105, provided that the student has placed at the level required for the course (see the chart provided on the **Math Placement Homepage**); or
3. achieving a math placement code equivalent to that of students who have completed University of Arizona College Algebra-by the end of the student's first semester at the University (see the chart provided on the **Math Placement Homepage**, as well as **Proficiency and Exemption Exam Procedures and General Regulations**). [Note: the placement code is determined by the catalog and math placement regulations in effect when an exam is taken.] If the Math Placement Test is used for this purpose, the test must be proctored per Math Department guidelines, which may be found on the **Math Placement Homepage**.

Beyond this general minimum, however, the appropriate course for an individual student will depend on the student's major and the corresponding math strand appropriate to that major.

Math Strands:
Entry-level mathematics students should choose one of three strands according to their interests, preparation, and intended major. All strands presume that students will have completed the high school math required for entry to the University.

- **G-Strand** (General Knowledge) -- This strand involves the general understanding and appreciation of how mathematics is used to solve problems in everyday life. The G-strand does not prepare a student for any further work grounded in mathematics and assumes the student will not proceed beyond the basic Foundations level noted above. Thus only those students whose major requires the most general knowledge of mathematics should take this strand. The options to satisfy this strand are:

    1. earning credit for LING 123 (Introduction to Mathematical Approaches to Language), or MATH 105 (Mathematics in Modern Society), or PHIL 110 (Logic and Critical Thinking), or PSY 230 (Psychological Measurement and Statistics)-check prerequisites, such as a minimum math placement code (see the chart provided on the **Math Placement Homepage**); or

    2. earning credit for any 3-unit (or more) mathematics course numbered above Math 105, provided that the student has placed at the level required for the course (see the chart provided on the **Math Placement Homepage**); or

    3. achieving a math placement code equivalent to that of students who have completed UA College Algebra-by the end of the student's first semester at the UA (see the chart provided on the **Math Placement Homepage**, as well as **Proficiency and Exemption Exam Procedures and General Regulations**). [Note: t*he placement code is determined by the catalog and math placement regulations in effect when an exam is taken*.] If the Math Placement Test is used for this purpose, the test must be proctored per Math Department guidelines, which may be found on the **Math Placement Homepage**.

- **M-Strand** (Moderate Knowledge) -- The M-strand is for students who require mathematical facility at the level of at least MATH 112 (College Algebra Concepts) or 108 (Modeling with Algebraic and Trigonometric Functions). This strand involves reasonable facility with algebra and algebraic functions, graphs, and simple modeling. Students who choose the M-strand are prepared for further mathematical work. This work may include MATH 107 (Exploring and Understanding Data), MATH 113 (Elements of Calculus), MATH 116 (Calculus Concepts for Business), MATH 119A (Mathematics of Biological Systems: A Calculus Based Approach), or a statistics class from outside the Mathematics Department, such as ISTA 116 (Statistical Foundations for the Information Age) or SBS 200 (Statistics for the Social Sciences).

- **S-Strand** (Substantial Knowledge) -- This strand involves skill and facility with calculus. The S-strand begins at one of two calculus options - MATH 122A/B (Functions for Calculus and First-Semester Calculus) or MATH 125 (Calculus I). Students who successfully complete the S-strand may continue on to MATH 129 (Calculus II), MATH 223 (Vector Calculus), or beyond. Those who choose but are not ready to begin the S-strand will be required to take preparatory work.

Each major indicates the mathematics strand, or specific course from a strand, that is most appropriate for its students. It is important to note that each strand provides a different level of mathematical training, but students can satisfy the mathematics requirement in their

major by completing a more advanced mathematics course. Because the S-strand presumes the M-strand and the M-strand presumes the G-strand, students will have the most flexibility in their major choice by aiming for the S-strand. A student who chooses to meet the general education mathematics requirement with the G-strand will have the most restricted set of major choices.

Please direct all Math Placement questions to the Department of Mathematics:

Department of Mathematics
Math Placement Coordinator
Mathematics Building, 108
617 North Santa Rita

Phone: (520) 621-6892
Fax: (520) 621-8322
Email: **placement@math.arizona.edu**
Web: **Math Placement Homepage**
Web: **Department Homepage**

Arizona State University
https://catalog.asu.edu/ug_gsr
University undergraduate General Studies requirement

Mathematics (three credit hours)
The Mathematics studies requirement is intended to ensure that students have skill in basic mathematics and can use mathematical analysis in their chosen field of study. The mathematics requirement requires the student to complete a course in college mathematics, college algebra, or precalculus, or demonstrate a higher level of skill by completing a mathematics course for which a course in the above three categories is a prerequisite. A course in mathematics will include the application of mathematical skills in the solution of real-life problems and introduces or makes significant use of fundamental mathematical skills and concepts.

Learning outcomes
Upon completion of a course in Mathematics, students will be able to do the following:

1. demonstrate an understanding of mathematical relationships from multiple perspectives, such as functions from graphical, numerical and analytic points of view
2. apply mathematical skills in the solution of real-life problems

Arizona State University
https://catalog.asu.edu/undergraduatereq
Mathematics requirement

All undergraduate degree-seeking students are expected to fulfill the university's mathematics requirement by the time they have accumulated 30 credit hours in residence at ASU. Any student who has more than 30 credit hours and has not fulfilled the mathematics requirement must enroll in a mathematics course or an appropriate prerequisite course and continue to do so every semester until the mathematics requirement is met. A waiver may be granted for continuous enrollment if there are scheduling conflicts detrimental to the student's academic progress. Students should also see the Math Intensive Programs: Required Course Policy.

Arizona State University

https://catalog.apps.asu.edu/catalog/courses/courselist?advanced=true&gen_studies=GS-MATH&term=2257
Course Catalog Search – General Studies Mathematics

COURSE	TITLE	UNITS	GENERAL STUDIES
AML 100	Introduction to Applied Mathematics for the Life and Social Sciences	3	MATH
AML 253	Introduction to Mathematical Tools and Modeling for the Life and Social Sciences	3	MATH
AML 254	Introduction to Dynamics and Control in the Biological and Social Sciences	3	MATH
CAS 253	Introduction to Mathematical Tools and Modeling for the Life and Social Sciences	3	MATH
CAS 254	Introduction to Dynamics and Control in the Biological and Social Sciences	3	MATH
CPI 200	Mathematical Foundations of Informatics	3	MATH
MAT 114	College Mathematics	3	MATH
MAT 117	College Algebra	3	MATH
MAT 119	Finite Mathematics	3	MATH
MAT 170	Precalculus	3	MATH
MAT 171	Precalculus: Science, Technology, Engineering and Mathematics (STEM)	4	MATH
MAT 210	Brief Calculus	3	MATH
MAT 251	Calculus for Life Sciences	3	MATH
MAT 265	Calculus for Engineers I	3	MATH
MAT 266	Calculus for Engineers II	3	MATH
MAT 267	Calculus for Engineers III	3	MATH
MAT 270	Calculus with Analytic Geometry I	4	MATH

MAT 271	Calculus with Analytic Geometry II	4	MATH
MAT 272	Calculus with Analytic Geometry III	4	MATH
MAT 274	Elementary Differential Equations	3	MATH
MAT 275	Modern Differential Equations	3	MATH
MAT 421	Applied Computational Methods	3	MATH
MAT 423	Numerical Analysis I	3	MATH
PHY 201	Mathematical Methods in Physics I	3	MATH
SOS 101	Mathematics for Sustainability	3	MATH
SOS 211	Calculus and Probability for the Life and Social Sciences	3	MATH

Northern Arizona University

https://www9.nau.edu/policies/Client/Details/1470?whoIsLooking=Students&pertainsTo=All&sortDirection=Ascending&page=3

Liberal Studies Requirements

All students seeking their first baccalaureate degree from Northern Arizona University must take thirty-five (35) units of Liberal Studies. You will take courses to satisfy both the Foundation and Distribution requirements.

Foundation Requirements

- English Composition (minimum of 4 units)
- Mathematics (minimum of 3 units)

Distribution Block Requirements

- Aesthetic and Humanistic Inquiry - AHI (minimum of 6 units)
- Cultural Understanding - CU (minimum of 6 units)
- Science (minimum of 7 units)
    - 3-4 units of Science and Applied Science - SAS course(s) AND
    - 3-4 units of Science and Applied Science with embedded Lab Science course - LAB
- Social and Political Worlds - SPW (minimum of 6 units)
- 3 additional units from any distribution block or foundation category to meet the 35 unit Liberal Studies requirement

Make sure to choose classes from the approved list of Liberal Studies Courses with the help of an academic adviser. A *cross-listed* course may only be counted in one block. Some Liberal Studies courses may also fulfill NAU's Global or U.S. Ethnic Diversity requirements.

If your academic catalog is prior to 2014-2015, courses used for Liberal Studies may share the same prefix as your minor discipline but not your major discipline.

If your academic catalog is 2014-2015 (or a subsequent catalog), up to 9 units of major prefix courses may be used to satisfy Liberal Studies requirements; these same courses may also be used to satisfy major requirements. Courses used for the Liberal Studies distribution requirements can have the same prefix as your minor.

Completion of Liberal Studies Foundation Requirements

All undergraduate degree-seeking students are expected to fulfill the university's Liberal Studies foundation requirements in English and Mathematics by the time they have accumulated 60 hours of credit, including coursework completed at NAU and coursework accepted for transfer to NAU.

English

Any student who has more than 60 hours of credit and has not fulfilled the English foundation requirement must enroll in an English course that fulfills the requirement or an appropriate prerequisite course and continue to do so every semester until the requirement is met. If there are scheduling conflicts detrimental to the student's academic progress, enrollment in the appropriate English course may be deferred to the subsequent semester.

Mathematics

Any student who has more than 60 hours of credit and has not fulfilled the mathematics foundation requirement must enroll in a course that fulfills the requirement or an appropriate prerequisite course and continue to do so every semester until the mathematics requirement is met. If there are scheduling conflicts detrimental to the student's academic progress, enrollment in the appropriate mathematics course may be deferred to the subsequent semester.

New First-Year Students

Before new first-year students can register for the first time at NAU, they must determine what courses to take to complete the university mathematics and English foundation requirements. Students are then expected to enroll immediately in these courses and continue to do so until the requirements are met.

Transfer Students

Transfer students from public Arizona community colleges, tribal colleges or universities can determine the acceptability of their composition and mathematics courses by referring to the Course Applicability System in consultation with an academic advisor. Composition and mathematics courses transferred from out-of-state institutions must be evaluated according to university policies for its acceptability for meeting these requirements. Transfer students who have not completed the Liberal Studies foundation courses are expected to enroll promptly in these courses and continue to do so until the requirements are met. If there are scheduling conflicts detrimental to the student's academic progress, enrollment in the appropriate English and/or Mathematics course may be deferred to the subsequent semester.

Northern Arizona University
https://nau.edu/liberal-studies/
Liberal Studies Course Requirements

Mathematics

The Mathematics Foundations course helps students during their first year to develop the skills necessary for future mathematical reasoning within their major and in their future personal and professional lives. **(3 Credits)**

You may use any course with an MAT or STA prefix included in your chosen degree plan to fulfill the mathematics foundations requirement, EXCEPT the following courses:

- MAT 101X
- MAT 102X
- MAT 100
- MAT 108
- MAT 123
- MAT 150

If your major doesn't require a specific mathematics course, we suggest you take MAT 114 to satisfy the mathematics foundation requirement. Consult with your adviser to determine the most appropriate mathematics course for your major.

University of California – Davis
https://catalog.ucdavis.edu/undergraduate-education/university-degree-requirements/general-education-ge-requirements/
General Education (GE) Requirements

The General Education (GE) requirement promotes the intellectual growth of all undergraduates by ensuring that they acquire a breadth of knowledge that will enlarge their perspectives beyond the focus of a major and serve them well as participants in a knowledge-based society. It seeks to stimulate continued growth by providing knowledge of both the content and the methodologies of different academic disciplines. It involves students in the learning process by its expectation of considerable writing and class participation, and encourages students to consider the relationships between disciplines.

The GE requirement has two components, Topical Breadth and Core Literacies, and is defined in terms of units, not courses.

Topical Breadth Component—52 units

A GE course in topical breadth addresses broad subject areas that are important to the student's general knowledge. The units of most undergraduate courses at UC Davis are assigned to one of the three Topical Breadth Areas.

Note: In the case of a course that has been certified in more than one Topical Breadth Area, a student may count the units of the course in only one of the areas in which it has been certified.

- **Arts & Humanities—12-20 units**. Courses in this area provide students with knowledge of significant intellectual traditions, cultural achievements and historical processes.
- **Science & Engineering—12-20 units**. Courses in this area provide students with knowledge of major ideas and concepts of science and engineering and their applications.
- **Social Sciences—12-20 units**. Courses in this area provide students with knowledge of the individual, social, political and economic activities of people.

Core Literacies Component—35 units

The literacies are crucial both for success in one's profession and for a thoughtful, engaged citizenship in the community, nation and world.

Note: In the case of a course that has been certified in more than one Core Literacy Area, a student may count the units of the course in only one of the core literacy areas in which it has been certified.

1. **Literacy with Words & Images—20 units.** The objective of this core literacy is to help students communicate their ideas effectively in written, oral and visual forms. The requirement also seeks to enhance students' critical judgment of oral, written, and visual messages created by others.

   Note: No course passed prior to satisfaction of the Entry Level Writing Requirement may be used to satisfy the General Education requirements for Writing Experience coursework described in b and c, below. Students should contact their college before taking courses for requirement a, as there may be limitations on credit for students who have not completed the Entry Level Writing Requirement.
   a. **English Composition—8 units.** As described by College of Agricultural & Environmental Sciences, College of Biological Sciences, College of Engineering, or College of Letters & Science.
   b. **Writing Experience coursework in the student's major or in other departments—6 units.** Courses in writing experience provide students instruction on how to communicate ideas in the subject matter of the course. The opportunity to improve writing after having received careful commentary is crucial to this requirement.
   c. **Oral Skills coursework or additional Writing Experience coursework—3 units.** Courses in oral literacy involve effective communication of ideas through oral presentation and build on and strengthen the critical thinking skills exercised through writing. As an alternative to developing oral communication skills, students may take additional coursework certified as writing experience (see requirement b, above).

    d. **Visual Literacy coursework—3 units.** Courses in visual literacy provide students with the analytical skills they need to understand how still and moving images, art and architecture, illustrations accompanying written text, graphs and charts, and other visual embodiments of ideas inform and persuade people. Coursework may stress the skills needed to communicate through visual means as well as the analytical skills needed to be a thoughtful consumer of visual messages.

2. **Civic & Cultural Literacy—9 units.** The objective of this core literacy is to prepare students for thoughtful, active participation in civic society. Students will learn to think analytically about American institutions and social relations, understand the diversity of American cultures, and see the relationships between national and local cultures and the world.
    a. **American Cultures, Governance, & History—3 units.** Courses in American Cultures, Governance, & History provide students with an understanding and appreciation of the social and cultural diversity of the United States and of the relationships between these diverse cultures and larger patterns of national history and institutions.
    b. **Domestic Diversity—3 units.** Courses in Domestic Diversity provide students with an understanding of issues such as race, ethnicity, social class, gender, sexuality, and religion within the United States, and develop the student's ability to think critically about diverse socio-cultural perspectives.
    c. **World Cultures—3 units.** Courses in World Cultures provide students with a global perspective in a world where communication technologies, economic relationships, and the flow of people across national borders increasingly challenge national identities and create transnational cultures. Students can satisfy this requirement through coursework or through certified study abroad.
3. **Quantitative Literacy—at least 3 units.** The objective of this core literacy is to provide students with an understanding of quantitative reasoning and skills for evaluating claims and knowledge generated through quantitative methods.
4. **Scientific Literacy—at least 3 units.** The objective of this core literacy is to provide students with an understanding of the fundamental ways scientists approach problems and generate new knowledge, and an understanding of how scientific findings relate to other disciplines and to public policy.

Approved General Education Courses

Please note that you cannot claim GE credit for a course you completed *before* it was an approved GE course.

University of California – Davis
https://registrar-apps.ucdavis.edu/courses/search/index.cfm
General Education Search Tool

You can use this tool to search all current and former UC Davis General Education courses by selecting one or more of the GE attributes. If you need GE search results for courses in a specific term or quarter, see the General Education Search Tool – By Term.

Your search can be filtered by college and level. If no filters are chosen, the search may take several minutes to finish. Search results include the course code, title, units, GE details and attributes, and any course prerequisites. To see if the GE attributes have changed, or will change in the future, select **view** in the GE Details column. Your search results can be saved as Adobe PDF or Microsoft Excel formats.

Future term course information is available the week before Pass 1 registration begins for that term. For registration dates, see the Academic Calendar.

> For information about former GE course applicability, see the appropriate catalog version. For information about new or revised GE course applicability, see the General Catalog.

Be sure to review with your advisor all GE requirements, Notes and Additional Conditions before choosing courses to fulfill your General Education unit requirements, especially those related to Entry Level Writing and English Composition requirements.

Abbreviation Key

				New GE Attributes										
				Topical Breadth			Core Literacies							
Course	Title	Units	GE Details	AH	SE	SS	ACGH	DD	OL	QL	SL	VL	WC	WE
ABT 015	Wood Prop & Fabrication	2.0	view		SE				OL	QL		VL		
ABT 016	Metal Prop & Fabrication	2.0	view		SE					QL		VL		
ABT 017	Plastic Prop & Fabicatn	2.0	view		SE					QL		VL		
ABT 049	Field Eqpt Operation	2.0	view		SE					QL		VL		

ABT 052	Field Equipment Welding	2.0	view	SE					QL		VL			
ABT 060	Unmanned Aerial Systems	4.0		SE					QL		VL			
ABT 101	Engine Technology	3.0	view	SE					QL		VL			
ABT 110L	Food Engr Lab	2.0	view	SE					QL		VL			WE
ABT 142	Eqpt/Tech for Small Farm	2.0	view	SE					QL		VL			
ABT 161	Water Qual Aquaculture	3.0	view	SE					QL	SL	VL			
ABT 163	Aquaculture Sys Engr	3.0	view	SE				OL	QL	SL	VL			WE
ABT 165	Irrig for Urban Envir	3.0	view	SE					QL		VL			
ABT 182	Environ GIS Application	4.0	view	SE					QL	SL	VL			
ANS 015	Intro Horse Husbandry	3.0	view	SE					QL		VL			
ANS 018	Introductory Aquaculture	4.0	view	SE				OL	QL	SL	VL			WE
ANS 042	Companion Animals	4.0	view	SE					QL	SL				WE
ANS 106	Animal Behavior Lab	3.0	view	SE					QL	SL				WE
ANS 112	Sustainable Animal Agric	3.0	view	SE	SS			OL	QL					

ANS 115	Horse Production	4.0	view	SE					QL	SL			WE
ANS 128	Agr Applications of LP	4.0	view	SE					QL	SL			
ANS 136	Tech of Fish Culture	3.0	view	SE					QL	SL	VL		WE
ANS 136A	Fish Culture Techniques	2.0	view	SE					QL	SL	VL		WE
ANS 136B	Avian Growth Laboratory	2.0	view	SE					QL	SL	VL		WE
ANS 137	Avian Growth Laboratory	3.0	view	SE					QL	SL	VL		WE
ANS 142	Companion Animal Care	4.0	view	SE				OL	QL	SL	VL		WE
ANS 144	Beef Catl & Sheep Prod	4.0	view	SE				OL	QL	SL	VL		WE
ANS 146	Dairy Cattle Production	5.0	view	SE				OL	QL	SL	VL		WE
ANS 148	Enterprise Analy An Indu	4.0	view		SS			OL	QL				WE
ANT 105	Evol Societies Cultures	4.0	view		SS				QL			WC	WE
ANT 154B	Primate Evol Ecology	5.0	view	SE					QL				WE
ANT 154BN	Primate Evol Ecology	5.0	view	SE					QL		VL		WE
ANT 154C	Primate Behavior/Methods	2.0	view	SE					QL	SL			

ANT 155	Primate Conservation Bio	4.0	view						QL	SL				
ANT 157L	Adv Human Genetics Lab	4.0	view	SE					QL					
ANT 159	Primate Epidemiology	4.0	view	SE	SS				QL	SL	VL			
ANT 182	Archaeometry	4.0	view	SE					QL		VL			WE
ANT 183	Archeological Analysis	4.0	view	SE					QL					WE
ARE 100A	Intermed Microeconomics	4.0	view		SS				QL					
ARE 100B	Intermed Microeconomics	4.0	view		SS				QL					
ARE 106	Econometrics	4.0	view		SS				QL					
ARE 155	Oper Res & Mgmt Sci	4.0	view		SS				QL					
ARE 156	Intro Math Econ	4.0	view		SS				QL					
ARE 171A	Financial Management	4.0	view		SS				QL					
ARE 171B	Financial Management	4.0	view		SS				QL					
ARE 194HA	Special Study/Honors Stu	4.0	view		SS				QL					WE
ARE 194HB	Special Study/Honors Stu	4.0	view		SS				QL					WE

