<h1 style="text-align:center">Measurable Learning Outcomes in Project-Based Learning</h1>

The following learning outcomes are general. In any given project, faculty will guide students to achieve more specific versions of these outcomes. For example, several of the following outcomes mention problem solving. In any given project, the nature of the problem to be solved will fall along of continuum of general-to-specific.

For any project, faculty could request any combination of General Studies designations. Students can demonstrate the following learning outcomes via the work that they do on the project. However, faculty may wish to give students opportunities to demonstrate additional learning by asking students to construct ePortfolios in which they make the following case: "In light of the learning outcomes for this course, this is what I have learned. Further, I present the following evidence that I have learned what I claim to have learned. This is appropriate evidence because . . . ."

See "General Studies Designation Request Forms" (https://provost.asu.edu/generalstudies/gsdforms) for current General Studies language.

General Studies Category	Current General Studies Language	Proposed Learning Outcomes: Students will demonstrate that they can
Literacy and Critical Inquiry (L)	Literacy is here defined broadly as communicative competence—that is, competence in written and oral discourse. Critical inquiry involves the gathering, interpretation, and evaluation of evidence. Any field of university study may require unique critical skills that have little to do with language in the usual sense (words), but the analysis of written and spoken evidence pervades university study and everyday life. Thus, the General Studies requirements assume that all undergraduates should develop the ability to reason critically and communicate using the medium of language.	craft writing to meet the needs of specific audiences for specific purposes in specific situations. gather, interpret, and evaluate evidence, which they will appropriately integrate into their writing. **base decisions on analysis of evidence, logic, and ethics.
Mathematics (MA)	The Mathematical Studies requirement is intended to ensure that students have skill in basic mathematics, can use mathematical analysis in their chosen fields, and can understand how computers can make mathematical analysis more powerful and efficient.	apply mathematical analysis to solve problems that they encounter in their academic, professional, and personal lives.
Computer/Statistics/ Quantitative Applications (CS)	The Computer/Statistics/Quantitative Applications [CS] requirement, which ensures skill in real world problem solving and analysis, requires the student to complete a course that uses some combination of computers, statistics, and/or mathematics	use digital technologies to solve problems and complete projects in their academic, professional, and personal lives. apply statistical tools for organizing, analyzing, evaluating, and interpreting data.
Humanities, Arts, Design (HU)	The **humanities** develop values of all kinds by making the human mind more supple, critical, and expansive. They deepen awareness of the diversity of the human heritage and its traditions and histories and they	design and conduct humanities research for specific purposes. interpret a wide range of written, aural, visual, and

	may also promote the application of this knowledge to contemporary societies. The study of the **arts and design**, like the humanities, deepens the student's awareness of the diversity of human societies and cultures. The arts have as their primary purpose the creation and study of objects, installations, performances and other means of expressing or conveying aesthetic concepts and ideas. The past and present accomplishments of artists and designers help form the student's ability to perceive aesthetic qualities of art work and design	multimodal texts. use ideas from a wide range of texts to explain human experience.
Social-Behavioral Sciences (SB)	Social-behavioral sciences use distinctive scientific methods of inquiry and generate empirical knowledge about human behavior, within society and across cultural groups. Courses in this area address the challenge of understanding the diverse natures of individuals and cultural groups who live together in a complex and evolving world.	**design and conduct social-scientific studies for specific purposes. use social-scientific research and theory to describe and interpret the behavior of humans as individuals and as members of groups.
Natural Sciences (SQ/SG)	Public scientific literacy, critical for sound decisions on scientifically infused issues such as climate change, includes understanding of basic science concepts, such as the fundamental behavior of matter and energy. It also includes the understanding that "science" is not an encyclopedic collection of facts. Rather, it is a process of exploration that embraces curiosity, inquiry, testing, and communication, to reduce uncertainty about nature.	**use scientific reasoning to gather, evaluate, and interpret evidence. **design and conduct scientific studies for specific purposes.
Cultural Diversity (C)	The objective of the Cultural Diversity requirement is to promote awareness and appreciation of cultural diversity within the contemporary United States through the study of the cultural, social, or scientific contributions of women and minority groups, examination of their experiences in the U.S., or exploration of successful or unsuccessful interactions between and among cultural groups.	explain features of cultural diversity in the United States. explain the origins of cultural diversity in the United States. use inclusive language in writing and speaking.
Global Awareness (G)	The Global Awareness Area recognizes the need for an understanding of the values, elements, and social processes of cultures other than the culture of the United States. Learning which recognizes the nature of others cultures and the relationship of America's cultural system to generic human goals and welfare will help create the multicultural and global perspective	***analyze global problems from multiple perspectives (e.g., scientific, social-scientific, humanistic, cultural). ***propose solutions to global problems. ***apply democratic principles to diverse global contexts.

	necessary for effective interaction in the human community	
Historical Awareness (H)	From one perspective, historical awareness is a valuable aid in the analysis of present-day problems because historical forces and traditions have created modern life and lie just beneath its surface. From a second perspective, the historical past is an indispensable source of identity and of values, which facilitate social harmony and cooperative effort. Along with this observation, it should be noted that historical study can produce intercultural understanding by tracing cultural differences to their origins in the past. A third perspective on the need for historical awareness is that knowledge of history helps us to learn from the past to make better, more well-informed decisions in the present and the future	gather, evaluate, and interpret historical evidence from primary and secondary sources. use historical information to describe their identities and values. research and explain the historical origins of contemporary institutions, ideas, movements, etc. design and conduct historical research for a variety of purposes.
*Creative Expression (CE)		use one or more creative tools (e.g., visual art, visual design, dance, music, theatre performance, poetry, fiction, or drama) to express their ideas, to solve real-world problems, and to complete projects.
*Civic Engagement (CVE)		engage with community organizations to solve community problems. design and implement projects to solve to community problems.
*Integrative Interdisciplinary/ Transdisciplinary Skills (IS)		****integrate the aforementioned skills and knowledge sets in multiple combinations to solve problems and complete projects. use research methods that are appropriate for the task at hand (e.g., scientific, social-scientific, historical, textual) complete projects by working in interdisciplinary teams.

*new category

**See AAC&U's "Scientific Thinking and Integrative Reasoning Skills" (STIRS) (http://www.aacu.org/stirs/index.cfm)

***See AAC&U's "General Education for a Global Century" (http://www.aacu.org/SharedFutures/global_century/index.cfm)

****See Lumina Foundation's "Degree Qualifications Profile" (http://www.luminafoundation.org/publications/The_Degree_Qualifications_Profile.pdf)