

## **GE Quantitative Literacy – Course Approval Description**

### **I. Regulations**

The U.C. Davis Requirements for Higher Degrees, Regulation 522, sets forth the Baccalaureate Degree Requirement in General Education. Quantitative Literacy is a component of Core Literacies (522-C). Regulation 523 sets forth the Criteria for General Education Certification of courses, stating: “A course in Quantitative Literacy develops a student’s ability to reason quantitatively and to evaluate quantitative arguments encountered in everyday life.” (523-C-6).

### **II. Interpretation**

The objective of the Quantitative Literacy requirement is to create educated individuals who understand quantitative reasoning and who are capable of evaluating claims and knowledge generated through quantitative methods. All graduates will function at a higher level in their careers and in their roles as informed citizens if they are familiar with the application of quantitative reasoning to natural, social and political systems. The ability to do quick quantitative estimates to test one’s ideas and those produced by others is essential to evaluating the many numerical and statistical claims that are intended to influence thinking and behavior.

A course used to satisfy the Quantitative Literacy requirement addresses the relationships between events occurring in nature or in human social or political systems, measurements made or data collected to study those events, analysis of the data, and implications of the analysis for our understanding of the events.

Education Abroad Program courses may be used to satisfy the GE quantitative literacy requirement if they meet these criteria.

### **III. Implementation**

The following courses should fulfill this requirement. This list currently serves as a starting point for analysis and discussion.

Statistics 10 (STA10): Statistical thinking. (Statistics and probability in daily life.)

Statistics 13 (STA13): Elementary statistics. (Descriptive statistics.)

Statistics 100 (STA100): Applied statistics for biological sciences.

Statistics 103 (STA103): Applied statistics for business and economics.

Agricultural and Resource Economics 15 (ARE15): Economic basis of the agricultural industry

Anthropology 13 (ANT13): Scientific method in physical anthropology

Biological Sciences 20Q (BIS 20Q): Modeling in biology. (Application of quantitative methods to biological problems.)

Economics 1A (ECN1A): Principles of microeconomics

Economics 1B (ECN1B): Principles of macroeconomics

Education 114 (EDU114): Quantitative methods in educational research

Math 17 (MAT17A, B, C): Calculus for Biology and Medicine (Introduction to differential calculus via applications in biology and medicine.)

Mathematics and Physical Sciences 1 (MPS1): Science in the News

Plant Sciences 120 (PLS 120): Applied Statistics in Agricultural Science (formerly AMR120)

Political Science 51 (POL51): Scientific Study of Politics.

Psychology 41 (PSC41): Research methods in psychology.  
Sociology 46B (SOC46B): Introduction to Social Research.

Most courses in the physical sciences and engineering and a substantial portion in the biological sciences already make heavy use of quantitative reasoning. Each major in those areas must identify one or more required courses that meet the criteria for Quantitative Literacy and ensure that applications are submitted for the designation.

A list of engineering courses meeting the criteria in part II was prepared by the Associate Dean for Undergraduate Studies, College of Engineering. ENG 6, 106, 180. EAD 115. EBS 130. BIM 107, 108. ECM 5, 6. ECH 140. ECIV 19, 114, 119, 130, 131, 146. ECS 30, 40, 110, 120, 122AB, 129, 130. EEC 100, 150AB, 160. EME 5, 151, 152, EAE 126.

#### **IV. Guiding Questions**

1. Relevance and specific content: How does this course address the relationships between events occurring in nature or in human social or political systems, measurements made or data collected to study those events, analysis of the data, and implications of the analysis for our understanding of the events.
2. Approach: How does the course enable students to develop their skills in quantitative reasoning and evaluating claims and knowledge generated through quantitative methods?
3. Assessment: By what means will the instructor assess whether students have achieved these goals (e.g. homework, presentations, papers, exam questions)?