ATM 005	Global Climate Change	3.0	view	SE					QL	SL	VL	
ATM 010	Severe & Unusual Weather	3.0	view	SE					QL	SL	VL	
ATM 060	Intr Atmospheric Science	4.0	view	SE					QL		VL	
ATM 110	Weather Observ & Analy	4.0	view	SE				OL	QL		VL	
ATM 111	Weather Analysis Predict	3.0	view	SE					QL		VL	
ATM 111L	Weathr Analysis Pred Lab	2.0	view	SE				OL	QL		VL	
ATM 111LY	Weather Anlys & Pred Lab	2.0	view	SE				OL	QL		VL	
ATM 116	Modern Climate Change	3.0	view	SE					QL	SL	VL	
ATM 120	Thermodyn & Cloud Physic	4.0	view	SE					QL		VL	
ATM 121A	Atmos Dynamics	4.0	view	SE					QL			
ATM 121B	Atmospheric Dynamic	4.0	view	SE					QL			
ATM 124	Meteor Instr & Observ	3.0	view	SE					QL	SL	VL	
ATM 128	Rad & Sat Meteorology	4.0	view	SE					QL		VL	
ATM 133	Biometeorology	4.0	view	SE					QL	SL	VL	

ATM 149	Air Pollution	4.0	view	SE				QL	SL			
ATM 149N	Air Pollution	4.0		SE				QL	SL			
ATM 158	Boundary-Layer Met	4.0	view	SE				QL		VL		
ATM 160	Intro Atmospheric Chem	4.0	view	SE				QL	SL	VL		
AVS 150	Nutrition of Birds	1.0	view	SE				QL				
BIM 020	Fund of Bioengineering	4.0	view	SE				QL		VL		
BIM 106	Biotransport Phenomena	4.0	view	SE				QL	SL	VL		
BIM 140	Protein Engineering	4.0	view	SE				QL	SL	VL		
BIM 141	Cell & Tissue Mechanics	4.0	view	SE				QL		VL		
BIM 161A	Biomolecular Engineering	4.0	view	SE				QL				
BIM 161L	Biomolecular Eng Lab	3.0	view	SE				QL	SL			
BIM 161S	Biomol Eng Brief	1.0	view	SE				QL				
BIM 162	Biophysics Molecule,Cell	4.0	view	SE				QL	SL			
BIM 163	Bioelec & Mech	4.0	view	SE				QL				

BIS 002B	Introduction to Biology	5.0	view	SE				QL	SL	VL		
BIS 002C	Introduction to Biology	5.0	view	SE			OL	QL	SL	VL		
BIS 023A	Genome Hunters	3.0	view	SE				QL				
BIS 023B	Genome Hunters	3.0	view	SE				QL		VL		
BIS 101	Genes & Gene Expression	4.0	view	SE				QL	SL			
BIS 102	Struc & Func Biomolecule	3.0	view	SE				QL				
BIS 102Q	Quant Biomolec Concepts	1.0	view	SE				QL				
BIS 105	Biomolecule & Metabolism	3.0	view	SE				QL				
BIS 122	Pop Biology & Ecology	3.0	view	SE			OL	QL	SL	VL		WE
BIS 124	Coastal Marine Research	6.0	view	SE			OL	QL		VL		WE
BIS 132	Intro Dyn Models Biology	4.0	view	SE				QL	SL	VL		WE
BIS 133	Collab Studies Math Bio	3.0	view	SE				QL	SL	VL		WE
BIS 134	Systems Biology	2.0	view	SE			OL	QL		VL		
BIS 181	Comparative Genomics	3.0	view	SE				QL	SL			

BIS 183	Functional Genomics	3.0	view		SE				QL		VL		
CDM 012	Media Computation	4.0		AH	SE				QL		VL		
CDM 177	Intro Game Programming	4.0	view	AH	SE				QL		VL		
CDM 178	Spec Tpcs Game Program	4.0	view	AH	SE				QL		VL		
CHE 002A	General Chemistry	5.0	view		SE				QL	SL			
CHE 002AH	Honors General Chem	5.0	view		SE				QL	SL			
CHE 002B	General Chemistry	5.0	view		SE				QL	SL			
CHE 002BH	Honors General Chem	5.0	view		SE				QL	SL			
CHE 002C	General Chemistry	5.0	view		SE				QL	SL			
CHE 002CH	Honors General Chem	5.0	view		SE				QL	SL			
CHE 003A	Gen Chem for Life Sci	5.0	view		SE				QL	SL			
CHE 003B	Gen Chem for Life Sci	5.0	view		SE				QL	SL			
CHE 003C	Gen Chem for Life Sci	5.0	view		SE				QL	SL			
CHE 004A	Chem for Phy Sci & Eng	5.0	view		SE				QL	SL			

CHE 004B	Chem for Phy Sci & Eng	5.0		SE					QL	SL			
CHE 004C	Chem for Phy Sci & Eng	5.0		SE					QL	SL			
CHE 105	Anly & Phys Chem Methods	4.0	view	SE					QL	SL			
CHE 110A	Phys Chem: Quantum Mech	4.0	view	SE					QL				
CHE 115	Instrumental Analysis	4.0	view	SE					QL				WE
CHE 125	Adv Methods Phys Chem	4.0	view	SE					QL				WE
CHI 040	Comparative Health	4.0	view	SE					QL				WE
CHI 040S	Comparative Health	4.0	view	SE					QL			WC	WE
CHI 140A	Quantitative Methods I	4.0	view	SE		ACGH	DD		QL				
CMN 012Y	Data Visualization	4.0	view						QL		VL		
CMN 150V	Computational Soc Sci	4.0	view		SS				QL				
CMN 151	Simulating Comm Process	4.0	view		SS				QL				WE
CMN 152V	Soc Sci with Online Data	4.0	view		SS				QL	SL			
CRD 150	Methods Community Res	5.0	view		SS				QL	SL			

CRD 151	Community Field Research	5.0	view		SS	ACGH			QL				WE
CRD 156	Community Econ Develop	5.0	view		SS				QL				WE
EAD 108A	Optics I	4.0	view	SE					QL				
EAD 108B	Optics II	4.0	view	SE					QL				
EAD 115	Num Solutions Tech Prob	4.0	view	SE					QL				
EAD 165	Stat and Quantum Optics	4.0	view	SE					QL				
EAD 166	Lasers & Nonlin Opt	4.0	view	SE					QL				
EAD 167	Fourier Optics	4.0	view	SE					QL				
EAD 169	Opt Prop of Materials	4.0	view	SE					QL				
EAD 170	Optical Spectroscopy	4.0	view	SE					QL				
EAD 172	Opt Meth Bio Res	4.0	view	SE					QL				
EBS 001	Foundations Bio Sys Eng	4.0	view	SE				OL	QL	SL	VL		
EBS 075	Prop Mat Biol Sys	4.0	view	SE					QL	SL	VL		WE
EBS 103	Fluid Mech Fundamentals	4.0	view	SE					QL		VL		

EBS 114	Prin Field Machinery Des	3.0	view	SE					QL		VL		WE
EBS 115	Forest Engineering	3.0	view	SE					QL	SL	VL		
EBS 120	Power System Design	4.0	view	SE					QL	SL	VL		WE
EBS 125	Heat Transfer in Bio Sys	4.0	view	SE				OL	QL		VL		WE
EBS 127	Mass Transfer & Kinetics	4.0	view	SE					QL		VL		WE
EBS 128	Biomchanics & Ergonomics	4.0	view	SE					QL	SL	VL		WE
EBS 130	Modeling of Dynamic Proc	4.0	view	SE					QL	SL	VL		
EBS 135	Bioenvironmental Engr	4.0	view	SE					QL	SL	VL		WE
EBS 144	Groundwater Hydrology	4.0	view	SE					QL	SL	VL		WE
EBS 145	Irrig & Drain Sys	4.0	view	SE					QL	SL	VL		
EBS 161	Kin & Bioreactor Des	4.0	view	SE					QL		VL		
EBS 162	Industrial Bioprocessing	4.0	view	SE					QL	SL	VL		WE
EBS 165	Bioinstrument & Control	4.0	view	SE					QL	SL	VL		WE
EBS 170A	Engr Design & Prof Resp	3.0	view	SE				OL	QL	SL	VL		WE

EBS 170B	Engr Projects: Design	2.0	view	SE				OL	QL	SL	VL		WE
EBS 170BL	Engr Projects Design Lab	1.0	view	SE				OL	QL	SL	VL		WE
EBS 170C	Eng Projects Des Eval	1.0	view	SE				OL	QL	SL	VL		WE
EBS 170CL	Engr Proj Des Eval Lab	2.0	view	SE				OL	QL	SL	VL		WE
EBS 175	Rheology	3.0	view	SE					QL		VL		
ECH 005	Intro to Chem Eng	3.0	view	SE					QL				
ECH 060	CHE Eng Prob Solving	4.0	view	SE					QL				
ECH 141	CHMS Fluid Mechanics	4.0	view	SE					QL				
ECH 142	Heat Transfer	4.0	view	SE					QL				
ECH 155A	Chem Eng Lab	4.0	view	SE				OL	QL		VL		WE
ECH 155B	Chem Eng Lab	4.0	view	SE					QL		VL		WE
ECH 157	Process Dynamics	4.0	view	SE					QL				
ECH 158B	Separations & Unit Ops	4.0	view	SE					QL				
ECH 160	Biomanufacturing	3.0	view	SE					QL		VL		

ECH 161A	Biochem Engr Fund	4.0	view	SE					QL		VL		
ECH 161B	Bioseparations	4.0	view	SE					QL				
ECH 161C	Biotech Facility Design	4.0	view	SE	SS				QL	SL	VL		
ECH 161L	Bioprocess Engr Lab	4.0	view	SE					QL		VL		WE
ECI 016	Spatial Data Analysis	2.0	view	SE					QL				
ECI 114	Probabilistic Sys Anlys	4.0	view *	SE					QL				
ECI 130	Structural Analysis	4.0	view	SE					QL				
ECI 135	Struc Design: Concrete	4.0	view	SE					QL				
ECI 137	Constr Prin & Proj Mgmt	4.0	view	SE	SS				QL				
ECI 139	Adv Structural Mechanics	4.0	view	SE					QL				
ECI 142	Engineering Hydrology	4.0	view	SE					QL				
ECI 143	Green Engineering Design	4.0	view	SE	SS				QL	SL			
ECI 148B	Water Treatment	4.0	view	SE					QL		VL		WE
ECI 149	Air Pollution	4.0	view	SE					QL	SL			

ECI 149N	Air Pollution	4.0		SE					QL	SL			
ECI 153	Deterministic Opt & Desg	4.0	view	SE					QL	SL			
ECI 155	Water Res Engr Planning	4.0	view	SE	SS				QL	SL			WE
ECI 161	Trans Sys Operations	4.0	view	SE					QL				
ECI 178	Pavement Eng & Design	4.0		SE					QL	SL	VL		
ECM 005	Chem/Materials Analysis	3.0	view	SE					QL				
ECM 006	Computational Methods	4.0	view	SE					QL				
ECM 194HC	Honors Project Thesis	Var	view	SE					QL				
ECN 001A	Princ Of Microecon	4.0	view		SS	ACGH			QL				
ECN 001AV	Princ of Microeconomics	4.0	view		SS	ACGH			QL				
ECN 001AY	Princ of Microeconomics	4.0			SS	ACGH			QL				
ECN 001B	Princ Of Macroecon	4.0	view		SS	ACGH			QL				
ECN 001BV	Princ of Macroeconomics	4.0			SS	ACGH			QL				
ECN 138	Intl Public Econ	4.0			SS				QL				

ECS 010	Intro to Programming	4.0	view		SE					QL	SL			
ECS 012	Media Computation	4.0	view	AH	SE					QL		VL		
ECS 015	Intro to Computers	4.0	view		SE					QL				WE
ECS 017	Data, Logic, & Computing	4.0	view		SE					QL				
ECS 020	Discrete Math for CS	4.0	view		SE					QL				
ECS 030	Programming&Prob Solving	4.0	view		SE					QL				
ECS 060	Data Structures and Prog	4.0	view		SE					QL				
ECS 120	Theory Computation	4.0	view		SE					QL				
ECS 122B	Algorithm Design & Anlys	4.0	view		SE					QL				
ECS 127	Cryptography	4.0	view		SE					QL	SL			
ECS 132	Prob & Sta Model for CS	4.0	view		SE					QL				
EDU 114	Quan Meth In Ed Res	4.0	view							QL				
EDU 119	Use/Misuse Standard Test	4.0	view			SS				QL				
EDU 121	Intro Ed Policy Analysis	4.0	view			SS				QL				

EEC 100	Circuits II	5.0	view	SE					QL		VL		
EEC 147	MEMS	4.0	view	SE					QL				
EEC 150A	Intr Signals & Systems I	4.0	view	SE					QL				
EEC 150B	Signals & Systems II	4.0	view	SE					QL				
EME 107A	Experimental Methods	3.0	view	SE					QL		VL		
EME 107B	Experimental Methods	3.0	view	SE					QL		VL		WE
EMS 147	Prin Polymer Mat	3.0	view	SE					QL				
EMS 162	Struct Char Engr Matls	4.0	view	SE					QL				
EMS 164	Kinetics of Materials	4.0	view	SE					QL	SL	VL		
EMS 174	Mech Behavior of Matls	4.0	view	SE					QL	SL	VL		
EMS 182	Failure Analysis	4.0	view	SE					QL		VL		WE
ENG 020	Space: Explor & Envrmt	4.0	view	SE					QL	SL			
ENG 104	Mech of Materials	4.0	view	SE					QL				
ENG 106	Engin Economics	4.0	view	SE	SS				QL	SL	VL		

ENG 111	Electric Machinery	4.0	view	SE					QL	SL	VL		
ENG 121	Actuators and Systems	4.0	view	SE					QL		VL		WE
ENH 120	Container Media	3.0	view	SE					QL				WE
ENT 153L	Med Ent Lab	4.0		SE					QL	SL			WE
ENT 180A	Experimental Ecology	4.0	view	SE					QL				
ENT 180B	Experimental Ecology	4.0	view	SE					QL				WE
ESM 047	Water in the Tahoe Basin	2.0	view	SE					QL	SL			
ESM 100	Hydrologic Principles	4.0	view	SE					QL	SL			
ESM 121	Water Science&Management	3.0	view	SE					QL	SL			
ESM 125	River Conservation	4.0		SE				OL	QL	SL			
ESM 131	Air As A Resource	3.0	view	SE					QL	SL			
ESM 186	Environ Remote Sensing	5.0	view	SE					QL		VL		
ESM 186L	Env Remote Sensing Lab	2.0	view	SE					QL	SL	VL		

ESP 105	Evol Societies Cultures	4.0	view		SS				QL			WC	WE
ESP 110	Princ Environ Science	4.0	view	SE					QL	SL			
ESP 121	Population Ecology	4.0	view	SE					QL	SL			
ESP 150A	Phys & Chem Oceanography	4.0	view	SE					QL				
ESP 178	Appl Research Methods	4.0	view		SS				QL				
ETX 102A	Env Fate of Toxicants	4.0	view	SE					QL	SL	VL		WE
ETX 127	Stress and Development	10.0	view	SE				OL	QL	SL	VL		WE
ETX 135	Toxic Risk Assessment	3.0	view	SE					QL	SL	VL		
ETX 140	Genes & the Environment	3.0	view	SE					QL	SL			
ETX 146	Exposure Assessment	3.0	view	SE					QL	SL	VL		
ETX 180	Chem Tox of Metals	4.0		SE					QL	SL	VL		
EVE 010	Evol for Non-Biologists	3.0	view	SE					QL	SL			
EVE 020	Darwinian Medicine	3.0	view	SE					QL	SL			
EVE 100	Intro to Evolution	4.0	view	SE					QL	SL			

EVE 101	Introduction to Ecology	4.0	view	SE				OL	QL	SL	VL		
EVE 103	Phylogeny/Speciation	4.0	view	SE					QL	SL			
EVE 106	Mech Design Organisms	3.0	view	SE					QL		VL		WE
EVE 107	Animal Communication	4.0	view	SE					QL		VL		
EVE 110	Run Swim Fly	3.0	view	SE					QL		VL		WE
EVE 114	Exp Invertebrate Biology	3.0	view	SE					QL		VL		WE
EVE 141	Principles Systematics	3.0	view	SE				OL	QL	SL	VL		WE
EVE 147	Biogeography	4.0	view	SE					QL	SL	VL		WE
EVE 180A	Experimental Ecology	4.0	view	SE					QL				
EVE 180B	Experimental Ecology	4.0	view	SE					QL				WE
EVE 181	Animal-Plant Interaction	4.0	view	SE				OL	QL	SL			WE
EXB 103	Intro to Human Movement	4.0	view	SE					QL				
EXB 111	Environmental Effects	3.0	view	SE					QL				
EXB 126	Tissue Mechanics	3.0	view	SE					QL	SL			WE

EXB 148L	Fitness Testing Lab	1.0	view	SE					QL				
FPS 100	Prin Polymer Mat	3.0	view	SE					QL				
FPS 150	Polym Synth & React	3.0	view	SE				OL	QL	SL	VL		WE
FPS 161	Struct & Prop of Fibers	3.0	view	SE				OL	QL	SL	VL		WE
FPS 161L	Text Chem Analy Lab	1.0	view	SE				OL	QL	SL	VL		WE
FPS 180A	Intro Res Polymer Sci	2.0	view	SE					QL		VL		WE
FPS 180B	Intro Res Polymer Sci	2.0	view	SE					QL		VL		WE
FST 050	Food Preservation	3.0	view	SE					QL				
FST 100B	Food Properties	4.0	view	SE					QL		VL		
FST 101A	Food Chem Lab	3.0	view	SE					QL		VL		WE
FST 101B	Food Properties Lab	2.0	view *	SE					QL		VL		WE
FST 102B	Practical Malt & Brewing	4.0	view	SE					QL				
FST 103	Food Analysis	4.0	view	SE					QL				WE
FST 104	Food Microbiology	3.0	view	SE					QL		VL		

FST 104L	Food Micro Lab	4.0	view	SE				QL		VL		WE
FST 107	Food Sensory Science	4.0	view	SE				QL				WE
FST 109	Prin Of Qual Assurance	3.0	view	SE				QL				
FST 110	Food Processing	4.0	view	SE				QL		VL		
FST 110A	Food Proc Prncpl	3.0	view	SE				QL		VL		
FST 110B	Heat & Mass Transf Food	3.0	view	SE				QL				
FST 110L	Food Processing Lab	2.0	view	SE				QL	SL	VL		
FST 117	Dsgn & Anlys Sensory Sci	4.0	view	SE				QL				
FST 119	Chem & Tech of Dairy	4.0	view	SE				QL		VL		
FST 123	Intro Enzymology	3.0	view	SE				QL		VL		
FST 123L	Enzymology Lab	2.0	view	SE				QL		VL		WE
FST 127	Sensory Eval of Foods	4.0	view	SE				QL				WE
FST 151	Food Freezing	1.0	view	SE				QL				
FST 151Y	Food Freezing	1.0	view	SE				QL				

GDB 101	Epidemiology	4.0	view	SE					QL				
GEL 030	Fractals Chaos & Complex	3.0	view	SE					QL				
GEL 100	Extension & Translation	3.0	view	SE					QL				
GEL 146	Radiogenic Isotopes	3.0	view	SE					QL				
GEL 148	Isotope & Geochem Tracer	3.0	view	SE					QL				
GEL 150A	Phys & Chem Oceanography	4.0	view	SE					QL				
GEL 160	Geological Data Analysis	3.0	view	SE					QL				
GEL 161	Geophysical Field Method	3.0	view	SE					QL	SL			
GEL 162	Solid Earth Geophysics	3.0	view	SE					QL				
GEL 163	Planet Geol & Geophysics	3.0	view	SE					QL				
HDE 120	Res Method Human Develop	5.0	view		SS				QL				WE
HYD 047	Water in the Tahoe Basin	2.0	view	SE					QL	SL			
HYD 103N	Fluid Mech Fundamentals	4.0	view	SE					QL		VL		
HYD 124	Plant-Water Relations	4.0	view	SE					QL	SL			

HYD 141	Physical Hydrology	4.0	view		SE					QL	SL	VL		
HYD 142	Systems Hydrology	4.0	view		SE				OL	QL				
HYD 143	Ecohydrology	4.0	view		SE				OL	QL	SL			
HYD 144	Groundwater Hydrology	4.0	view		SE					QL	SL	VL		WE
HYD 145	Water Science and Design	4.0	view		SE					QL	SL			WE
HYD 151	Hydrology Field Methods	4.0	view		SE					QL	SL			
HYD 182	Environ GIS Application	4.0	view		SE					QL	SL	VL		
IAD 142	Eqpt/Tech for Small Farm	2.0	view		SE					QL		VL		
LIN 127	Text Proc & Corpus Ling	4.0	view	AH		SS				QL				
MAT 012	Precalculus	3.0	view		SE					QL	SL			
MAT 016A	Short Calculus	3.0	view		SE					QL	SL			
MAT 016B	Short Calculus	3.0	view		SE					QL	SL			
MAT 016C	Short Calculus	3.0	view		SE					QL	SL			
MAT 017A	Calculus for BioSci	4.0	view		SE					QL	SL			

MAT 017B	Calculus for BioSci	4.0	view	SE				QL	SL	
MAT 019A	Calculus & Data	4.0		SE				QL	SL	
MAT 019B	Calculus & Data	4.0		SE				QL	SL	
MAT 019C	Calculus & Data	4.0		SE				QL	SL	
MAT 021A	Calculus	4.0	view	SE				QL	SL	
MAT 021AH	Honors Calculus	4.0	view	SE				QL		
MAT 021B	Calculus	4.0	view	SE				QL		
MAT 021C	Calculus	4.0	view	SE				QL		
MAT 021D	Vector Analysis	4.0	view	SE				QL		
MAT 022A	Linear Algebra	3.0	view	SE				QL		
MAT 022AL	Linear Algebra Comp Lab	1.0	view	SE				QL		
MAT 022B	Differential Equations	3.0	view	SE				QL		
MAT 115A	Number Theory	4.0	view	SE				QL		
MAT 115B	Number Theory	4.0	view	SE				QL	SL	

