Appendix H:  
Course Expectations, Student Learning Outcomes, and Links to Goals for Upper-Division General Education

All students must complete a total of nine units with one course in each of the following CSU-mandated groupings of domains of knowledge and inquiry: (1) Upper Division Physical and/or Life Sciences (Area UD – B), (2) Upper Division Arts and/or Humanities (Area UD – C), and (3) Upper Division Social Sciences (Area UD – D). These subject designations come from Executive Order 1033, “CSU General Education Breadth Requirements,” which governs general education requirements in the California State University system. We interpret the subject area distinctions of EO 1033 as domains of knowledge with distinct methods of inquiry rather than categories that can be defined by college, department, or program designations. Courses that meet the student learning outcomes identified for an area will be approved for that area, regardless of the disciplinary designation of the unit originating the proposal.

There are three options for students to complete the Upper Division General Education Requirement: Integrated Studies, Study Abroad, and Disciplinary Perspectives. Details about each of these options appear in the section below titled “Three Options for Completing Upper Division General Education,” but immediately following is a list of course expectations and student learning outcomes, which pertain to all three options.

I. Upper Division Physical and/or Life Science (Area UD – B)

To be certified by the Baccalaureate Requirements Committee as meeting the upper-division physical and/or life science (UD – B) general education requirement,

1) The course must be open to all students, regardless of major, who meet the prerequisites. Students shall not be held to prerequisites that are not specified in the current online University Bulletin. Prerequisites must not unduly restrict access and are restricted to upper division standing or one of the following:
   • lower division general education course(s);
   • other upper division general education courses when the courses are sequenced;
   • individual course placement tests;
   • generic course prerequisites (e.g., a psychology course, a biology course, a history course and so forth); or
   • equivalents to the above;

2) At least one of the assignments shall involve (a) utilizing a plan for acquiring and recording information employing advanced search strategies to examine a wide variety of potential sources, including library resources; (b) articulating and applying advanced criteria in evaluating information and sources, including distinguishing scholarly/non-scholarly information and primary/secondary sources; (c) properly using and citing the information in assignments; and (d) formulating arguments and/or theories supported by information from multiple sources;

3) The course syllabus must include references to assignments that are described above as part of the course expectations;
4) The course syllabus must list the university-approved student learning outcomes for upper division physical and/or life science and link them to activities and/or assignments that students complete to demonstrate they have met the outcomes;

5) Students will be given an opportunity to explore how scientific knowledge can be applied to their own lives and to ways in which they could contribute purposefully to the well-being of their local communities, their nations, or the people of the world; to social justice; and/or to the sustainability of the natural environment; and

6) Students in the course will develop knowledge of the physical universe and/or its life forms.

**Student Learning Outcomes for Upper Division Physical and/or Life Science (3 units)**

After completion of an upper division general education course in physical and/or life sciences, students will be able to:

1) apply scientific methods of inquiry and analysis (such as hypothesis testing, systematic and reproducible observations, and the analysis of measurable data) to the physical universe, including either living or nonliving systems;

2) articulate how scientific theories and practices come to be accepted, contested, changed, or abandoned by the scientific community;

3) evaluate the quality of scientific information and claims on the basis of their source and the methods used to generate the information or claims;

4) construct coherent and sound arguments with support from multiple sources, including library resources and proper citations, to support or contest a scientific theory; and

5) analyze the connection of scientific research, discoveries and applications to personal, social or ethical issues in the modern world.