MAT 118A	Partial Diff Equations	4.0	view	SE				QL			
MAT 118B	Partial Diff Eq	4.0	view	SE				QL			
MAT 118C	Partial Diff Eq	4.0	view	SE				QL			
MAT 119A	Ordinary Diff Equations	4.0	view	SE				QL			
MAT 119B	Ordinary Diff Equations	4.0	view	SE				QL			
MAT 124	Mathematical Biology	4.0	view	SE				QL			
MAT 128A	Numerical Analysis	4.0	view	SE				QL			
MAT 128B	Numerical Analysis	4.0	view	SE				QL			
MAT 128C	Numerical Analysis	4.0	view	SE				QL			
MAT 129	Fourier Analysis	4.0	view	SE				QL			
MAT 133	Mathematical Finance	4.0	view	SE				QL	SL		
MAT 145	Combinatorics	4.0	view	SE				QL			
MAT 148	Discrete Mathematics	4.0	view	SE				QL			
MAT 165	Mathematics & Computers	4.0	view	SE				QL			

MAT 167	Applied Linear Algebra	4.0	view	SE					QL				
MAT 168	Optimization	4.0	view	SE					QL				
MAT 189	Advanced Problem Solving	3.0	view	SE				OL	QL				WE
MCB 010	Intro To Human Heredity	4.0	view	SE					QL	SL			
MCB 115V	Introduction to Research	3.0		SE					QL	SL			
MCB 120L	Molec Biol & Biochem Lab	3.0	view	SE					QL		VL		WE
MCB 121	Adv Molecular Biology	3.0	view	SE					QL	SL			
MCB 123	Enzymes & Receptors	3.0	view	SE					QL				
MCB 140L	Cell Biology Laboratory	5.0	view	SE				OL	QL	SL	VL		
MCB 143	Cell & Molecular Biophysics	3.0	view	SE					QL				
MCB 160	Genetics Assoc Lect	3.0	view	SE					QL				WE
MCB 160L	Genetics Lab	5.0	view	SE					QL		VL		WE
MCB 161	Molecular Genetics	3.0		SE					QL	SL			
MCB 162	Human Genetics Genomics	3.0	view	SE					QL	SL			

MGT 012Y	Life's Financial Decns	3.0	view		SS				QL					
MIC 102	Intro Microbiology	3.0	view	SE					QL	SL				
MIC 104	General Microbiology	4.0	view	SE					QL					
MIC 117	Molec Genetic Circuits	4.0	view	SE					QL	SL				
NPB 014	Illusions and the Brain	3.0	view	SE					QL	SL				
NPB 100	Neurobiology	4.0	view	SE					QL					
NPB 106	Exp in Neuro Phy & Behav	3.0	view					OL	QL		VL		WE	
NPB 111C	Adv Systemic Lab	3.0	view						QL		VL		WE	
NPB 121	Reproductive Physiology	4.0	view						QL	SL				
NPB 139	Frontiers in Physiology	3.0	view	SE					QL					
NPB 141	Phys Adapt Mar Organ	3.0	view						QL		VL		WE	
NPB 159	Frontiers in Behavior	3.0	view	SE					QL					
NPB 169	Frontiers in Neurobiol	3.0	view						QL					
NUT 112	Nutritional Assessment	4.0	view	SE					QL					

NUT 113	Princ of Epi in Nutr	4.0	view		SE					QL				
NUT 115	Animal Nutrition	4.0	view		SE				OL	QL	SL	VL		WE
NUT 122	Ruminant Nutrition	4.0	view		SE					QL				
NUT 124	Fish Nutrition	3.0	view		SE					QL	SL			
NUT 127	Stress and Development	10.0	view		SE				OL	QL	SL	VL		WE
PHY 030	Fractals Chaos & Complex	3.0	view		SE					QL				
PLB 113	Plant Molec & Cell Biol	3.0	view							QL	SL	VL		
PLP 101	Epidemiology	4.0			SE					QL				
PLS 120	Applied Stat in Ag Sci	4.0	view							QL				
PLS 123	Plant & Crop Modeling	3.0	view							QL				
POL 011A	America Decides	4.0	view			SS	ACGH			QL				
POL 011AV	America Decides	4.0				SS	ACGH			QL				
POL 012Y	Data Visualization	4.0	view							QL		VL		
POL 051	Scientific Study Politic	4.0	view	AH	SE	SS				QL		VL		WE

POL 102	Urban Public Policy	4.0	view			SS	ACGH	DD		QL				WE
POL 107	Environ Pol & Admin	4.0	view			SS	ACGH			QL				WE
POL 108	Public Sector Policy	4.0	view			SS	ACGH			QL				WE
POL 109	Pub Pol & Gov Proc	4.0	view			SS	ACGH			QL				WE
POL 110	Strategy of Politics	4.0	view			SS				QL				WE
POL 114	Quant Anly Pol Data	4.0	view	AH	SE	SS				QL		VL		WE
POL 121	Scientific Study War	4.0	view			SS				QL				WE
POL 140A	Comp Electoral Systems	4.0	view			SS				QL				WE
POL 140D	When Institutions Fail	4.0	view			SS				QL				WE
POL 140E	Policy-Making Processes	4.0	view			SS				QL				WE
POL 140F	Exper in Social Change	4.0				SS				QL				WE
POL 160	Amer Pol Parties	4.0	view			SS	ACGH	DD		QL				WE
POL 175	Science, Technology	4.0	view			SS				QL				WE
POL 196E	Research Methods Seminar	4.0	view			SS				QL		VL		WE

PSC 012Y	Data Visualization	4.0	view						QL		VL			
PSC 041	Research Meth in Psych	4.0	view						QL					
PSC 103A	Stat Analys Psych Data	5.0	view						QL					
PSC 103B	Stat Analys Psych Data	5.0	view						QL					
PSC 104	Applied Psychrometrics	4.0	view						QL					
PSC 107	Quest & Survey Methods	4.0	view						QL					
PSC 120	Agent-Based Modeling	4.0	view						QL					
PSY 012U	Data Visualization	4.0							QL		VL			
SAF 165	Irrig for Urban Envir	3.0	view	SE					QL		VL			
SAS 018	GIS & Society	3.0	view	SE	SS				QL	SL	VL			
SAS 025	Global Climate Change	4.0	view	SE	SS			OL	QL	SL	VL		WE	
SAS 025V	Global Climate Change	4.0	view	SE	SS			OL	QL	SL	VL		WE	
SOC 012Y	Data Visualization	4.0	view						QL		VL			
SOC 046B	Int Social Research	5.0	view		SS				QL					

SOC 056	Intro to Social Stats	5.0	view						QL					
SOC 056Y	Intro to Social Stats	5.0							QL					
SOC 106	Intermed Soc Stat	5.0	view		SS				QL	SL				
SOC 170	Population	4.0	view		SS				QL					
SPH 103	Survey of HESPAM	3.0	view		SS				QL					
SSC 010	Soils in Our Environment	3.0	view	SE					QL	SL				
SSC 100	Principles Soil Sci	5.0	view	SE					QL	SL	VL			
SSC 102	Soil Chemistry	3.0	view	SE					QL	SL				
SSC 105	Field Studies of Soils	5.0	view	SE					QL	SL	VL		WE	
SSC 109	Sustainable Nutri Mangmt	4.0	view	SE				OL	QL	SL	VL		WE	
SSC 111	Soil Microbiology	4.0	view	SE					QL	SL			WE	
SSC 120	Soil Genesis	5.0	view	SE					QL	SL	VL			
STA 010	Statistical Thinking	4.0	view	SE					QL					
STA 012	Discrete Probabil	4.0	view	SE					QL					

STA 013	Elementary Statistics	4.0	view	SE				QL				
STA 013V	Elementary Statistics	4.0	view	SE				QL				
STA 013Y	Elementary Statistics	4.0	view	SE				QL				
STA 015A	Intro to Data Science I	4.0	view	SE				QL				
STA 015B	Intro to Data Science II	4.0	view	SE				QL		VL		
STA 015C	Intro to DataScience III	4.0	view	SE				QL				
STA 032	Gateway to Data Science	4.0	view *	SE				QL				
STA 035A	Stat Data Science I	4.0	view *	SE				QL				
STA 035B	Stat Data Science II	4.0	view *	SE				QL		VL		
STA 035C	Stat Data Science III	4.0	view *	SE				QL	SL			
STA 100	Applied Stat for Bio Sci	4.0	view *	SE				QL				
STA 101	Adv Stats for Bio Sci	4.0	view	SE				QL				
STA 102	Prob Modeling & Stat Inf	4.0	view	SE				QL	SL			
STA 103	Applied Statistics	4.0	view *	SE				QL				

STA 104	Nonparametric Statistics	4.0	view	SE				QL			
STA 108	Regression Analysis	4.0	view	SE				QL	SL		
STA 120	Probability For Eng	4.0	view	SE				QL			
STA 130A	Brief Math Statistics	4.0	view *	SE				QL			
STA 130B	Math Stat: Brief Course	4.0	view	SE				QL			
STA 131A	Probability Theory	4.0	view	SE				QL			
STA 133	Math Stat For Econ	4.0	view	SE				QL			
STA 135	Multivar Data Analysis	4.0	view	SE				QL			
STA 137	Applied Time Ser Analysis	4.0	view	SE				QL			
STA 138	Anly Categor Data	4.0	view	SE				QL			
STA 141	Statistical Computing	4.0	view	SE				QL			
STA 142	Reliability	4.0	view	SE				QL			
STA 144	Sampling Theory	4.0	view	SE				QL			
STA 145	Bayesian Stat Infer	4.0	view	SE				QL			

STS 101	Data & Society	4.0	view		SS				QL				
STS 112	Visualizing Society	4.0	view		SS		DD		QL				
TAE 020	Sustainable Energy Tech	4.0		SE					QL				
TAE 030	Comm & Computing Tech	4.0							QL		VL		
TAE 121	Controlled Environments	4.0							QL				WE
TXC 162L	Textile Fabric Lab	1.0	view	SE					QL		VL		WE
TXC 163L	Textile Color Lab	1.0	view	SE					QL	SL			WE
VEN 123L	Analysis Musts/Wines Lab	2.0	view	SE					QL		VL		WE
VEN 125	Wine Type & Sens Eval	2.0	view	SE					QL				
VEN 125L	Wine Sensory Evaluation	2.0	view	SE					QL		VL		WE
VEN 140	Distd Bev Technol	3.0	view	SE					QL				

University of California – LA

https://catalog.registrar.ucla.edu/browse/College%20and%20Schools/SchooloftheArtsandArchitecture/School-Requirements/Quantitative-Reasoning-Requirement

Quantitative Reasoning Requirement

Students must demonstrate basic skills in quantitative reasoning. The requirement may be satisfied by completing one approved UCLA course (see list below) for a C or Passed or better grade (a C– or Not Passed grade is not acceptable), or an equivalent transfer course.

The quantitative reasoning requirement may also be satisfied by achieving an SAT Mathematics section score of 620 or better, or an SAT Subject Test in Mathematics score of 550 or better, or an ACT mathematics exam score of 26 or better. Approved courses include

- Biostatistics 100
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

University of Florida

https://undergrad.aa.ufl.edu/general-education/gen-ed-program/program-requirements/

General Education Program Requirements

All undergraduate students (except those transferring to UF with an A.A. degree from a Florida public college or an A.A. certificate from a Florida public state university) are required to complete UF's general education requirement to graduate.

Subject Area	State Core	Gen Ed Courses	Totals
Biological and Physical Sciences[1]	3	3	6
Composition	3	3	6
Humanities[1]	3	3	6
Social & Behavioral Science[1]	3	3	6
Mathematics	3	3	6
Additional Required Gen Ed Coursework (Humanities, Social Science, or Natural Science)[2]		6	6
OVERALL TOTALS	15	21	36

[1]To complete General Education, student must select a General Education course in the "Humanities" that features the "UF Quest 1" subject area for 3 credits, a General Education course in the "Social and Behavioral Science" or "Natural Science" that features the "UF Quest 2" subject area for 3 credits, and a General Education course that features the "International" subject area for 3 credits.

[2]Majors that feature extensive use of these subject areas may require a student to complete all 6 "Additional Required Gen Ed Coursework" credits in a particular subject area. See the Major Model Semester Plan for details.

*All general education courses are identified by letter in the course descriptions section of the University of Florida catalog. The subject area letter designations appear at the end of the course description. For example: PHI 2010 Introduction to Philosophy fulfills three credits in the Humanities (H) area.

The schedule of courses also includes a list of all courses that fulfill each Gen Ed subject area. In addition, course listings in every schedule identify whether a course section satisfies Gen Ed credit (refer to the G.E. column).

** Three credits must be from a general education mathematics course with a prefix of MAC, MAP, MAS, MGF or MHF (a.k.a., 'pure math').

*** Required of all students entering Fall 2020 or after. Students who entered Fall 2019 or earlier may satisfy this requirement with "What is the Good Life".

**** Some C, H, P, B and S general education courses carry the international (N) designation. The international (N) designation can be assigned only to courses with the former designations. The general education program requires the completion of a 3-credit courses with the international (N) designation.

Important Considerations

- A minimum grade of C is required for general education credit. Courses intended to satisfy the general education requirement cannot be taken S-U.
- Some majors require or recommend specific general education courses.
- Certain classes are approved to count for multiple general education program areas. Students can count a general education course toward one area except (N) credits, which must be earned concurrently with another area. For example, a course designated as HN can count toward both the H and N requirements, but a course designated CH can count only as C or H.
- Study abroad courses can fulfill international credit, in addition to fulfilling credit in other subject areas. Study abroad must be approved in advance by an academic advisor and the UF International Center.

Successful completion of these requirements will result in the student learning outcomes.

Selecting General Education Courses
Students can take Gen Ed courses at the 1000-4000 levels. First-year students generally take introductory (1000/2000-level) courses. If a student has the academic background and the interest they may take more advanced courses, but they should first check the course prerequisites and/or consult an academic advisor.

University of Florida
https://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext
State Core Gen Ed Mathematics Courses

All are pure math except STA 2023.

MAC 1105	Basic College Algebra	3
MAC 1140	Precalculus Algebra	3
MAC 1147	Precalculus Algebra and Trigonometry	4
MAC 2233	Survey of Calculus 1	3
MAC 2311	Analytic Geometry and Calculus 1	4
MAC 2312	Analytic Geometry and Calculus 2	4
MGF 1106	Mathematics for Liberal Arts Majors 1	3
MGF 1107	Mathematics for Liberal Arts Majors 2	3
STA 2023	Introduction to Statistics 1	3

University of Illinois

http://catalog.illinois.edu/general-information/degree-general-education-requirements/
Degree and General Education Requirements

General Education Requirements
The University of Illinois Urbana-Champaign requires that all undergraduate students take General Education - or "Gen Ed" - courses to gain and use broad knowledge beyond the specialized learning they will do in a major field of study. These Gen Ed requirements cover the kinds of knowledge all students should have: the humanities and arts, social and behavioral sciences, natural sciences and technology, quantitative reasoning, composition/writing, and cultural studies.

General Education courses at Illinois are mindful of our students' diverse backgrounds, needs, and interests, and are an essential component of the transformative learning that prepares our graduates to become alumni who make a significant societal impact. These courses build students' abilities to think critically, solve problems, generate new ideas and create knowledge, make connections between academic disciplines, respect and understand differences, and develop as citizens and leaders.

General Education at Illinois is more than a set of required courses; it is a gateway into the Illinois experience.

Courses are noted as fulfilling one or more of the following categories:

- Composition I
- Advanced Composition
- Humanities and the Arts: Literature & the Arts or Historical & Philosophical Perspectives
- Natural Sciences and Technology: Life Science or Physical Science
- Quantitative Reasoning
- Social and Behavioral Sciences
- Cultural Studies: Western/Comparative Cultures, Non-Western Cultures, and US Minority Cultures

For a list of current courses approved for General Education credit, please visit the Course Explorer.

University of Illinois
https://provost.illinois.edu/assessment/learning-outcomes-assessment/general-education-assessment/quantitative-reasoning/quantitative-reasoning-i/
Quantitative Reasoning I Learning Outcomes

During the Spring 2019 General Education Assemblies for Learning Outcomes, faculty groups began to develop learning outcomes for the Quantitative Reasoning I Requirement. Then, smaller Working Groups(link opens in new window) from these Assemblies along with students and advisors worked together to digest the information from the larger group and to create draft learning outcomes for Quantitative Reasoning I (see below).

We invite feedback from the campus community on these outcomes.

After taking a course in **Quantitative Reasoning I**, students will be able to:

1. Identify abstract and relevant information to formulate an understanding of and clearly define and state the problem. (C-SLOs 1 & 2)
2. Construct or select and execute a logically appropriate process for solving the problem. (C-SLOs 1 & 2)
3. Formulate a conclusion and assess/justify its validity. (C-SLOs 1 & 2)
4. Interpret and communicate results broadly. (C-SLO 3)
5. Recognize patterns, transfer knowledge or integrate abstract/critical thinking with other problems or disciplines. (C-SLO 2)

University of Illinois
https://courses.illinois.edu/gened/2024/fall/QR
Quantitative Reasoning

If you entered college as a freshman between **Fall 1993 and Summer 2002,** you need to complete a Quantitative Reasoning I (QR1) course in order to graduate. To complete the QRI requirements you must take one course listed as QR1 from the list below.

If you entered college as a freshman in **Fall 2002** or later, you must complete both Quantitative Reasoning I (QR1) and Quantitative Reasoning II (QR2) courses in order to graduate. To complete the QR1 requirement you must take one course listed as QR1 from the list below. To complete the QR2 requirement you must take a second course from the list below - **either a second QR1 or a QR2.**

Effective for entering freshmen in Fall 2004, all courses on this list are approved for General Education credit on a campus wide basis. However individual Colleges or curricula may require specific courses or course categories. Students should consult their advisors about selecting the general education courses which best fit their programs of study.

Courses are added as they are approved.

COURSE	✓	TITLE	QR
ACE 262	✓	Applied Statistical Methods and Data Analytics I	QR1
ADV 200	✓	Data Literacy	QR1
ASTR 121	✓	Solar System and Worlds Beyond	QR2
ASTR 122	✓	Stars and Galaxies	QR2
ATMS 120	✓	Severe and Hazardous Weather	QR2
ATMS 202		General Physical Climate	QR2
CPSC 241		Intro to Applied Statistics	QR1
CS 101	✓	Intro Computing: Engrg & Sci	QR2
CS 105	✓	Intro Computing: Non-Tech	QR1
CS 107	✓	Data Science Discovery	QR1
CS 124	✓	Introduction to Computer Science I	QR1
CS 125		Introduction to Computer Science	QR1
CS 128	✓	Introduction to Computer Science II	QR2
CS 225	✓	Data Structures	QR2
ECE 101	✓	Exploring Digital Info Technol	QR2
ECON 202	✓	Economic Statistics I	QR1

COURSE	✓	TITLE	QR
ENVS 101		Introduction to Energy Sources	QR2
EPSY 280		Elements of Statistics	QR1
ESE 120	✓	Severe and Hazardous Weather	QR2
ESE 380	✓	Geographic Information Systems II	QR2
GEOL 350		Volcanoes	QR2
GGIS 280	✓	Intro to Social Statistics	QR1
GGIS 371		Spatial Analysis	QR2
GGIS 380	✓	Geographic Information Systems II	QR2
GLBL 200		Foundations of Research	QR2
HDFS 330	✓	Statistical Reasoning for Everyday Life	QR2
HK 201	✓	Health Sciences Research Methods	QR2
HK 207	✓	Introduction to Epidemiology	QR1
HK 209	✓	Introduction to Biostatistics and Health Data Analysis	QR1
HK 416	✓	Applied Health Data Analysis	QR2
HK 466	✓	Measure & Eval in Kinesiology	QR2
IS 107	✓	Data Science Discovery	QR1

COURSE	✓	TITLE	QR
IS 145	✓	Mapping Inequalities	QR2
IS 203	✓	Analytical Foundations for Information Problems	QR2
IS 229	✓	Web Design Fundamentals	QR1
IS 305	✓	Programming for Information Problems II	QR1
JOUR 451	✓	Research Methods in Journalism	QR2
MATH 103	✓	Theory of Arithmetic	QR1
MATH 115	✓	Preparation for Calculus	QR1
MATH 117		Elementary Mathematics	QR1
MATH 119	✓	Ideas in Geometry	QR1
MATH 124	✓	Finite Mathematics	QR1
MATH 181		A Mathematical World	QR1
MATH 213	✓	Basic Discrete Mathematics	QR2
MATH 220	✓	Calculus	QR1
MATH 221	✓	Calculus I	QR1
MATH 231	✓	Calculus II	QR1
MATH 234		Calculus for Business I	QR1
MATH 241	✓	Calculus III	QR2

COURSE	✓	TITLE	QR
MATH 285	✓	Intro Differential Equations	QR2
MUS 339		Princpls and Technqs in Mus Ed	QR2
NPRE 101		Introduction to Energy Sources	QR2
NRES 105		Climate Change Impacts on Ecological Systems	QR2
PHIL 103	✓	Logic and Reasoning QR II	QR2
PHIL 202	✓	Symbolic Logic	QR1
PHIL 454		Advanced Symbolic Logic	QR2
PHYS 101	✓	College Physics: Mech & Heat	QR2
PHYS 102	✓	College Physics: E&M & Modern	QR2
PHYS 140		How Things Work	QR2
PHYS 150		Physics of Societal Issues	QR2
PHYS 211	✓	University Physics: Mechanics	QR2
PHYS 212	✓	University Physics: Elec & Mag	QR2
PSYC 235	✓	Intro to Statistics	QR1
PSYC 301		Psychological Statistics	QR1
RST 370	✓	Research Methods & Analysis	QR2
SOC 280	✓	Intro to Social Statistics	QR1
SOC 380	✓	Social Research Methods	QR2

COURSE	✓	TITLE	QR
SOC 488		Demographic Analysis	QR2
SOCW 225	✓	Social Work Statistics	QR1
STAT 100	✓	Statistics	QR1
STAT 107	✓	Data Science Discovery	QR1
STAT 200	✓	Statistical Analysis	QR1
STAT 207	✓	Data Science Exploration	QR2
STAT 212	✓	Biostatistics	QR1
UP 116		Urban Informatics I	QR1
UP 316		Urban Informatics II	QR2

University of Iowa

https://catalog.registrar.uiowa.edu/academics-iowa/general-education-requirements/

General Education Requirements

Undergraduate general education requirements vary based on the college. This table is intended to be used for comparative purposes between colleges. Some colleges and some programs of study do not have undergraduate general education requirements; others have general education requirements specific to an individual program of study, like those in Carver College of Medicine. Check each program of study's page in the catalog for program-specific requirements. World language graduation requirements by college can be found following this table.

General Education Requirement	College of Liberal Arts and Sciences	College of Public Health	Tippie College of Business	College of Education	College of Nursing	University College
Quantitative or Formal Reasoning	X	X		X		X

University of Iowa – College of Liberal Arts and Sciences
https://catalog.registrar.uiowa.edu/liberal-arts-sciences/general-education-program/#qfr
GE CLAS Core

Quantitative or Formal Reasoning

Courses in the Quantitative or Formal Reasoning area help develop analytical skills through the practice of quantitative or formal symbolic reasoning. Courses focus on presentation and evaluation of evidence and argument; understanding the use and misuse of data; and organization of information in quantitative or other formal symbolic systems, including those used in computer science, linguistics, mathematics, philosophy, and statistics.

All students must complete at least 3 s.h. of coursework in the Quantitative or Formal Reasoning area. Students also may fulfill this GE CLAS Core requirement by completing a course that lists an approved GE CLAS Core course as a prerequisite. The following courses are approved for the area.

Course #	Title	Hours
COMM:1117	Advocacy and Argument	3
CPH:1600	Public Health Science: Inquiry and Investigation in Public Health	3
CS:1020	Principles of Computing	3
CS:1110	Introduction to Computer Science	3
CS:1210	Computer Science I: Fundamentals	4
GEOG:1030	Our Digital Earth	3
LING:1050	Language and Formal Reasoning	3
MATH:1020	Elementary Functions	4
MATH:1120	Logic of Arithmetic	4
MATH:1260	PokeMath: The Mathematics of Pokemon Go	3
MATH:1340	Mathematics for Business	4
MATH:1350	Quantitative Reasoning for Business	4
MATH:1440	Mathematics for the Biological Sciences	4
MATH:1460	Calculus for the Biological Sciences	4
MATH:1550	Engineering Mathematics I: Single Variable Calculus	4
MATH:1850	Calculus I	4

Course #	Title	Hours
PHIL:1636	Principles of Reasoning: Argument and Debate	3
POLI:1050/ RELS:1050	Big Ideas: Introduction to Information, Society, and Culture	3
POLI:1700	Introduction to Political Analysis	3
PSY:2811	Research Methods and Data Analysis in Psychology I	3
STAT:1010	Statistics and Society	3
STAT:1015 /DATA:1015	Introduction to Data Science	3
STAT:1020/ PSQF:1020	Elementary Statistics and Inference	3
STAT:1030	Statistics for Business	4
STAT:2010	Statistical Methods and Computing	3

University of Maryland

https://academiccatalog.umd.edu/undergraduate/general-education-requirements/#requirementstext

Elements of the General Education Program

The General Education program is comprised of courses that build foundational skills (Fundamental Studies), courses that expand the breadth of your education (Distributive Studies) and courses that explore and study human, societal and cultural differences (Diversity). At least two of your Distributive Studies courses will delve in to a "Big Question" as seen through the lens of a particular academic discipline (Big Question).

Fundamental Studies

Master the skills.

The Fundamental Studies portion of the General Education program consists of 5 courses (nominally 15 credits), with one course in each of the following areas:

- Academic Writing[1]
- Analytic Reasoning
- Mathematics[1]
- Oral Communication
- Professional Writing

Mathematics

The goal of the Mathematics requirement is to convey the power of mathematics, demonstrated by the variety of problems that can be modeled and solved by quantitative means. Ability in mathematics is a critical measure of how well students are prepared to meet the challenges they will face in their lives beyond school.[1]

[1]These course must be attempted by 30 credits and successfully completed by 60 credits.

University of Maryland
https://gened.umd.edu/students/four-categories/fundamental-studies
Fundamental Studies

15 credits / 5 courses

Fundamental Studies courses ensure that students have the basic skills in written and oral communication, in mathematical analysis, and in critical thinking that are important to their success across the curriculum and in their professional lives.

- Academic Writing FSAW = 3 credits
- Professional Writing FSPW = 3 credits
- Oral Communication FSOC = 3 credits
- Math FSMA = 3 credits
- Analytic Reasoning FSAR = 3 credits

Mathematics

The goal of the Mathematics requirement is to convey the power of mathematics, demonstrated by the variety of problems that can be modeled and solved by quantitative means. Ability in mathematics is a critical measure of how well students are prepared to meet the challenges they will face in their lives beyond school.

The Mathematics requirement is satisfied by passing one in a suite of courses at the level of pre-calculus — courses that include "Elementary Mathematical Models," "Introduction to Probability," college algebra or pre-calculus, or statistics and probability. Scores on AP and similar exams provide exemption from the Mathematics requirement. Refer to the Undergraduate Catalog for exemption information. **This is a three-credit, one-course requirement.**

Mathematics needs to be attempted by 30 credits.

University of Maryland
https://app.testudo.umd.edu/soc/gen-ed/202408/FSMA
Schedule of Classes Fall 2024

DATA 100 / STAT 100	Elementary Statistics and Probability	Credits: 3	**Prerequisite:** MATH MATH110, MATH112, MATH113, or MATH115;

			or permission of CMNS-Mathematics department; or must have math eligibility of STAT100 or higher and math eligibility is based on the Math Placement Exam or the successful completion of Math 003 with appropriate eligibility. **Restriction:** Must not have completed MATH111; or must not have completed any STAT course with a prerequisite of MATH141.
MATH107 (formerly MATH 110 and MATH 111)	Introduction to Math Modeling and Probability	Credits: 3	**Prerequisite:** Must have math eligibility of MATH107 or higher; and math eligibility is based on Math Placement Exam or successful completion of MATH003 with appropriate eligibility. **Restriction:** Not open to students majoring in mathematics, engineering, business, life sciences, and the physical sciences; must not have completed STAT100, MATH113, MATH120, MATH135, MATH136 or MATH140 with a C- or better; must not have completed any MATH or STAT course with a prerequisite of MATH120, MATH136, or MATH140.
MATH113	College Algebra and Trigonometry	Credits: 3	**Prerequisite:** Must have math eligibility of MATH113 or higher; and math eligibility is based

			on the Math Placement Exam or the successful completion of MATH 003 with appropriate eligibility. **Restriction:** Must not have completed MATH115, MATH120, MATH135, MATH136 or MATH140 with a grade of C- or higher; and must not have completed any course with a prerequisite of MATH120, MATH130, MATH136, or MATH140.
MATH115	Precalculus	Credits: 3	**Prerequisite:** Must have math eligibility of MATH115 or higher; and math eligibility is based on the Math Placement Exam or the successful completion of MATH003 with appropriate eligibility. Or MATH113. **Restriction:** Must not have completed MATH140 with a grade of C- or better; and must not have completed any MATH or STAT course with a prerequisite of MATH140 or MATH141.
MATH120 (formerly MATH 220)	Elementary Calculus I	Credits: 3	**Prerequisite:** 1 course with a minimum grade of C- from (MATH113, MATH115). Or must have math eligibility of MATH120 or higher; and math eligibility is based on the Math Placement Test. **Restriction:** Not open to students majoring in mathematics, engineering, the biological sciences,

			biochemistry, chemistry, or the physical sciences; Must not have completed MATH130, MATH136 or MATH140 with a grade of C- or higher.
MATH135	Discrete Mathematics for Life Sciences	Credits: 4	**Prerequisite:** Minimum grade of C- in MATH113 or MATH115; or must have math eligibility of MATH120 or higher; and math eligibility is based on the Math Placement Test. **Restriction:** Must be in the Biological Sciences or Neuroscience major; and not open to students majoring in mathematics, engineering, or the physical sciences.
MATH140	Calculus I	Credits: 4	**Prerequisite:** Minimum grade of C- in MATH115.
MATH140H	Calculus I	Credits: 4	**Prerequisite:** Minimum grade of C- in MATH115.

Michigan State University

https://reg.msu.edu/AcademicPrograms/Print.aspx?Section=282

Undergraduate Education

Mathematics Requirements

The university Mathematics requirement ensures that all students build a foundation of quantitative literacy. Each student must complete the university Mathematics requirement by fulfilling one of the options below:

1. Complete one of the following:
   a. Mathematics 101 and 102.
   b. Mathematics 103 or (Mathematics 103A and 103B) and Mathematics 101.
   c. Mathematics 103 or (Mathematics 103A and 103B) and Mathematics 102.
   Students who waive Mathematics 103 via the Mathematics Placement Exam need only complete one course from 1.a. to fulfill the University Mathematics requirement.
2. Complete both of the following:
   a. Mathematics 103 or (Mathematics 103A and 103B) or Mathematics 101 or 102; and

b. Statistics and Probability 200 or 201
Students who place directly into Statistics and Probability 200 or 201 need only to complete one course from 2.b. to fulfill the university Mathematics requirement.

3. Complete both of the following:
   a. Mathematics 103 or (Mathematics 103A and 103B); and
   b. One of the following courses: Mathematics 114, 124, 132, 152H, or 201.
   Students who place into any course in 3.b. via the Mathematics Placement Exam need only complete the course in 3.b. to fulfill the university Mathematics requirement.
4. Complete one of the following:
   a. Mathematics 116 or Lyman Briggs 117.
5. Waiver through a *proctored* Mathematics Placement Exam yielding a score resulting in placement in Mathematics 132 (calculus). For additional information, refer to the statement on *Academic Placement Tests – Mathematics (Algebra)* in the *Undergraduate Education* section of this catalog.

Students who transfer one of the following: Mathematics 112, 114, or 201; or Statistics and Probability 200 or 201 alone, with no other mathematics course, must take the Mathematics Placement Exam. Based on the score achieved, additional course work may be required to fulfill the university Mathematics requirement.

First-year students who have taken a College Board Advanced Placement Examination in Mathematics should consult the statement on *Academic Placement Tests*. Transfer students should consult the statement on *Transfer Student Admission*.

University of Minnesota

https://onestop.umn.edu/academics/undergraduate/lib-ed-requirements-overview/liberal-education-requirements

Liberal education requirements

The University of Minnesota and its faculty are committed to providing an education that invites you to investigate the world from new perspectives, learn new ways of thinking, and grow as an active citizen and lifelong learner. The University's liberal education requirements for all students are designed to be integrated throughout your four-year undergraduate experience. These courses provide you an opportunity to explore fields outside your major and complement your major curriculum with a multidisciplinary perspective.

- Search for courses that fulfill your liberal education requirements
- Reference the Class Search when planning your degree
- Look up a program to find degree requirements

Current liberal education requirements

If you were admitted to a degree program in fall 2010 or later, you will follow the revised liberal education requirements listed below. However, if you are a student admitted prior to

fall 2010, you will continue to follow the liberal education requirements prior to fall 2010 that were current when you were admitted.

The diversified core guides you through the "why" and "how" of different academic disciplines. These classes will equip you with a broad range of tools that can be used to approach problems in everyday life and work, and, ultimately, help you make a positive difference within communities, society, and the world. Students are required to satisfy all seven core requirements.

Requirements for students admitted after fall 2010	Required credits
Arts/Humanities	3 credits
Biological Sciences	4 credits; must include lab or field experience
Historical Perspectives	3 credits
Literature	3 credits
Mathematical Thinking	3 credits
Physical Sciences	4 credits; must include lab or field experience
Social Sciences	3 credits

University of Minnesota
https://www.myu.umn.edu/psp/psprd/EMPLOYEE/CAMP/c/SA_LEARNER_SERVICES.CLASS_SEARCH.GBL?
Mathematical Thinking Courses – Fall 2024

BA 2551	Business Statistics in R

CI 1806	College Algebra through Modeling
EPSY 1261	Understanding Data Stories through Visualization & Computing
MATH 1001	Basic and Applied Statistics
MATH 1031	Excursions in Mathematics
MATH 1042	College Algebra and Probability
MATH 1051	Mathematics of Design
MATH 1120	Precalculus I
MATH 1121	Precalculus I
MATH 1142	Precalculus II
MATH 1151	Short Calculus
MATH 1155	Precalculus II
MATH 1171	Intensive Precalculus
MATH 1241	Calculus I
MATH 1271	Calculus and Dynamical Systems in Biology
MATH 1371	Calculus I
MATH 1571H	CSE Calculus I
NURS 3710	Honors Calculus I
PHIL 1001	Statistics for Clinical Practice and Research
POL 3085	Introduction to Logic
POL 4087	Quantitative Analysis in Political Science
PSY 3801	Thinking Strategically About Politics
PSY 3801	Introduction to Psychological Measurement and Data Analysis
PSY 3801H	Honors Introduction to Psychological Measurement and Data Analysis
SOC 3811	Social Statistics
STAT 1001	Introduction to the Ideas of Statistics
STAT 1161	Introduction to Statistics
STAT 3011	Introduction to Statistical Analysis

University of North Carolina

https://catalog.unc.edu/undergraduate/ideas-in-action/

IDEAs in Action General Education Curriculum

Focus Capacities

Design your course of study! Students take one course for each of the nine Focus Capacity courses (3 credits each) plus a one-credit Empirical Investigation Lab. Focus Capacity courses introduce and reinforce a broad set of capacities for identifying, discovering, evaluating, and taking action upon ideas, knowledge, evidence, and argument.

Focus Capacities [1, 2, 3]	
1. Aesthetic and Interpretive Analysis	3
2. Creative Expression, Practice, and Production	3
3. Engagement with the Human Past	3
4. Ethical and Civic Values	3
5. Global Understanding and Engagement	3
6. Natural Scientific Investigation	3
7. Power, Difference, and Inequality	3
8. Quantitative Reasoning	3
9. Ways of Knowing	3
One Focus Capacity course must include or be associated with a one-credit lab:	
Empirical Investigation Lab	1
Total Hours	**28**

[1]A single course may be used to fulfill only one Focus Capacity requirement (not including lab).

[2]Students may fulfill up to five Focus Capacity courses (+Lab) using by-examination (BE) credit

[3]Every Focus Capacity course includes the following recurring capacities:

- Writing, totaling at least 10 pages in length or the intellectual equivalent
- Presenting material to the class, small groups, or the public through oral presentations, webpages, or other means that enable corroboration of fact and argument
- Collaborating in pairs or groups to learn, design, solve, create, build, research, or similar.

Disciplinary Distribution

All students must take at least one general education course (Focus Capacity, FY-Seminar/FY-Launch, High-Impact Experience, Research and Discovery, or Communication Beyond Carolina) in each of the three major divisions of the College of Arts and Sciences:

1. Humanities and fine arts
2. Mathematics and natural sciences
3. Social and behavioral sciences

Additional Focus Capacity Policies

- Courses used to satisfy Focus Capacity requirements may not be declared Pass/Low Pass/Fail.
- A Focus Capacity course may overlap with one or more of the following Gen Ed requirements: FY-Seminar/FY-Launch, Research and Discovery, High-Impact Experience, Communication Beyond Carolina.
- A Focus Capacity course may not double count with a Supplemental General Education course.
- The degree programs in Clinical Laboratory Science, Dental Hygiene, Nursing, and Radiologic Science require at least six of the nine Focus Capacities (plus lab). If a student pursues a different second major, then all nine Focus Capacities (plus Lab) are required.

University of North Carolina
https://catalog.unc.edu/undergraduate/ideas-in-action/quantitative/
Quantitative Reasoning

Quantitative Reasoning (FC-QUANT) is a required Focus Capacity course in the IDEAs in Action curriculum.

A single course may be used to fulfill only one Focus Capacity requirement (not including lab).

Approved Courses		
ANTH 520	Linguistic Phonetics	3
ANTH 680	Qualitative Methods in Archaeology	3
ASTR 100	Understanding the Universe	3
ASTR 101	Introduction to Astronomy: The Solar System[H]	3
ASTR 102	Introduction to Astronomy: Stars, Galaxies & Cosmology[H]	3
ASTR 103	Alien Life in the Universe	3
BIOL 75	First-Year Seminar: Biodiversity and Citizen Science[H]	3
BIOL 115	Reasoning with Data: Navigating a Quantitative World	3
BIOL 222	Introduction to Programming with Biological Data	3
BIOL 465	Global Diversity and Macroecology	3
BIOL 544L	Laboratory in Diseases of the Cytoskeleton	3
CLAR 270	Quantifying of the Past	3
COMP 110	Introduction to Programming and Data Science[H]	3
COMP 283	Discrete Structures[H]	3
COMP 550	Algorithms and Analysis	3
DATA 110	Introduction to Data Science	3

ECON 400	Introduction to Data Science and Econometrics[H]	4
ECON 445	Industrial Organization	3
ECON 470	Econometrics[H]	3
ECON 571	Advanced Econometrics	3
EMES 203	Data Analysis for Earth, Marine, and Environmental Sciences	3
ENEC 203	Introduction to Environmental Science Problem Solving	3
ENEC 465	Global Biodiversity and Macroecology	3
ENEC 473	Business and Finance Fundamentals for Change Makers	3
ENGL 482	Metadata, Mark-up, and Mapping: Understanding the Rhetoric of Digital Humanities	3
ENVR 135	Environment-ECUIPP Lab: Connecting with c communities through environmental research for Public Health	3
ENVR 335	Adv Environment-ECUIPP Lab: Connecting with Communities Through Environmental Research for PH Protection	3
GEOG 215	Introduction to Spatial Data Science	3
GEOG 370	Introduction to Geographic Information	3
GEOG 410	Modeling of Environmental Systems	3
GEOG 456	Geovisualizing Change	3
GEOG 477	Introduction to Remote Sensing of the Environment	3
GEOG 567	Geospatial Data Analysis with Google Earth Engine	3
GEOG 577	Advanced Remote Sensing	3
GEOG 591	Applied Issues in Geographic Information Systems	3
GEOG 592	Geographic Information Science Programming	3
LING 333	Human Language and Animal Communication Systens	3
LING 401	Language and Computers	3
LING 520	Linguistic Phonetics	3
LING 540	Mathematical Linguistics	3
LING 558	Ancient Mayan Hieroglyphs	3
MATH 115	Reasoning with Data: Navigating a Quantitative World	3
MATH 116	Intuitive Calculus	3
MATH 117	Aspects of Finite Mathematics	3
MATH 118	Aspects of Modern Mathematics	3
MATH 119	Introduction to Mathematical Modeling	3
MATH 130	Precalculus Mathematics	3
MATH 152	Calculus for Business and Social Sciences	3

MATH 210	Mathematical Tools for Data Science	3
MATH 231	Calculus of Functions of One Variable I[H]	4
MATH 232	Calculus of Functions of One Variable II[H]	4
MATH 233	Calculus of Functions of Several Variables[H]	4
MATH 235	Mathematics for Data Science	4
MEJO 379	Advertising and Public Relations Research	3
MEJO 479	Market Intelligence[H]	3
MEJO 570	Data Driven Journalism	3
NAVS 301	Naval Ships Engineering Systems	3
NAVS 302	Naval Weapon Systems	3
NSCI 419	Behavioral Endocrinology	3
PHIL 105	How to Reason and Argue: An Introduction to Critical Thinking	3
PHIL 155	Truth and Proof: Introduction to Mathematical Logic[H]	3
PHIL 157	Logic and Decision Theory[H]	3
PHIL 251	Inductive Logic and the Scientific Method	3
PHIL 357	Induction, Probability, and Confirmation	3
PHIL 455	Symbolic Logic	3
PHIL 456	Advanced Symbolic Logic	3
PHYS 55	First-Year Seminar: Introduction to Mechatronics	4
PHYS 101	Basic Concepts of Physics	4
PHYS 114	General Physics I: For Students of the Life Sciences	4
PHYS 115	General Physics II: For Students of the Life Sciences	4
PHYS 118	Introductory Calculus-based Mechanics and Relativity[H]	4
PHYS 119	Introductory Calculus-based Electromagnetism and Quanta[H]	4
PHYS 231	Physical Computing[H]	4
PLAN 363	Personal Finance, Wealth Building, and Public Policy	3
PLAN 364	Personal Finance II: Investing and Public Policy	3
PLCY 460	Quantitative Analysis for Public Policy[H]	4
PLCY 505	Data Science for Public Policy and Decision Making	4
POLI 209	Analyzing Public Opinion[H]	3
POLI 281	Data in Politics I: An Introduction	3
POLI 287	Strategy and International Relations	3
POLI 288	Strategy and Politics	3
POLI 439	Analyzing European Public Opinion	3
PSYC 115	Reasoning with Data: Navigating a Quantitative World	3

PSYC 210	Statistical Principles of Psychological Research[H]	3
PSYC 535	Programming for Psychologists: Computational Tools for Psychological Research	3
PWAD 287	Strategy and International Relations	3
SOCI 180	Introduction to Global Population Health	3
SOCI 251	Research Methods	3
SOCI 252	Data Analysis	3
STOR 113	Decision Models for Business and Economics	3
STOR 115	Reasoning with Data: Navigating a Quantitative World	3
STOR 120	Foundations of Statistics and Data Science	4
STOR 151	Introduction to Data Analysis	3
STOR 155	Introduction to Data Models and Interference	3
STOR 215	Foundations of Decision Sciences	3
STOR 235	Mathematics for Data Science	4
STOR 305	Introduction to Decision Analytics	3
STOR 315	Discrete Mathematics for Data Science	4
STOR 320	Introduction to Data Science	4

[H]Honors version available. An honors course fulfills the same requirements as the nonhonors version of that course. Enrollment and GPA restrictions may apply.

Ohio State University – College of Arts and Sciences

https://math.osu.edu/undergrad/non-majors/ge-new-gen-mathqr-or-data-analysis-requirements

GE New (GEN) – Math/ QR or Data Analysis Requirements

The seven universal categories of the Foundations component of GE-N introduce students to academic disciplines and their modes of inquiry. All students are required to complete *one course* in each of the seven categories. The following degree requirements apply to students who began as a regularly enrolled student at Ohio State during ***Autumn term 2022 or later.***

NOTE: Your degree program may require a specific course to fulfill this requirement. Please confirm your program's curriculum through your academic advisor and/or running your degree audit.

Mathematical and Quantitative Reasoning or Data Analysis (3-5 credit hours)*

Students will be able to apply quantitative or logical reasoning and/or mathematical/ statistical methods to understand and solve problems and will be able to communicate their results.

- AEDECON 2005
- ANIMSCI 2260
- ASTRON 3350

• CHEM 2210, 2210H
• COMLDR 3537
• CSE 1111, 2111
• ECON 3400
• ENR 2000
• GEOG 2200.01, 2200.02
• HCS 2260
• INTSTDS 3400
• LING 2001, 2051, 3802, 2051H, 3802H
• MATH 1116, 1120, 1121, 1130, 1131, 1140, 1141, 1148, 1149, 1150, 1151, 1152, 1156, 1161.01, 1161.02, 1181H
• PHILOS 1500, 1501, 1520, 2500, 2500
• PHYSICS 3700
• POLITSC 3780, 4781, 3780H
• SOCIOL 3549, 3549
• STAT 1350.01, 1350.02, 1430.01, 1430.02, 1450.01, 1450.02, 2450.01, 2450.02, 2480.01, 2480.02, 3450.01, 3450.02, 3460, 3470.01, 3470.02, 4202, 5301, 5302, 1430H

**Mathematics 1060 and 1075 are remedial and do not count toward the CH minimum requirement for a degree*

Additional mathematics courses may be necessary to fulfill your major or pre-major requirements.

Ohio State University
https://classes.osu.edu/#/?q=&client=class-search-ui&p=1&class-attribute=ge2&sort=subject&gen-categories=GEN%20Foundation:%20Math%20%26%20Quant%20Reason%20(or%20Data%20Anyl)&campus=col&term=1248#top-nav
Math and Quantitative Reasoning Courses

AEDECON 2005	Data Analysis for Agribusiness and Applied Economics	3
ANIMSCI 2260	Data Analysis and Interpretation for Decision Making	3
ASTRON 3350	Methods of Astronomical Observation and Data Analysis	3
CHEM 2210	Analytical Chemistry I: Quantitative Analysis	5
COMLDR 3537	Data Analysis in the Applied Sciences	3
CSE 1111	Introduction to Computer-Assisted Problem Solving	3
CSE 2111	Modeling and Problem Solving with Spreadsheets and Databases	3
ECON 3400	The Analysis and Display of Data	3
ENR 2000	Natural Resources Data Analysis	3

GEOG 2200.01	Mapping Our World	3
INTSTDS 3400	The Analysis and Display of Data	3
LING 2001	Language and Formal Reasoning	3
LING 2051	Analyzing the Sounds of Language	3
MATH 1116	Excursions in Mathematics	3
MATH 1120	Precalculus with Review I	5
MATH 1130	College Algebra for Business	4
MATH 1131	Calculus for Business	5
MATH 1140	Calculus with Review I	4
MATH 1148	College Algebra	4
MATH 1149	Trigonometry	3
MATH 1150	Precalculus	5
MATH 1151	Calculus I	5
MATH 1152	Calculus II	5
MATH 1156	Calculus for the Biological Sciences	5
MATH 1181H	Honors Calculus I	5
PHILOS 1500	Introduction to Logic	3
PHILOS 1501	Introduction to Logic and Legal Reasoning	3
PHILOS 1520	Probability, Data, and Decision Making	3
PHILOS 2500	Symbolic Logic	3
PHYSICS 3700	Experimental Physics Instrumentation and Data Analysis Lab	3
POLITSC 3780	Data Literacy and Data Visualization	3
POLITSC 4781	Data Analysis in Political Science I	3
PUBHBIO 2210	Biostatistics for Public Health Research	3
SOCIOL 3540	Statistics in Sociology	3
STAT 1350.01	Elementary Statistics	3
STAT 1350.02	Elementary Statistics	3
STAT 1430.01	Statistics for Business Sciences	4
STAT 1430.02	Statistics for Business Sciences	4
STAT 1450.01	Introduction to the Practice of Statistics	3
STAT 1450.02	Introduction to the Practice of Statistics	3
STAT 2450.01	Introduction to Statistical Analysis I	3
STAT 2480.01	Statistics for the Life Sciences	3
STAT 2480.02	Statistics for the Life Sciences	3
STAT 3450.01	Basic Statistics for Engineers	2
STAT 3450.02	Basic Statistics for Engineers	2
STAT 3470.01	Introduction to Probability and Statistics for Engineers	3
STAT 3470.02	Introduction to Probability and Statistics for Engineers	3
STAT 4202	Introduction to Mathematical Statistics II	4

STAT 5301	Intermediate Data Analysis I	4

Pennsylvania State University

https://senate.psu.edu/curriculum/policies-rules-for-undergraduate-instruction-and-curriculum/140-00-general-education/

Baccalaureate Degree Requirements in the General Education Program

The General Education program consists of 45 credits distributed among four components: Foundations (15 credits) in Writing/Speaking and Quantification; Knowledge Domain Breadth (15 credits) in the Natural Sciences, Arts, Humanities, Social and Behavioral Sciences, and Health and Wellness; Integrative Studies (6 credits), through completion of Inter-domain and/or other designated coursework; and Exploration (9 credits) through completion of additional coursework across particular knowledge domains, and/or the study of world language.

Each approved course is identified in the *Undergraduate Degree Programs Bulletin* and the Course Catalog by descriptive suffixes/ attributes as follows:

Foundations (15 credits) Build a basis of effective communication and quantitative literacy

Foundations courses must be completed with a grade of "C" or better. Courses may not be Integrative Studies/Inter-domain

- WRITING/SPEAKING (9 credits)
  Courses designated with the GWS attribute satisfy this component.
- QUANTIFICATION (6 credits)
  Courses designated with the GQ attribute satisfy this component. (3-6 credits are selected from mathematics, applied mathematics, and statistics; 3 credits may be selected from computer science or symbolic logic.)

Breadth in Knowledge Domains (15 credits) Practice applying a specific way of constructing knowledge to examine a topic.

Students must complete 3 credits in each the Knowledge Domain; courses may not be Integrative Studies/ Inter-domain.

- NATURAL SCIENCES (3 credits)
  Courses designated with the GN attribute satisfy this component.
- ARTS (3 credits)
  Courses designated with the GA attribute satisfy this component.
- HUMANITIES (3 credits)
  Courses designated with the GH attribute satisfy this component.
- SOCIAL AND BEHAVIORAL SCIENCES (3 credits)
  Courses designated with the GS attribute satisfy this component.

- HEALTH AND WELLNESS (3 credits)
  Courses designated with the GHW attribute satisfy this component.

Integrative Studies (6 credits) Practice synthesizing knowledge from different perspectives to examine a topic.

- **INTER-DOMAIN**
  Courses designated with the General Education-Integrative: Inter-domain attribute satisfy this requirement. (The suffix of N or Q (honors) is commonly used for identification purposes.)

Exploration (9 credits) Follow intellectual curiosity to deepen or widen learning

- Select 3 credits from courses with the GN attribute. This may be completed with inter-domain courses.
- Select 6 credits from courses with the GA, GH, GN, GS, or General Education Integrative: Inter-domain attributes and may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher.

The General Education program extends the concept of flexibility to all aspects of the degree program. Penn State wants students to use General Education as an opportunity to experiment and explore, to take academic risks, to discover, and to learn. A student may:

1. Substitute a 200- to 499-level course in an area of General Education for a course found on the General Education list. For example, a student may take a 400-level course in history and use it to meet the General Education requirement satisfied by a comparable lower-level history course.

2. Substitute 3 units of a World Language course at the 12th credit level of proficiency or higher that exceed the student's minimum degree requirements in either of the Foundation areas (GWS or GQ) of General Education.

Pennsylvania State University
https://senate.psu.edu/curriculum/policies-rules-for-undergraduate-instruction-and-curriculum/190-00-general-education-course-designations-and-criteria/
General Education Foundations Course Criteria

QUANTIFICATION (GQ)

In Quantification (GQ) fields, students practice and master basic mathematical and statistical skills of lifelong value in solving real world problems. Students should learn to apply mathematical skills appropriate to solve such problems. (Senate Agenda March 15, 2016)

To help students achieve GQ goals and master foundational quantification skills, the university provides GQ coursework and an appropriate learning environment that will:

- *Provide experience in assessing and interpreting quantitative data and information*
- *Guide students to recognize patterns, establish relations, exercise conceptual thinking, develop problem-solving skills, and think logically and critically*
- *Support students in their efforts to draw accurate and useful conclusions; make informed decisions based on quantitative analysis; and use basic mathematical and statistical skills to solve conceptual problems.*
    - *GQ Student Learning Criteria. Upon successful completion of the General Education Quantification (GQ) requirement, students should have increased their abilities to:*
- *Use mathematical, statistical, or computational models, principles, and processes to integrate, synthesize, generalize, or make judgments about real world problems*
- *Recognize patterns, establish mathematical relations, apply problem-solving skills, and think logically and critically*
- *Develop, explore, analyze, and reason about multi-variable relationships using quantitative tools*
- *Use probability to reason and make judgments based on data that exhibit variability*
- *Communicate and explain mathematical and statistical ideas.*

Pennsylvania State University
https://bulletins.psu.edu/undergraduate/general-education/course-lists/quantification/
Quantification Courses

These courses have been approved as General Education Quantification courses. This course list is updated periodically. Descriptions and learning criteria for General Education Quantification courses can be found in the Foundation and Knowledge Domains section.

AGBM 106	Agribusiness Problem Solving	3
CMPSC 101	Introduction to Programming	3
CMPSC 200	Programming for Engineers with MATLAB	3
CMPSC 201	Programming for Engineers with C++	3
CMPSC 203	Introduction to Spreadsheets and Databases	4
CMPSC 208	Technical Game Development	3
CRIMJ 260	Statistical Analysis for the Social Sciences	3

AGBM 106	Agribusiness Problem Solving	3
DA 101	Introduction to Data Analytics	3
EDPSY 101	Analysis and Interpretation of Statistical Data in Education	3
EME 210	Data Analytics for Energy Systems	3
GAME 250	Technical Game Development	3
GAME 251	2D Game Programming	3
GEOSC 210	Geoscience Data Analytics	3
HDFS 200	Quantitative Skills for Human Services	3
HM 350	Hospitality Revenue and Profit Optimization	3
KINES 384	Biomechanics	3
MATH 21	College Algebra with Analytic Geometry with Applications I	3
MATH 22	College Algebra With Analytic Geometry and Applications II	3
MATH 26	Plane Trigonometry and Applications of Trigonometry	3
MATH 31	Mathematics of Music	3
MATH 32	Math for Allied Health Professions	3
MATH 33	Mathematics for Sustainability	3

AGBM 106	Agribusiness Problem Solving	3
MATH 34	The Mathematics of Money	3
MATH 35	General View of Mathematics	3
MATH 36	Insights Into Mathematics	3
MATH 37	Finite Mathematics	3
MATH 38	Elementary Linear Algebra	3
MATH 41	Trigonometry and Analytic Geometry	4
MATH 81	Technical Mathematics I	3
MATH 82	Technical Mathematics II	3
MATH 83	Technical Calculus	4
MATH 97N	Special Topics - InterDomain	1-9
MATH 110	Techniques of Calculus I	4
MATH 111	Techniques of Calculus II	2
MATH 140	Calculus With Analytic Geometry I	4
MATH 140B	Calculus and Biology I	4
MATH 140E	Calculus with Engineering Applications I	4
MATH 140G	Calculus with Earth and Mineral Sciences Applications I	4

AGBM 106	Agribusiness Problem Solving	3
MATH 140H	Honors Calculus with Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
MATH 141B	Calculus and Biology II	4
MATH 141E	Calculus with Engineering Applications II	4
MATH 141G	Calculus with Earth and Mineral Sciences Applications II	4
MATH 141H	Honors Calculus with Analytic Geometry II	4
MATH 197N	Special Topics - InterDomain	1-9
MATH 200	Problem Solving in Mathematics	3
MATH 201	Problem Solving in Mathematics II	3
MATH 210	Calculus with Engineering Technology Applications	3
MATH 211	Intermediate Calculus and Differential Equations with Applications	3
MATH 220	Matrices	2-3
MATH 220H	Honors Matrices	2-3
MIS 204	Introduction to Management Information Systems	3
PHIL 12	Symbolic Logic	3

AGBM 106	Agribusiness Problem Solving	3
PSYCH 200	Elementary Statistics in Psychology	4
SCM 200	Introduction to Statistics for Business	4
SCM 200H	Honors Introduction to Statistics for Business	4
STAT 100	Statistical Concepts and Reasoning	3
STAT 200	Elementary Statistics	4
STAT 240	Introduction to Biometry	3
STAT 250	Introduction to Biostatistics	3

Texas A&M University

https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#text

University Core Curriculum

Mathematics – 6 SCH

Code	Title	Semester Credit Hours
MATH 135	Mathematics for Teachers I	3
MATH 136	Mathematics for Teachers II	3
MATH 140	Mathematics for Business and Social Sciences	3
MATH 142	Business Calculus	3
MATH 147	Calculus I for Biological Sciences	4
MATH 148	Calculus II for Biological Sciences	4
MATH 150	Functions, Trigonometry and Linear Systems	4

Code	Title	Semester Credit Hours
MATH 151	Engineering Mathematics I	4
MATH 152	Engineering Mathematics II	4
MATH 167	Explorations in Mathematics	3
MATH 168	Finite Mathematics	3
MATH 171	Calculus I	4
MATH 172	Calculus II	4
PHIL 240	Introduction to Logic	3
STAT 201	Elementary Statistical Inference	3

Course List

Courses in this category focus on quantitative literacy in logic, patterns, and relationships. Courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experiences. The following skills will be addressed in the courses that comprise this area: critical thinking, communication, and empirical and quantitative.

University of Texas – Austin

https://catalog.utexas.edu/general-information/academic-policies-and-procedures/core-curriculum/

Core Curriculum*

Mathematics

One of the following courses:

> Advertising 309R

> African and African Diaspora Studies 302M, 350

> Educational Psychology 308

> Government 350K

> Mathematics 302, 305G, 408C, 408K, 408N, 408Q, 408R

> Philosophy 313

> Psychology 317L

> Sociology 317L

> Statistics and Data Sciences 301, 302F, 320E, 320H, 325H

Students in the Plan II Honors Program may complete this requirement by taking Mathematics 310P.

*The updates to Core Curriculum are pending approval of the Texas Higher Education Coordinating Board at the time of publication.

University of Washington – Seattle

https://advising.uw.edu/degree-overview/general-education/quantitative-and-symbolic-reasoning/

Reasoning

Although many students meet the requirement with a mathematics course, either because their intended majors require math or because they enjoy it, other students prefer to take a course that emphasizes reasoning or mathematical applications rather than traditional math.

Many students, for example, take economics to gain some insight into the world of business and finance. Many economic principles are expressed in mathematical terms, and in an introductory economics course you will apply simple mathematical principles to real-life situations.

Students interested in the study of language — students who may major or minor in a foreign language, English, communications, a behavioral science, or speech, for example — may wish to take linguistics, which sharpens awareness of verbal reasoning through the study of the history, nature, and structure of language.

We also offer courses entirely devoted to the study of reasoning and logical argument: PHIL 115: Practical Reasoning, and PHIL 120: Introduction to Logic.

Grade required

Any passing grade (0.7 or higher) is acceptable. The course may not be taken on the satisfactory/not satisfactory (S/NS) grading option.

Placement

The Math Department recommends taking the Guided Self-Pacement Assessment before registration in MATH 111, 120, and 124. For the prerequisites and registration restrictions of other Reasoning courses, consult the Course Descriptions.

Overlaps with other requirements

You may also count your Reasoning course toward the Areas of Inquiry requirement, in whichever Area it is listed. (A few Reasoning courses do not count toward Areas of Inquiry.) If your Reasoning course happens to be a W-course and/or is part of your major or minor, it can count toward those requirements as well.

AP and IB

There are several AP scores that can be used to satisfy the Reasoning requirement and can also be counted toward Areas of Inquiry. See the AP tables for more information.

There are several International Baccalaureate Higher Level exams that can be used to satisfy the Reasoning requirement and can also be counted toward Areas of Inquiry. See the IB tables for more information.

For transfer students
Any course that transfers as a "Q" course (for example, PSYCH Q-1XX), or any MATH X or STAT X course, will satisfy the Reasoning requirement if the course transfers as at least 4 credits. For other courses, consult an adviser. Bring a copy of the course syllabus or the description from the catalog of the college offering the course.

You can check the UW Equivalency Guide for Washington Community and Technical Colleges to determine which courses from Washington community colleges count toward the UW's Reasoning requirement; they are marked in the lists with an RSN notation.

Postbaccalaureate students
Postbaccalaureate students are not required to complete the Reasoning requirement.

Registering for Reasoning courses
You can generate a complete list of Reasoning courses with space still available using the MyPlan course search.

University of Washington – Seattle
https://myplan.uw.edu/course/#/courses?states=N4Igwg9grgTgzgUwMoIlYwMYAsQC4TAA6IAZhDALYAiqALqsbkSBqhQA5RyPGJ20AbBMQA0xAJZwUGWuIgA7FOmyNaMKAjEhJASXlw1UGeSWYsjEqgGItARw0wAnkjXj5Acx4gASkgByosQAJqiO3HjMAIwWVjbEAEwx1prEAMxJcSAALBkpIACsuVoAbLkAvloG6LQAovJBACriFAjhuADaAAwiAJzFnQC6Wm4YAlBBCH4KAPLsCIoIMnL6qup5I2MT3q2uMghB0rIKbYbr8qPjCAAKMAi3tnDb9uK3Qasaw%2BebCA0ARqiHZYnNaVLAQADu03kAkcVwwyEWRxWeEsyVBEKhML0VzucAUgOO5XR4IAQjAIYgisQsKgpGgzPt3nkgpJRhBEABBIIAN1Q532phUKNiCDKIBEIHB7DgeAIxHBbiCEIAEghxO4sLRGPkellUloFfUIVd2eIkdrUp14mKykA
Courses

Course Code	Course Title	Credits	Gen Ed Req
ACCTG 219	Essentials of Accounting	4 credits	RSN
ASTR 101	Astronomy	5 credits	NSc and RSN
ASTR 102	Introduction to Astronomy	5 credits	NSc and RSN
ASTR 150	The Planets	5 credits	NSc and RSN
ASTR 300	Introduction to Programming for Astronomical Applications	3 credits	RSN
BIO A 482	Human Population Genetics	5 credits	NSc and RSN

Course Code	Course Title	Credits	Gen Ed Req
BIOL 359	Foundations in Quantitative Biology	3 credits	NSc and RSN
BIOST 310	Biostatistics for the Health Sciences	4 credits	RSN
CFRM 405	Mathematical Methods for Quantitative Finance	3 credits	NSc and RSN
CHEM 120	Principles of Chemistry I	5 credits	NSc and RSN
CHEM 142	General Chemistry	5 credits	NSc and RSN
CHEM 143	Accelerated General Chemistry	6 credits	RSN
CHEM 145	Honors General Chemistry	5 credits	NSc and RSN
CHEM 152	General Chemistry	5 credits	NSc and RSN
CHEM 162	General Chemistry	5 credits	NSc and RSN
CS&SS 221	Statistical Concepts and Methods for the Social Sciences	5 credits	NSc and RSN
CSE 121	Introduction to Computer Programming I	4 credits	NSc and RSN
CSE 122	Introduction to Computer Programming II	4 credits	NSc and RSN
CSE 123	Introduction to Computer Programming III	4 credits	NSc and RSN
CSE 143	Computer Programming II	5 credits	NSc and RSN
CSE 154	Web Programming	5 credits	RSN
CSE 160	Data Programming	4 credits	NSc and RSN
CSE 311	Foundations of Computing I	4 credits	RSN
CSE 3127	Foundations of Computing II	4 credits	RSN
E E 201	Computer Hardware Skills	1 credits	RSN
ECE 401	Introduction to Research in Early Care and Education	5 credits	SSc and RSN and W

Course Code	Course Title	Credits	Gen Ed Req
ECFS 401	Understanding Early Childhood and Family Studies Research	5 credits	SSc and RSN and W
ECON 200	Introduction to Microeconomics	5 credits	SSc and RSN
ECON 201	Introduction to Macroeconomics	5 credits	SSc and RSN
EDPSY 490	Basic Educational Statistics	3 credits	NSc and RSN
EDPSY 490	Basic Educational Statistics	3 credits	NSc and RSN
ENVIR 301	Research Methods in Environmental Studies	5 credits	NSc and RSN
ENVIR 310	Data Analysis in Environmental Studies	5 credits	NSc and RSN
ESRM 250	Introduction to Geographic Information Systems in Forest Resources	5 credits	NSc and RSN
ESRM 304	Environmental and Resource Assessment	5 credits	NSc and RSN
ESS 469	Machine Learning in Geosciences	4 credits	RSN
GEOG 245	Geodemographics: Population, Diversity, and Place	5 credits	SSc and DIV and RSN
GEOG 317	Geographic Information and Spatial Analysis	5 credits	SSc and RSN
GEOG 360	GIS and Mapping	5 credits	SSc and RSN
GEOG 458	Advanced Digital Geographies	5 credits	SSc and RSN
I S 305	Essentials of Business Finance and Information Systems	5 credits	RSN
INFO 180	Introduction to Data Science	4 credits	RSN
INFO 201	Foundational Skills for Data Science	5 credits	RSN
INFO 310	Information Assurance and Cybersecurity	5 credits	SSc and RSN
INFO 330	Databases and Data Modeling	5 credits	RSN

Course Code	Course Title	Credits	Gen Ed Req
INFO 340	Client-Side Development	5 credits	RSN
INFO 370	Core Methods in Data Science	5 credits	RSN
INFO 371	Advanced Methods in Data Science	5 credits	RSN
INFO 474	Interactive Information Visualization	5 credits	A&H and RSN
INFO 478	Population Health Informatics	5 credits	SSc and RSN
LING 200	Introduction to Linguistics	5 credits	A&H or SSc, and RSN
MATH 111	Algebra with Applications	5 credits	NSc and RSN
MATH 112	Application of Calculus to Business and Economics	5 credits	NSc and RSN
MATH 120	Precalculus	5 credits	NSc and RSN
MATH 124	Calculus with Analytic Geometry I	5 credits	NSc and RSN
MATH 134	Accelerated [Honors] Calculus	5 credits	NSc and RSN
MATH 180	Topics in Mathematics for Non-Science Majors	3, 5 credits	NSc and RSN
PHIL 120	Introduction to Logic	5 credits	NSc or SSc, and RSN
PHYS 101	Introduction to Physics though Inquiry I	5 credits	NSc and RSN
PHYS 114	Mechanics	4 credits	NSc and RSN
PHYS 121	Mechanics	5 credits	NSc and RSN
PSYCH 315	Understanding Statistics in Psychology	5 credits	RSN
PSYCH 317	Introduction to Probability and Statistics for Psychology	5 credits	RSN
Q SCI 291	Calculus for Natural Systems I: Derivatives	5 credits	NSc and RSN

Course Code	Course Title	Credits	Gen Ed Req
Q SCI 381	Introduction to Probability and Statistics	5 credits	NSc and RSN
QMETH 201	Introduction to Statistical Methods	4 credits	NSc and RSN
R E 408	Financial Modeling for Real Estate I	3 credits	RSN
R E 413	Real Estate Finance and Investment	4 credits	RSN
SOC 221	Statistical Concepts and Methods for the Social Sciences	5 credits	NSc and RSN
STAT 220	Statistical Reasoning	5 credits	NSc and RSN
STAT 221	Statistical Concepts and Methods for the Social Sciences	5 credits	NSc and RSN
STAT 311	Elements of Statistical Methods	5 credits	NSc and RSN

University of Wisconsin – Madison

https://policy.wisc.edu/library/UW-1059

General Education Requirements for Undergraduate Degrees

Quantitative Reasoning, 3 to 6 Credits

Quantitative Reasoning is the process of forming conclusions, judgments, or inferences from quantitative information. The 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. To ensure timely completion of the undergraduate degree, students must demonstrate minimum math proficiency before they can enroll in a Quantitative Reasoning Part A course. They should complete Part A of the Quantitative Reasoning requirement by the end of their first year, and must complete Part A before they enroll in Part B.

Quantitative Reasoning Part A:

An introductory course in college-level mathematics, computer science, statistics, or formal logic that is intended to prepare students for more advanced work in a disciplinary context.

Learning Outcomes

- Solve problems using quantitative information and the tools of college-level mathematics, computer science, statistics or formal logic
- Draw conclusions using quantitative information and the tools of college-level mathematics, computer science, statistics or formal logic
- Develop models and/or interpret data and/or devise algorithm using quantitative information and the tools of college-level mathematics, computer science, statistics or formal logic

Quantitative Reasoning Part A Requirement

Can be satisfied by approved college work while in high school, AP test scores, placement testing, or taking a 3-credit course at UW–Madison with a Quantitative Reasoning A designation.

***Quantitative Reasoning Part B**:*

In the disciplinary or interdisciplinary context of a course designed to build on the tools of college-level mathematics, computer science, statistics, or formal logic.

Learning Outcomes

- Manipulate quantitative information to create models, and/or devise solutions to problems using multi-step arguments, based on and supported by quantitative information
- Evaluate models and arguments using quantitative information
- Express and interpret in context models, solutions, and/or arguments using verbal, numerical, graphical, algorithmic, computational, or symbolic techniques

Quantitative Reasoning Part B Requirement

Can be satisfied by taking a designated QR-B course of at least 3 credits in a variety of fields of study which enhances students' proficiency in this domain. Students are encouraged to select a course in keeping with their interests or to satisfy other requirements for their major or degree program.

Identifying Courses That Meet General Education Requirements

The university offers hundreds of courses that meet the requirements described above. Students should consider their own interests and check with their advisor when deciding which courses to complete. Many undergraduate programs of study have breadth requirements that go beyond these basic university-wide requirements.

The following language is used in the UW–Madison course listings to indicate how courses count toward satisfying the communication, quantitative reasoning, and ethnic studies portions of the General Education Requirements. Courses that satisfy these requirements are also tagged with a mortarboard symbol.

- Communication Part A

- Communication Part B
- Ethnic Studies
- Quantitative Reasoning Part A
- Quantitative Reasoning Part B

Note: Some Communication Part B courses carry Communication B credit only at the lecture or section level and/or only in certain semesters; these courses will be indicated in the Schedule of Classes.

Course descriptions also include information about whether courses meet General Education Humanities, Natural Science, or Social Studies Breadth Requirements. (Click on course numbers in the *Guide* to see this information.) Students should also be aware that each school and college may, at its own discretion, designate additional courses that satisfy these requirements. For this reason, students should consult their advisors to obtain information about how these requirements are implemented in the school or college in which they are enrolled.

University of Wisconsin – Madison: must be a current student to view schedule of classes w/ list of courses meeting Quantitative A & B requirements.

Writing Requirement – Policy Benchmarking

I. Summary

A review of 17 ABOR and peer institutions' Foundations Writing requirements shows policy is largely uniform across the following areas:

- who establishes the requirements – *15 institutions have institution-wide writing foundation requirements*.
- which departments may offer the coursework – *English is the sole or primary offering department at 15 institutions.*
- listing the coursework in the policy – *13 institutions name specific coursework that meets the foundations writing requirement (2 others list the coursework in a separate policy).*

Institutions are divided in how many pathways are offered to fulfill the foundations writing requirement; the most common offering is split between 1 pathway, 2 pathways, and student elective out of several course options. Only the University of Illinois has as many pathways as the University of Arizona.

Three credits satisfy the requirements at the most institutions, closely followed by 6 credits. Only one other institution, Pennsylvania State University, requires 9 units like the University of Arizona's first strand option.

A. Unit that sets foundations writing requirement

INSTITUTION	RESPONSIBLE UNIT
• **University of Arizona** • Arizona State University • Northern Arizona University • University of California- LA • University of Florida • University of Illinois • University of Maryland • Michigan State University • University of Minnesota • North Carolina University • Ohio State University • Pennsylvania State University • Texas A&M University • University of Texas- Austin • University of Washington – Seattle • University of Wisconsin - Madison	Institution
• University of California- Davis • University of Iowa	Department

B. Departments offering foundations writing coursework

INSTITUTION	DEPARTMENT(S)
• **University of Arizona** • Arizona State University • Northern Arizona University • University of California- Davis • University of California- LA • University of Florida • University of Maryland • Michigan State University • University of Minnesota • University of North Carolina • Ohio State University • University of Texas-Austin • University of Washington- Seattle	• English or equivalent*
• University of Illinois • Texas A&M University • University of Wisconsin- Madison	• English or equivalent* and/or Communication
• Pennsylvania State University	• Air Force • Biological Engineering • Biology • Biochemical & Molecular Biology • Bio-renewable Systems • Communication Arts & Sciences • Earth & Mineral Sciences • English/ English as a Second Language • Geosciences • History • Materials Science & Engineering • Women's Studies
• University of Iowa	Up to individual department; not specified

*English & Composition, Rhetoric, Rhetoric & Writing, Writing, Writing & Speaking

C. Number of pathways to fulfill foundations writing requirement

INSTITUTION	NUMBER OF PATHWAYS
• **University of Arizona** • University of Illinois	4
• Arizona State University • Ohio State University • University of Texas-Austin	3
• Northern Arizona University • Michigan State University • University of Minnesota • University of Wisconsin	2
• University of California-Davis • University of California-LA • University of Maryland • University of North Carolina	1
• University of Florida • Pennsylvania State University • Texas A&M University • University of Washington - Seattle	Student elective with many course options
• University of Iowa	Up to the department/ not specified

D. Separate Pathway required for non-native English speakers / ESL students

INSTITUTION	SEPARATE ESL PATHWAY REQUIRED
• University of Iowa • University of Texas- Austin	No
• Arizona State University • University of Illinois	Yes
• **University of Arizona** • University of California- LA • Pennsylvania State University	ESL pathway listed in policy, but not required for ESL students
• Northern Arizona University • University of California-Davis • University of Florida • University of Maryland • Michigan State University • University of Minnesota • University of North Carolina • Ohio State University • Texas A&M University • University of Washington • University of Wisconsin	ESL pathway not mentioned in policy

E. Coursework named in the policy

INSTITUTION	SPECIFIC COURSES NAMED IN POLICY?
• **University of Arizona** • Arizona State University • Northern Arizona University • University of California- LA • University of Florida • University of Illinois • University of Maryland • Michigan State University • University of Minnesota • Northern Carolina University • Ohio State University • Pennsylvania State University • Texas A&M University • University of Texas – Austin	Yes
• University of Washington – Seattle • University of Wisconsin – Madison	Located in policy/resource separate from Foundations policy
• University of California – Davis • University of Iowa	No

F. Credits required to satisfy foundations writing requirement

INSTITUTION	SEMESTER CREDIT HOURS REQUIRED
• University of Maryland • North Carolina University • Ohio State University • University of Wisconsin – Madison • University of Texas - Austin	3
• Arizona State University	3 / 6
• **University of Arizona**	3 /6 / 9
• University of California – LA* • University of Washington - Seattle*	3.33 (5 quarter-based credits)
• Michigan State University • University of Minnesota	4
• Northern Arizona University	4 / 6
• University of Illinois	4 / 6 / 8
• University of California- Davis	5.33 (8 quarter-based credits)
• University of Florida • Texas A&M University	6
• Pennsylvania State University	9
• University of Iowa	Up to department; not specified

*The institution is quarter-based, but has been converted to semester credit hours for ease of comparison.

G. Pathway Details – Credits and Coursework Options

INSTITUTION	CREDITS REQUIRED	COURSE TITLES
University of Arizona	• 9 credits; 3 courses	• Foundations Writing for ESL (ENGL 106) • Foundations English Writing (ENGL 107) *or* First Year Composition (ENGL 101) • Foundations Writing for ESL (ENGL 108) or First Year Composition II (ENGL 102)
	• 7 credits; 2 courses	• First Year Composition I (ENGL 101A) • First Year Composition II (ENGL 102)
	• 6 credits; 2 courses	• First Year Composition I (ENGL 101) • First Year Composition II (ENGL 102) OR • Foundations Writing for ESL I (ENGL 107) • Foundations Writing for ESL II (ENGL 108)
	• 3 credits; 1 course	• Advanced First Year Composition (ENGL 109H)
Arizona State University	• 6 credits; 2 courses	• First Year Composition I (ENG 101) • First Year Composition II (ENG 102)
		• First Year Composition I for Non-Native English Speakers (ENG 107) • First Year Composition II for Non-Native English Speakers (ENG 108)
	• 3 credits; 1 course	• Advanced Composition (ENG 105)
Northern Arizona University	• 4 credits/ 1 course	• Critical Reading and Writing in the University (ENG 105)
	• 6 credits / 2 courses	• Composition I (ENG 101) • Composition II (ENG 102)

University of California- Davis	• 8 credits / not specified	• "English Composition coursework (as specified by the candidate's college"
University of California- LA	• 5 credits / 1 course	• English Composition, Rhetoric & Language (ENGCOMP 3) or course variation for Diversity, Service Learning, or Engineers)
University of Florida	• 6 credits / 2 courses	Students select 2 from list of 11 courses (see full policy for details)
University of Illinois	• 4 credits / 1 course	• Writing and Research (RHET 105) *OR* • Principles of Academic Writing (ESL 115)
	• 8 credits / 2 courses	• Principles of Writing (RHET 101) • Principles of Research (RHET 102)
	• 6 credits / 2 courses	• Oral and Written Communication I (COMM 111) • Oral and Written Communication II (COMM 112) *OR* • Intro to Academic Writing I (ESL 111) • Intro to Academic Writing II (ESL 112)
University of Maryland	• 3 credits / 1 courses	• Academic Writing (ENGL 101)
Michigan State University	• 4 credits / 1 course	• Writing as Inquiry (WRA 101) or Honors (195H)
University of Minnesota	• 4 credits / 1 course	• University Writing (WRIT 1301 OR 1401)
North Carolina University	• 3 credits / 1 course	• Composition and Rhetoric (ENGL 105) *OR* • Composition and Rhetoric Interdisciplinary (ENGL 105I)
Ohio State University	• 3 credits / 1 course	• First-Year English Composition (ENGLISH 1110.01,1110.02, or 110.03)
Pennsylvania State University	• 9 credits / 3 courses	See full policy text for full list; includes courses from ADTED, AIR, BE, BIOL, BMB, BRS, CAS, EMSC, ENGL, ESL, GEOSC, HIST, MATSE, and WMNST

Texas A&M University	• 6 credits/ 2 courses	Students take 2 English courses, or 1 English course and 1 Communications course. • Intro to Rhetoric and Composition (ENGL 103) • Composition and Rhetoric (ENGL 104) • Writing About Literature (ENGL 203) • Public Speaking (COMM 203) • Communication for Tech Professionals (COMM 205) • Argumentation and Debate (COMM 243)
GL University of Texas-Austin	• 3-5 credits / 1 course	• Rhetoric and Writing / for Non Native Speakers (RHE 306 for 3 units, or 306Q for 5 units) OR • World Literature I (E 303C) 3 units
University of Washington	• 5 (quarter) credits / 1 course	Students choose from ~15 courses (mostly subjects include English, Comparative Literature, and Honors). See policy for full list.
University of Wisconsin	• 3 credits / 1 course	One of the following: • Introduction to College Composition (ENGL 100) • Intro to Speech Composition (COMM 100) • Elements of Speech: Honors (COMM 181) • Science and Storytelling (LSC – Life Sciences Communication 100)

II. Full Policy Texts

University of Arizona
https://catalog.arizona.edu/policy/program-graduation/general-education/foundations#writing-requirement1
Writing Requirement

Students must complete one of four strands depending upon placement. Placement in writing courses is based on the student's high school record and standardized test scores, including the ACT1 English or the RSAT1 Verbal standardized test scores.

1. A three-course (9 credits) sequence in three semesters of:
    - English 106 (for ESL writers), English 107 (ESL equivalent) or English 101, and English 108 (the ESL equivalent) or English 102
2. A two-course (7 credits) sequence in two semesters of:
    - English 101A (4 credits) and English 102
3. A two-course (6 credits) sequence in two semesters of:
    - English 101 and English 102 or
    - English 107 and English 108 (the ESL equivalents)
4. One course (3 credits) with honors placement:
    - English 109H – a grade of C or higher is required to satisfy the requirement with this course. (Note: a grade of D necessitates a repeat of English 109H or completion of English 102 to fulfill the requirement.)

Transfer students who have at least 56 transfer credits are eligible for the Transfer Portfolio option. Students must (1) submit the portfolio within two semesters of transferring to the University of Arizona (including summer sessions), and (2) attend a portfolio information session or make an appointment to speak with the Writing Program Transfer and Placement Coordinator. The Coordinator may be contacted at **Writing Placement**, or at 520-621-3553. For more information about the Transfer Portfolio, see the **Writing Program Website**.

NOTE: Students who have earned a previous bachelor's or master's degree from an accredited U.S. institution have satisfied the Writing requirement; they do not need to submit a portfolio.

The University Writing Requirements also include the **Mid-Career Writing Assessment (MCWA)**, which takes place after students have completed 40 units and have been admitted to their major degree program, as well as the completion of at least one **Writing Emphasis Course** in the major.

University of Arizona
https://catalog.arizona.edu/policy/program-graduation/general-education/writing-emphasis
Writing Emphasis Course

Every undergraduate student must complete:

- two General Education **Writing Attribute** courses, and
- at least one **regular junior or senior-level upper-division** course in their degree program that has a Writing Emphasis.

Writing emphasis courses assign writing as a tool for learning and promote writing development. In a Writing Emphasis course, at least 60% of the course grade must be based on written work. Such courses are identified with the phrase "Writing Emphasis Course" in the **course description** listed in the Catalog.

University of Arizona
https://catalog.arizona.edu/policy/program-graduation/general-education/writing-assessment
Mid-Career Writing Assessment (MCWA)

Every undergraduate degree program requires satisfaction of the Mid-Career Writing Assessment (MCWA). The MCWA is based on students' performance in their second semester English composition course. **A grade of A or B in one of the following courses will satisfy this University writing proficiency requirement:**

- English 102 **or**
- English 108 (for ESL students) **or**
- English 109H (for Honors students)

Transfer courses in composition are evaluated by the **First-Year Writing Program** Transfer and Placement Coordinator.

Once students have completed 40 units toward their degrees and have been admitted to their major degree program, their academic records are reviewed. **Students earning less than a B grade** in their second semester composition course must take one or more additional steps to improve their composition skills so they can meet the writing standards of their major department. **Students are responsible for providing evidence that they have completed these additional steps,** or their academic records will not reflect completion of this graduation requirement. Depending on the department's requirements, this evidence might be, for example, an attendance sheet from a workshop series offered by the Writing Center, writing samples revised as part of the Writing Skills Improvement Program, or a polished portfolio of papers written for certain Tier One General Education courses. Once the department has verified that the MCWA requirement has been satisfied, the major advisor notifies the college dean's office that the student has met the department's requirement.

Your **Student Academic Advisement Report (SAAR)** will display the Mid-Career Writing Assessment as a degree requirement.

Procedures for students earning less than a B in their second semester composition course:

- **If you have declared a major:** you should contact your department or college **advisor** for your major for instructions on how to satisfy the MCWA for that department. Your advisor will explain what the department expects its majors to do and will give you a reasonable deadline in which to accomplish it.
- **If you change your major:** after meeting the MCWA requirement for one department, be aware that you may need to take additional steps to satisfy the proficiency requirement for the department of your new major. Contact the advisor in your new major for instructions on completing the MCWA for that department.
- **If you have not yet declared a major OR are in the pre-professional phase of your program (e.g., pre-education, pre-nursing):** you should NOT contact your department or college advisor until you have declared a major or are admitted to the professional phase of your program. Prior to declaring a major or while in the pre-professional phase, you may want to strengthen your writing skills through the Writing Center or Writing Skills Improvement Program so that you are better prepared when you are admitted to your major.
- **If you have a double major OR concurrent degree programs:** you should contact the department advisor of your primary major or primary degree program on how to fulfill the MCWA. While you will need to complete any major-specific writing requirements for both of your degree programs, you will satisfy the University-level writing proficiency when you meet the standards established by your primary major.
- **If you have previously earned a bachelor's degree from an accredited American institution:** your advisor for your current major will determine if you have satisfied the Mid-Career Writing Assessment.

Please direct questions to your department or college **advisor**.

Arizona State University
https://catalog.asu.edu/ug_gsr
University undergraduate General Studies requirement

University requirements - First Year Composition
In addition to the 35 credit hours of General Studies coursework, university graduation requirements also require completion of both ENG 101 and ENG 102, or ENG 105 with a grade of "C" (2.00) or higher for graduation from ASU in any baccalaureate or associate degree program. Students for whom English is not a native language may meet the first-year composition requirement by completing ENG 107 and 108 with a grade of "C" (2.00) or higher.

Students who are required to take first year composition must enroll in their first required composition course within the first year and continue to enroll in required composition courses every term until composition requirements are met.

Northern Arizona University
https://nau.edu/liberal-studies/foundation-requirements/
Foundation Requirements

You must take 7 credits of foundation requirements, including:

- 4 credits of English
- 3 credits of math

English foundation requirement

ENG 105 Critical Reading and Writing in the University Community

ENG 105 offers you a valuable seminar experience during your first year to help you develop the writing skills necessary for success at the university and on the job.

You may also meet the English composition requirement by completing English 101 and 102 (6 credits), or equivalents, with a grade of C or better at another accredited university or community college.

You are eligible to take a composition placement exam if you are accepted to the university:

- with an ACT score of 23 or higher
- with a verbal SAT of 530 or higher
- as a transfer student who has completed English 101 or equivalent

If you score high enough on the composition placement exam, you will receive 2 credits toward graduation. Instead of ENG 105, you will take ENG 205, in which you can earn another 2 credits, for a total of 4 credits. If your score on the placement exam is insufficient, you must take ENG 105.

If you receive a score of four on either the AP English Language and Composition Exam or the English Literature and Composition Exam, you will receive 2 credits toward graduation and take ENG 205. You cannot combine the 2 credits for each exam to complete the English foundation requirement. You must take ENG 205.

UC Davis
https://academicsenate.ucdavis.edu/bylaws-regulations/regulations#522-
Baccalaureate Degree Requirements in General Education

A. Each candidate for a baccalaureate degree shall satisfy a General Education requirement comprising two components: Topical Breadth and Core Literacies. (Am. 6/6/2008)

1. The Topical Breadth component shall be separated into three subject matter areas: Arts and Humanities; Science and Engineering; and Social Sciences. (Am. 6/6/2008)

2. The Core Literacies component shall have four parts: Literacy with Words and Images; Civic and Cultural Literacy; Quantitative Literacy; and Scientific Literacy. (En. 6/6/2008)

B. The Topical Breadth component shall be satisfied by passing between 12 and 20 units of courses in each subject matter area, for a total of 52 units from all three areas. (En. 6/6/2008)

C. The Core Literacies component shall be satisfied by passing at least the specified number of units of coursework in the following four parts: (En. 6/6/2008)

1. Literacy with Words and Images shall be satisfied with: (En. 6/6/2008)

- 8 units or the equivalent of English Composition coursework (as specified by the candidate's college); (En. 6/6/2008)
- 6 units of designated writing experience coursework in the candidate's major or elsewhere; (En. 6/6/2008)
- 3 units of additional designated coursework in either oral skills or writing experience; and (En. 6/6/2008)
- 3 units of designated coursework in visual literacy. (En. 6/6/2008)

2. Civic and Cultural Literacy shall be satisfied with (En. 6/6/2008)

- 3 units of designated coursework in American cultures, governance and history (En. 6/6/2008, Am. 9/1/2017)
- 3 units of designated coursework in domestic diversity (En. 9/1/2017)
- 3 units of designated coursework in world cultures. (En. 6/6/2008)

3. Quantitative Literacy shall be satisfied with 3 units of designated coursework in quantitative literacy. (En. 6/6/2008)

4. Scientific Literacy shall be satisfied with 3 units of designated coursework in scientific literacy. (En. 6/6/2008)

D. In satisfying the General Education requirement: (Am. 6/6/2008)

1. Course units that satisfy requirements in the candidate's major or majors may also be counted toward satisfaction of General Education requirements.

2. While some courses may be certified in more than one of the three subject matter areas for Topical Breadth, no student may count a given course in more than one subject matter area. (En. 6/6/2008)

3. No course may be counted by a student toward the satisfaction of more than one of the four Core Literacies. (En. 6/6/2008)

4. With the exception of the 8 units of designated English Composition coursework, a course offered toward the satisfaction of the Core Literacies component may also be offered in satisfaction of the Topical Breadth component. (En. 6/6/2008)

5. No course passed prior to satisfaction of the Entry Level Writing Requirement shall be offered toward satisfaction of the General Education requirements for writing experience coursework. (Am. 6/6/2008)

6. Candidates may not present Advanced Placement or International Baccalaureate credit in satisfaction of General Education requirements, except insofar as it may be applied to the English Composition component of the Literacy with Words and Images requirement. (En. 6/6/2008, Am. 6/3/2011)

7. Transfer students who have successfully completed the Intersegmental General Education Transfer Curriculum (IGETC) are exempt from all General Education requirements that may be met with lower-division courses. (Am. 6/6/2008, 6/3/2011)

8. Students transferring to UC Davis who have not completed the IGETC curriculum shall satisfy all General Education requirements as specified by this Regulation, but may offer previously completed coursework toward their satisfaction. (Am. 6/6/2008, 6/3/2011)

9. The Committee on Courses of Instruction has authority to delegate and to rescind prior delegation to the Deans of the undergraduate colleges the authority to determine the suitability of non-UC Davis courses presented by new and continuing undergraduate students in satisfaction of General Education requirements. (En. 6/3/2011)

10. Subject to the limits otherwise applicable, candidates may elect Passed/Not Passed grading for courses fulfilling General Education requirements. (En. 6/6/2008)

University of California – LA

https://catalog.registrar.ucla.edu/browse/College%20and%20Schools/CollegeofLettersandScience/College-Requirements/Writing-Requirement

Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the College writing requirement.

Students admitted to the College are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for letter grades, and students must receive a C or better grade in each (a C− grade is not acceptable).

Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C− or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C− or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C− or Passed grade is not acceptable).

Qualifying examination scores and courses are determined by the College Faculty Executive Committee.

Writing II

The Writing II requirement must be satisfied within seven terms of enrollment by completing one course from a list of **Writing II courses** approved by the College Faculty Executive Committee; see the Registrar's **Writing II requirement** web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C− or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill preparation for the major requirements and, if approved for general education (GE) or diversity credit, may also fulfill a GE or diversity requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I, Writing II, and reciprocity requirements. No transfer student is admitted to the College without completing, with a C or better grade (a C− grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

University of California – LA
https://catalog.registrar.ucla.edu/Undergraduate-Study/Degree-Requirements/College-School-and-Department-Requirements
College, School, and Department Requirements

College or School Requirements

The College and each school with undergraduate programs establish their own degree requirements. These generally include a unit requirement that defines the total number of units to be completed; scholarship requirement that defines a minimum grade-point average; residence requirement that defines the amount of study that must be undertaken in residence at the UCLA campus; and course requirements that may include general education courses, reading and composition courses, foreign language courses, and core courses for the field of study.
See **each school** for details on requirements set by the College and each of the schools.

Department Requirements

Each department or interdepartmental program sets its own degree requirements in addition to those established by the College or school. Department requirements generally include preparation for the major, which are lower-division courses designed to prepare students for advanced study; and the major, which are upper-division course requirements. **Each department** lists its own requirements.

University of Florida

https://catalog.ufl.edu/UGRD/academic-programs/general-education/#text

General Education (GEN ED)

Through General Education courses, students gain fresh perspectives and discover new approaches to intellectual inquiry that promote understanding of both the traditional and the newly discovered. To achieve these outcomes, the General Education curriculum encompasses a breadth of knowledge in composition, diversity studies, humanities, international studies, mathematics, biological, physical, and social and behavioral sciences.

Ultimately, competence in these areas enables students to better understand themselves, their neighbors, other cultures and times, and the principles governing the natural world and the universe; and to participate fully and responsibly as informed citizens in local, national, and global matters.

GENERAL EDUCATION CATEGORIES

The General Education curriculum is organized around eight major subject areas.
More Info

- Biological Sciences
- Composition
- Diversity
- Humanities
- International
- Mathematics
- Physical Sciences
- Social and Behavioral Sciences

GENERAL EDUCATION PROGRAM REQUIREMENTS

All undergraduate students, except those transferring to UF with an AA degree from a Florida public college or an AA certificate from a Florida public state university, are required to complete UF's General Education requirement to graduate.

Subject Area	State Core	Gen Ed Courses	Totals

Biological and Physical Sciences[1]	3	3	6
Composition	3	3	6
Humanities[1]	3	3	6
Social and Behavioral Science[1]	3	3	6
Mathematics	3	3	6
Additional Required Gen Ed Coursework (Humanities, Social Science, or Natural Science)[2]		6	6
OVERALL TOTALS	15	21	36

1. To complete General Education, student must select a General Education course in the Humanities that features the UF Quest 1 subject area for 3 credits, a General Education course in the Social and Behavioral Science or Natural Science that features the UF Quest 2 subject area for 3 credits, a General Education course that features the International subject area for 3 credits, and a General Education course that features the Diversity subject area for 3 credits.
2. Majors that feature extensive use of these subject areas may require a student to complete all 6 Additional Required Gen Ed Coursework credits in a particular subject area. See the major's Recommended Model Semester Plan for details.

SUBJECT AREA OBJECTIVES

Composition

Communication courses must afford students the ability to communicate effectively, including the ability to write clearly and engage in public speaking.

Composition (C) is a sub-designation of Communication at the University of Florida.

Composition courses provide instruction in the methods and conventions of standard written English (i.e. grammar, punctuation, usage) and the techniques that produce effective texts. Composition courses are writing intensive, require multiple drafts submitted to the instructor for feedback prior to final submission, and fulfill 6,000 of the university's 24,000-word writing requirement. Course content must include multiple forms of effective writing, different writing styles, approaches and formats, and methods to adapt writing to different audiences, purposes and contexts. Students are expected learn to organize complex arguments in writing using thesis statements, claims and evidence, and to analyze writing for errors in logic.

STATE CORE GEN ED COMPOSITION COURSES

ENC 1101	Expository and Argumentative Writing	3
ENC 1102	Argument and Persuasion	3
ENC 1145	Topics for Composition	3
ENC 2210	Technical Writing	3
ENC 2305	Analytical Writing and Thinking	3

ENC 3246	Professional Communication for Engineers	3
ENC 3254	Professional Writing in the Discipline	3
ENC 3453	Writing in the Health Professions	3
ENC 3459	Writing in the Medical Sciences	3
ENC 3464	Writing in the Social Sciences	3
ENC 3465	Writing in the Law	3

University of Illinois

http://catalog.illinois.edu/general-information/degree-general-education-requirements/

Degree and General Education Requirements

The University of Illinois Urbana-Champaign requires that all undergraduate students take General Education - or "Gen Ed" - courses to gain and use broad knowledge beyond the specialized learning they will do in a major field of study. These Gen Ed requirements cover the kinds of knowledge all students should have: the humanities and arts, social and behavioral sciences, natural sciences and technology, quantitative reasoning, composition/writing, and cultural studies.

General Education courses at Illinois are mindful of our students' diverse backgrounds, needs, and interests, and are an essential component of the transformative learning that prepares our graduates to become alumni who make a significant societal impact. These courses build students' abilities to think critically, solve problems, generate new ideas and create knowledge, make connections between academic disciplines, respect and understand differences, and develop as citizens and leaders.

General Education at Illinois is more than a set of required courses; it is a gateway into the Illinois experience.

Courses are noted as fulfilling one or more of the following categories:

- Composition I
- Advanced Composition
- Humanities and the Arts: Literature & the Arts or Historical & Philosophical Perspectives
- Natural Sciences and Technology: Life Science or Physical Science
- Quantitative Reasoning
- Social and Behavioral Sciences
- Cultural Studies: Western/Comparative Cultures, Non-Western Cultures, and US Minority Cultures

For a list of current courses approved for General Education credit, please visit the Course Explorer.

Written Communication Requirement

Undergraduate Students:

- Satisfactory proficiency in written communication is a requirement for all undergraduate degrees awarded at the University of Illinois Urbana-Champaign. This proficiency can be certified by the satisfactory completion of the "Composition I" general education requirement via the one-semester, four-hour course Rhetoric 105 (Writing and Research); the two-semester, eight-hour sequence of Rhetoric 101 (Principles of Writing) and 102 (Principles of Research); or the two-semester, six-hour sequence Communication 111 and 112 (Oral & Written Communication I and II).
- A student who achieved, prior to enrolling in college-level coursework, a sufficiently high score on either the appropriate college-preparatory English exam (currently ACT, SAT, AP, or IB) will earn course credit that fulfills the general education "Composition I" requirement and thus will satisfy the Written Communication requirement for graduation. Note that ACT and SAT scores are taken into consideration for fulfillment of this requirement only when submitted to the Office of Undergraduate Admissions as part of the application process. More information can be found under "Proficiency Testing" at go.illinois.edu/pnp.
- Non-native English-speaking students who are mandated to take the English Placement Test (EPT) and given an English as a Second Language (ESL) placement must fulfill their Written Communication requirement by taking the two-semester, six-hour sequence of ESL 111 and 112 or the one-semester, four-hour ESL 115 course. They might also be required to take ESL 110 (Pronunciation). Non-native English-speaking students who are not required to take the EPT due to sufficiently high TOEFL iBT or IELTS scores may elect to satisfy the Written Communication requirement by taking the ESL, or the Rhetoric, or the Communication sequences. Students in this category who wish to take ESL must take the EPT to determine correct placement.
- If the academic credentials of a transfer student do not indicate fulfillment of coursework equivalent to fulfill the Written Communication graduation requirement, the student will need to do additional coursework to satisfy this requirement. Non-native English-speaking transfer students may be required to take the English Placement Test (EPT).

University of Iowa

https://catalog.registrar.uiowa.edu/academics-iowa/general-education-requirements/

General Education Requirements

Undergraduate general education requirements vary based on the college. This table is intended to be used for comparative purposes between colleges. Some colleges and some programs of study do not have undergraduate general education requirements; others have general education requirements specific to an individual program of study, like those in Carver College of Medicine. Check each program of study's page in the catalog for program-specific

requirements. World language graduation requirements by college can be found following this table.

GE REQ	COL. OF LIBERAL ARTS & SCI	COL. OF PUBLIC HEALTH	TIPPIE COL. OF BUSINESS	COL. OF EDU	COL. OF NURSING	UNIVERSITY COLLEGE	COL. OF ENGR
Approved Course Subjects							X
Business/ Mgmt						BAS only	
Critical Thinking						BLS only	
Diversity & Incl	X	X	X	X			X
Engr Be Creative							X
Hist. Perspectives	X	X	X	X			
Intl and Global Issues	X	X	X	X		X	X
Interpretation of Lit	X	X	X	X		BLS only	
Info Literacy						BLS only	
Leadership & Career Dev						BLS only	
Lit, Visual, & Perf Arts	X	X		X			
Nat Sci with lab	X	X		X	See "Natural Science Prequisites" on BSN page	X	
Nat Sci w/o lab			X		See "Natural Science Prequisites" on BSN page	BLS only	
Quantitative reasoning	X	X		X		X	
Rhetoric	X	X	X	X		X	X
Social Sci	X	X	X	X		BAS only	
Sustainability	X	X		X			

Values & Culture	X	X	X	X			
Values, Society & Diversity						X	

University of Iowa
https://catalog.registrar.uiowa.edu/liberal-arts-sciences/rhetoric/
Rhetoric for the GE CLAS Core

> Rhetoric courses help students to develop skills in speaking, writing, listening, and critical reading. They also build competence in research and inquiry as well as in analysis and persuasion, starting with public controversies in their social contexts and generalizing to all forms of idea presentation, whether academic readings, everyday debates, media messages, or student papers. Writing and speaking skills are emphasized and developed.
>
> All rhetoric classes follow specific department goals, but each instructor uses a unique set of texts and contexts to teach rhetorical concepts. Rhetoric courses are sometimes organized around a special topic, such as the STEM fields (science, technology, engineering, and mathematics) or sustainability, but the primary emphasis is always on responsible inquiry and analysis. Some course sections involve special activities, such as service-learning components, but the workload across all sections is comparable, with a fixed number of major assignments and a department-approved library of readings.
>
> During their first year at the university, students enroll in the rhetoric course indicated on their degree audit unless they are required to complete one or more prerequisite courses in English as a Second Language (ESL) as a result of their English proficiency evaluation.
>
> Students planning to transfer to the University of Iowa should discuss rhetoric course equivalencies as soon as possible with the University of Iowa Office of Admissions.
>
> Students who undergo formal evaluation by Student Disability Services and are found to have a learning disability in reading, writing, or speaking should request reasonable accommodations in order to complete rhetoric. Accommodations may be arranged by Student Disability Services in consultation with the Department of Rhetoric and individual instructors.

University of Maryland
https://academiccatalog.umd.edu/undergraduate/general-education-requirements/#requirementstext
Elements of the General Education Program

> The General Education program is comprised of courses that build foundational skills (Fundamental Studies), courses that expand the breadth of your education (Distributive Studies) and courses that explore and study human, societal and cultural differences (Diversity). At least two of your Distributive Studies courses will delve in to a "Big Question" as seen through the lens of a particular academic discipline (I-Series).

FUNDAMENTAL STUDIES

Master the skills.

The Fundamental Studies portion of the General Education program consists of 5 courses (nominally 15 credits), with one course in each of the following areas:

- Academic Writing[1]
- Analytic Reasoning
- Mathematics[1]
- Oral Communication
- Professional Writing

Academic Writing

The *Academic Writing* requirement prepares students with a foundational understanding of the writing skills needed for success in further studies at Maryland and beyond. All students must earn a grade of C- or better in *Academic Writing* in order to meet this General Education requirement.[1]

Analytic Reasoning

Courses in *Analytic Reasoning* foster a student's ability to use mathematical or formal methods or structured protocols and patterns of reasoning to examine problems or issues by evaluating evidence, examining proofs, analyzing relationships between variables, developing arguments, and drawing conclusions appropriately.

If a student successfully completes an *Analytical Reasoning* course that requires a Fundamental Studies *Mathematics* course as a prerequisite, then the *Mathematics* requirement will also be considered to be fulfilled.

Mathematics

The goal of the *Mathematics* requirement is to convey the power of mathematics, demonstrated by the variety of problems that can be modeled and solved by quantitative means. Ability in mathematics is a critical measure of how well students are prepared to meet the challenges they will face in their lives beyond school.[1]

Oral Communication

Human relationships, from the most formal to the most personal, rest in large measure on skilled listening and effective speaking. Skillful listening and speaking support success in personal relationships, educational undertakings, professional advancement, and civic engagement.

Professional Writing

The *Professional Writing* requirement strengthens writing skills and prepares students for the range of writing expected of them after graduation.[1]

These course must be attempted by 30 credits and successfully completed by 60 credits.

Michigan State University

https://reg.msu.edu/AcademicPrograms/Print.aspx?Section=282

Graduation Requirements

Writing Requirement

Each student must complete the university's writing program requirements as follows:

1. The Tier I writing requirement that consists of either a. or b. below.
    a. one of the following 4-credit Tier I writing courses during the first year: Writing, Rhetoric and American Cultures 101 or 195H; or
    b. the developmental writing courses: Writing, Rhetoric and American Cultures 0102 and 1004 and one 4-credit Tier I writing course during the first year.
2. Based on the English placement mechanism, a student may be required to complete the developmental writing courses prior to enrolling in a Tier I writing course. The developmental writing courses are administered by the Department of Writing, Rhetoric and American Cultures. For additional information, refer to the statement on Academic Placement Tests.
3. First-year students who have taken the College Board Advanced Placement Examination in English should consult the statement on Academic Placement Tests. Transfer students should consult the statement on Transfer Student Admission.
4. For students who are enrolled in James Madison College, the completion of James Madison College 111 satisfies the university Tier I writing requirement.

    For students who are enrolled in Lyman Briggs College, the completion of Lyman Briggs 133 satisfies the university Tier I writing requirement.

    For students who are enrolled in the Residential College in the Arts and Humanities, the completion of Residential College in the Arts and Humanities 111 satisfies the university Tier I writing requirement.
5. The Tier II writing requirement for the student's academic major and degree program. This requirement involves writing in the student's discipline and is met by completing either:
    a. one or more 300–400 level Tier II writing courses as specified for the student's academic major and degree program, or
    b. a cluster of 300–400 level courses that involve writing experiences and that are approved as the Tier II writing requirement for the student's academic major and degree program.

University of Minnesota

https://onestop.umn.edu/academics/undergraduate/lib-ed-requirements-overview/liberal-education-requirements#:~:text=First%2DYear%20Writing%3A%20All%20students,Writing%20Intensive%20(WI)%2

0courses.

Liberal Education Requirements

The University of Minnesota and its faculty are committed to providing an education that invites you to investigate the world from new perspectives, learn new ways of thinking, and grow as an active citizen and lifelong learner. The University's liberal education requirements for all students are designed to be integrated throughout your four-year undergraduate experience. These courses provide you an opportunity to explore fields outside your major and complement your major curriculum with a multidisciplinary perspective.

- Search for courses that fulfill your liberal education requirements
- Reference the Class Search when planning your degree
- Look up a program to find degree requirements

Current liberal education requirements

If you were admitted to a degree program in fall 2010 or later, you will follow the revised liberal education requirements listed below. However, if you are a student admitted prior to fall 2010, you will continue to follow the liberal education requirements prior to fall 2010 that were current when you were admitted.

The University of Minnesota's writing requirement has two components: First-Year Writing and Writing Intensive courses.

- First-Year Writing: All students are expected to complete the first-year writing requirement (WRIT 1301, 1401, or equivalent) within their first two semesters of registration.
- Writing Intensive: In addition to the first-year writing requirement, students must complete four Writing Intensive (WI) courses. These courses help students understand what it means to write in various disciplines. Two of the four courses must be completed at the upper-division (3xxx or higher) level, and one of the two upper-division courses must be within a student's major field of study.

University of North Carolina

https://catalog.unc.edu/undergraduate/ideas-in-action/

First-Year Foundations

Start strong! This is a set of special courses and experiences in the first year designed to help students navigate their transition to the college environment, get them ready to take ownership of their education, and make the most of the opportunities at Carolina.

Students must complete the First-Year Foundation requirements during the first academic year on campus (two semesters), with the exception of Global Language. Students are strongly encouraged to begin Global Language during their first year.

First-Year Foundations	

IDST 101 College Thriving [H, 1]	1
First-Year Seminar or First-Year Launch[1]	3
Triple-I and Data Literacy[1]	4
ENGL 105 or ENGL 105I English Composition and Rhetoric / Interdisciplinary	3
Global language through level 3[2]	Varies
Total Hours	**11**

H Honors students may use HNRS 101 to fulfill the College Thriving requirement.

[1]Must be completed at UNC–Chapel Hill. Transfer credit and by-examination credit are not awarded.

[2]Some majors require additional levels. Students are strongly encouraged to begin Global Language during their first year.

Transfer students who completed at least 24 hours of post-high school transfer credit are required to complete ENGL 105 (or ENGL 105I) and Global Language, but not the other First-Year Foundation requirements. Test credit (e.g., AP, IB, SAT II) does not apply to this calculation. More information for transfer students, early college Students, and transfer credit from a North Carolina community college can be found in this catalog.

Additional First-Year Foundation Policies

- Courses used to satisfy First-Year Foundation requirements may not be declared Pass/Fail. This includes level 1, level 2, and level 3 language courses being used to fulfill the Global Language (through level 3) requirement. Note that IDST 101 is only offered as Pass/Fail.
- Students may take and receive credit for only one course in each of the following requirement categories: 1) College Thriving (IDST 101), 2) First-Year Seminar or First-Year Launch, 3) Triple-I + Data Literacy, 4) ENGL 105 or ENGL 105I.
- All First-Year Foundation requirements must be satisfied by taking courses at UNC–Chapel Hill, with three exceptions:
    - UNC faculty-led First-Year Seminars awarding UNC graded credit in study abroad programs may be used to satisfy the First-Year Seminar requirement.
    - ENGL 105 may be satisfied with transfer credit, but not with by-examination (BE) credit.
    - Global Language may be satisfied with college transfer credit, UNC language placement test credit (PL), by-examination (BE) credit, or from prior educational experience. Additional information can be found in this catalog and on the Language Placement website.
- Students must maintain continuous enrollment in Global Language courses until they have completed the requirement. See "Continuous Course Enrollment" section in this catalog.

- Students are not permitted to drop ENGL 100, ENGL 105, ENGL 105I, or Global Language levels 1 through 3 being used to fulfill the Gen Ed requirement after the second week of the semester, unless approved by a dean in the Academic Advising Program. See "Continuous Course Enrollment" section in this catalog.
- Students are not permitted to drop only Triple-I and not the data literacy lab (or vice versa). These are enforced corequisite courses that must be taken together.
- A First-Year Seminar/First-Year Launch course may overlap with one or more of the following Gen Ed requirements: 1 Focus Capacity (+Lab), Research and Discovery, High-Impact Experience, Communication Beyond Carolina.

Ohio State University
https://english.osu.edu/writing-programs/fyw-curriculum
First-Year Writing Curriculum

The First-Year Writing Program at The Ohio State University consists of the courses English 1110.01, English 1110.02 and English 1110.03. All three of these courses fulfill the university's first General Education Writing and Related Skills requirement, though each is structured slightly differently to respond to the needs of a range of students.

English 1110.01 or 1110.02: First-Year English Composition

- English 1110.01 provides exposure to and practice of critical analysis through extensive writing practice and intensive reading of student- and professionally-authored texts.
- English 1110.02 differs from English 1110.01 in that the course readings are primarily literary texts.

Both 1110.01 and 1110.02 meet the GE writing requirement.

English 1110.03: First-Year English Composition
Students can place directly into 1110.03 from the placement test or take this course following successful completion of 1109. Enrollment in English 1110.03 is limited to no more than 15 students.

The curriculum of 1110.03 is aligned with the curriculum of all 1110 courses, and students who complete this course receive credit for the first GE writing requirement.

English 1193
Students in 1110.03 concurrently enroll in English 1193, a one-hour companion course that provides additional tutoring and support. The requirements of 1193 may vary by campus, so check with your instructor about expectations for 1193.

English 1109: Intensive Writing and Reading
These four-hour courses meet four days each week for 55 minutes each day. 1109 is a small class with no more than 15 students. Individual syllabi vary somewhat, but most sections ask students to investigate a theme through intensive writing and reading. The goal of this course is to give students intensive practice with college-level reading and writing projects. After completing 1109, students enroll in 1110.03.

1109 does not meet the GE writing requirement.

Ohio State University
https://advising.osu.edu/general-education-requirements
General Education Requirements

The Ohio State University is committed to educating students for life as well as for their future careers. The university's General Education (GE) requirements are a vital piece of their education that every undergraduate student at Ohio State shares, regardless of major. It is designed to enhance a student's technical training for a career in a specific field with other skills that will make them a well-rounded person. These include skills such as communication, critical analysis, and cultural awareness.

In Autumn 2022, the university implemented **a new set of GE requirements** for most new students. Students who enrolled at Ohio State before Autumn 2022 continue to complete their "**General Education - Legacy**" courses.

More Information

The Legacy GE (GEL) is based on the same categories of classes across the university, with slight variations for each college,major, and/or program of study (for example: Honors students or students pursuing aan AA/AS may have different requirements).

You may be able to use some GE coursework to meet some of your major requirements, too. To learn more about your specific requirements (especially those for GEL), please click on your college link below. *If you are unsure of what college you are in, you can **search for your major here** and find the college in the middle column.*

Writing and Information Literacy is 3 units for each, but different course options.

Pennsylvania State University
https://bulletins.psu.edu/undergraduate/general-education/domains/
Foundations and Knowledge Domains

WRITING AND SPEAKING (GWS)

In Writing and Speaking (GWS) courses, students do more than improve their abilities to communicate information clearly. They learn to set forth arguments persuasively and well, both orally and in writing. Students should emerge from their GWS courses as more accomplished writers and speakers, competent in a wide variety of settings.

To help students achieve GWS goals, the University provides GWS courses and an appropriate learning environment that will:

- provide opportunities for students to become increasingly effective communicators as they enter new contexts and address new audiences;

- provide opportunities for students to become increasingly accomplished in written, oral, digital, and visual communication.

GWS STUDENT LEARNING CRITERIA

Upon successful completion of the General Education Writing and Speaking requirements, students will have increased their abilities to:

- demonstrate rhetorical and analytical skills as they explore, compose, interpret, and present a variety of texts;
- communicate effectively and persuasively to a range of audiences;
- demonstrate capacities for critical thinking, listening, and generating ideas;
- demonstrate proficiency in composing processes;
- employ the conventions of both spoken and written communication with sensitivity to context and venue.

ADTED 100	Adult Learners in the University	3
AIR 352	Leading People and Effective Communication II	3
BE 391	Communication Skills for BE and BRS Students	2
BE 392	Leadership Skills for BE and BRS Students	2
BIOL 403	Biological Writing and Communication for Research	3
BMB 591	Undergraduate Research in Cellular Dynamics II: Communicating Scientific Findings	3
BRS 391	Communication Skills for BE and BRS Students	2
BRS 392	Leadership Skills for BE and BRS Students	2
CAS 100A	Effective Speech	3
CAS 100B	Effective Speech	3
CAS 100C	Effective Speech	3
CAS 100S	Effective Speech	3
CAS 137H	Rhetoric and Civic Life I	3
CAS 138T	Rhetoric and Civic Life II	3
EMSC 100S	Earth and Mineral Sciences First-Year Seminar	3
ENGL 15	Rhetoric and Composition	3
ENGL 15A	Rhetoric and Composition	3
ENGL 15E	Rhetoric and Composition Enhanced	3
ENGL 15S	Rhetoric and Composition	3
ENGL 30H	Honors Rhetoric and Composition	3
ENGL 30T	Honors Freshmen Composition First-Year Seminar	3
ENGL 137H	Rhetoric and Civic Life I	3
ENGL 138T	Rhetoric and Civic Life II	3
ENGL 202A	Effective Writing: Writing in the Social Sciences	3
ENGL 202B	Effective Writing: Writing in the Humanities	3
ENGL 202C	Effective Writing: Technical Writing	3

ENGL 202D	Effective Writing: Business Writing	3
ENGL 202H	Effective Writing: Honors	3
ESL 15	ESL Composition for American Academic Communication	3
GEOSC 435	Geoscholarship	3
HIST 297N	Special Topics - Inter Domain	1-9
MATSE 203	Technical Communications	3
WMNST 297N	Special Topics	1-9

Pennsylvania State University
https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/
Baccalaureate Degree General Education Requirements

The baccalaureate degree General Education program consists of 45 credits that are distributed among four General Education components:

- Foundations courses in writing, speaking and quantification (15 credits)
- Knowledge Domain breadth in the Arts, Humanities, Natural Sciences, Social and Behavioral Sciences, and Health and Wellness (15 credits)
- Integrative Studies bridging commonality and intersections in learning (6 credits)
- Exploration within General Education (9 credits)

A summary of the applicable attributes to determine if a course satisfies a requirement is available on the University Course Description page. The keystone symbol appears by the title of any course that is designated as a General Education course. Program requirements that may also satisfy General Education requirements vary for each program and is detailed on each degree requirements page.

All General Education courses are to help students explore and integrate information beyond the special focuses of their majors. Students may not meet the General Education Breadth in Knowledge Domains and Exploration components by taking courses in the department or program identical to that of the academic major. For example, an Economics major may not use an ECON course or a course cross-listed with ECON to fulfill a General Education requirement. The Integrative Studies requirement is not subject to this policy.

The General Education requirements for students who enrolled at Penn State prior to Summer 2023 can be found in the Archive.

BACCALAUREATE DEGREE REQUIREMENTS

FOUNDATIONS

Total 15 credits

Requirement	Credits
Writing/Speaking (GWS) *§	9

Quantification (GQ) *†§	6

* Requires a grade of C or better.

§Inter-Domain courses may not be used for this requirement.

†3-6 credits are selected from mathematics, applied mathematics, and statistics; 3 credits may be selected from computer science or symbolic logic.

Texas A&M University
https://writingcenter.tamu.edu/undergrads/w-c-courses
W & C Courses

TAMU undergraduates must pass two approved courses in their major that fulfill the graduation requirement for writing and oral communication. Students may opt to take one W (writing) course and one C (communications) course or two W courses.

If you are not sure whether a course is approved for your major, check with your academic advisor. If you are a double major, you need to fulfill the requirement in one of your majors. That means you need two courses in one major, not one in each or two in each.

The W/C graduation requirement may not be met by any course listed as a University Core Curriculum communication requirement. In addition to taking the W/C courses, students must fulfill the 6-credit hour Core Curriculum Communication requirement.

Texas A&M University
https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#text
University Core Curriculum

Communication – 6 SCH

COMM 203	Public Speaking	3
COMM 205	Communication for Technical Professions	3
COMM 243	Argumentation and Debate	3
ENGL 103	Introduction to Rhetoric and Composition	3
ENGL 104	Composition and Rhetoric	3
ENGL 203	Writing About Literature	3
ENGL 210	Technical and Professional Writing	3

Courses in this category focus on developing ideas and expressing them clearly, considering the effective of the message, fostering understanding, and building the skills needed to

communicate persuasively. Courses involve the command of oral, aural, written, and visual literacy skills that enable people to exchange messages appropriate to the subject, occasion, and audience. The following skills will be addressed in the courses that comprise this area: critical thinking, communication, team work, and personal responsibility.

University of Texas-Austin

https://catalog.utexas.edu/general-information/academic-policies-and-procedures/core-curriculum/#text

Core Curriculum

English Composition and Writing Flag

Six hours are required.

> Rhetoric and Writing 306

Nonnative speakers of English may take Rhetoric and Writing 306Q instead of Rhetoric and Writing 306. Students in the Plan II Honors Program may take English 303C or Tutorial Course 303C instead of Rhetoric and Writing 306.

> A three-hour course with a Writing Flag designation

The Writing Flagged course counted toward this area of the Core Curriculum may also be used to satisfy other Flag and major requirements outside the Core Curriculum, but may not be used to satisfy any other requirement of the Core Curriculum.

University of Washington-Seattle

https://advising.uw.edu/degree-overview/general-education/english-composition/#:~:text=Grade%20required,the%20School%20of%20Social%20Work.

English Composition

There are many different composition courses that will fulfill your English Composition (C) Requirement. All are 5-credit courses. Some are linked to other courses, and the papers you write in the English Composition course are the papers required by the companion course. Because the vast majority of college courses require writing, you should plan to complete this requirement during your freshman year.

Grade required

Most colleges and schools require you to have at least a 2.0 in your English Composition course, including the College of Arts and Sciences, the College of the Environment, the Information School, the School of Medicine, the School of Nursing, and the School of Social Work. The course may not be taken with the satisfactory/not satisfactory (S/NS) grading option. There are some exceptions for transfer students.

Placement

The UW does not have a placement test for English Composition. The 100-level composition

courses are all at the same level; ENGL 198, for example, is not a more advanced course than ENGL 131. The courses vary in topic and in approach to writing instruction. Consult the Course Descriptions or an adviser for more information.

No overlap
The course you use to satisfy the English Composition requirement does not also count toward the additional writing requirement. Nor do any of the courses count toward the Areas of Inquiry requirement. Your English Composition course may count toward your major, but this is rare.

AP and IB
The UW grants general elective credit for AP and IB English, they cannot be used to satisfy either the English Composition or Additional Writing requirement.

For transfer students
English Composition courses that transfer as at least 4.5 credits may be used to satisfy this requirement and should be marked "C" on your transfer evaluation. You can also combine two 3-credit English Composition courses. If you completed an English Composition course that didn't transfer as a UW-designated English Composition course, and is not marked "C," consult an adviser.

If you took your English Composition course(s) pass/fail at another college *before you were a UW student*, you are allowed to count it toward the requirement. Also, if the course was available only on a non-graded basis, you are allowed to count it toward the requirement no matter when you completed it.

You can check the UW Equivalency Guide for Washington Community and Technical Colleges to determine which courses from Washington community colleges count toward the UW's English Composition requirement; they are marked in the lists with a "C."

For postbaccalaureate students
Postbaccalaureate students are not required to complete the English Composition requirement.

Registration restrictions
Students with composition (“C”) credit in English 111, 121, or 131 (i.e. students who receive a grade of 2.0 or higher in any of these courses) are prevented from enrolling in a second course in this series.

In exceptional cases, students will be able to petition the English department for permission to register for a second 111, 121, or 131 course. Students who have successfully completed ENGL 109/110 or any of the Interdisciplinary Writing Program courses (ENGL 197, 198, 199) will not be similarly restricted from enrolling in ENGL 111, 121, or 131.

Transfer students who have 10 or more credits of courses deemed equivalent to ENGL 111, 121, or 131 will not lose credit as a result of this policy.

classes#:~:text=Composition%3A%20the%20UW%20requires%205,few%20specialized%20upper%2Ddivision%20courses.

Registration Policies for English Classes

A note on the English Composition requirement and the "W" Additional Writing requirement

Composition: the UW requires 5 credits in an approved English composition course. Only a small number of courses are approved, and they include C LIT 240, ENGL 109 + 110, ENGL 111, 121, 131, 182, 197, 198, 199, 297, 298, 299, HONORS 205, HONORS 305, and a few specialized upper-division courses. You need to complete **just one** 5-credit course from this group in order to fulfill this requirement. English composition, or "C" credit, is a fixed general education designation for courses in this group: if a course counts for "C" credit, it does so every quarter.

University of Wisconsin-Madison

https://policy.wisc.edu/library/UW-1059

General Education Requirements for Undergraduate Degrees

Communication, 3 to 5/6 Credits

The **Communication** requirement helps to ensure that all graduates of UW–Madison acquire essential communication and research-gathering skills necessary for success in university coursework and beyond. Communication–A (**Comm–A**) and Communication–B (**Comm–B**) courses train students to gather and assess information from a variety of sources and to present different kinds of information, insight, and analysis to diverse audiences. These courses are essential for students' career success and their preparation for public life in a rapidly changing world. While Comm–A courses focus exclusively on essential communication skills, Comm–B courses provide content instruction in a specific discipline and teach research, writing, and speaking skills in conjunction with the course content. Comm–B courses are offered by departments across campus and vary widely in topic, content, and format.

Learning Outcomes

Students develop skills that enable them to be effective speakers and writers in and out of the classroom. In courses satisfying the Communication requirement, students will:

- Make effective use of information retrieved, organized, and synthesized from appropriate sources
- Present ideas and information clearly and logically to achieve a specific purpose
- Make effective use of communicative forms appropriate to a specific discipline and adapted to the intended audience
- Use appropriate style and conventions associated with particular communicative forms, genres or disciplines

To achieve these outcomes, students must complete the following Communication requirements:

- **Part A. Literacy Proficiency.** 2–3 credits at the first-year level dedicated to reading, listening, and discussion, with emphasis on writing. While most incoming freshmen are required to complete coursework to fulfill this requirement, students may be exempted from Part A by approved college coursework while in high school, AP test scores, or placement testing. Students are expected to satisfy this requirement by the end of their first year of undergraduate study.

  Learning Outcomes

  - Use the four modes of literacy: writing, speaking, reading, and listening to formulate strategies for critical thinking
  - Use information-seeking skills to demonstrate the four modes of literacy

- **Part B. Enhancing Literacy Proficiency.** 2–3 credits of more advanced coursework for students who have completed or been exempted from Part A. Students should consult with the appropriate undergraduate advisor about when this requirement should be completed. Courses that satisfy this requirement are offered in many fields of study; although a wide variety of courses fulfill this requirement, students are encouraged to select a course most in keeping with their interests or other requirements of their intended field(s) of study.

  Learning Outcomes

  - Identify and make skillful use of relevant, reliable, and high-quality research sources appropriate to the course subject and discipline
  - Make productive use of the writing process, including brainstorming, outlining, drafting, incorporating feedback, and revising, to develop a fledgling idea into a formal paper, presentation, and/or project
  - Share research, course content, or creative activity in writing and at least one other mode of communication relevant to the discipline. Other modes of communication might include presentations using one or more media, debate, discussion, poster presentations, and other forms of expression that convey course content

  Please note: Because English is the language of instruction at UW–Madison, Communication A and B courses are taught in English, and student work in them is also completed in English.

University of Wisconsin – Madison
https://dept.writing.wisc.edu/wac/criteria-for-communication-a-courses/
Criteria for Communication A Courses

The university's criteria, objectives, and guidelines for Communication-A courses.

So what happens in the Comm-A course? What skills should you expect your students to have mastered upon coming to a Comm-B class? These questions are more easily asked than

answered since not every student will have an “ideal” Comm-A experience. (In fact, you may even have students who come to your course without yet having a Comm-A course.) But there are some things with which the average Comm-A student should be familiar.

The overall objective of a Comm-A course is to develop students’ abilities in writing and public speaking for exposition and argumentation. The courses vary in emphasis, but, across the board, the class size is about 20.

Comm-A courses stress frequent assignments in writing and speaking totaling 25-30 pages of clear, revised prose (including at least one researched essay and several prepared oral presentations) and completion of the information component developed in conjunction with the campus library user education program.

In addition to evaluations of student work by individual instructors, each course has an assessment plan to demonstrate that the course meets the Comm-A objectives.

Courses at UW-Madison That Satisfy the Comm-A Requirement

- Communication Arts 100
- Communication Arts 181 (honors)
- Engineering Professional Development 155
- English 100
- English 118
- Life Sciences Communication/Family and Consumer Sciences 100

The following is a more detailed breakdown of some of the specifics students should learn upon completion of a Comm-A course:

Planning:

- Selecting, narrowing, and focusing topics
- Identifying and analyzing audience information needs
- Generating and organizing ideas
- Comprehending and analyzing texts

Drafting:

- Learning structures of exposition and argument and the use of evidence
- Organizing and developing paragraphs, papers, and speeches
- Adapting writing and speaking for intended audiences
- Learning conventions of academic writing
- Mastering elements of grammar, usage, and style
- Preparing speeches for oral delivery
- Citing sources, avoiding plagiarism, and compiling accurate bibliographies

Revising:

- Developing critical skills for reading and listening—in review of peer writing/speaking
- Revising and editing essays and speeches—for spelling, punctuation, grammar, style, organization, and logic
- Critiquing assigned readings and speeches delivered outside class

Information-Seeking Skills and Strategies:

- Identifying and retrieving source materials needed to evaluate, organize, and select information from print and electronic sources
- Acquiring basic critical, technical, and mechanical skills needed to find relevant information

We hope you'll talk with your students about these requirements along with their individual Comm-A experiences.