

BFI Major Requirements Project
 Criteria for a Strong Faculty Review Rationale

The goal of the Major Requirements project is to ensure both that the upper division course requirements are appropriate for today’s and tomorrow’s graduates in the major and also that the required upper division course are as small in number (or units or both) as possible.

The current universal benchmark for the review of undergraduate majors (except engineering majors*) is that the total number of upper division units required by the major can be completed is no more than one year of full-time academic work on a given campus and preferably in less than one year. It is understood that required upper division course will not all be taken in one year and some may be taken while a student is officially in the lower division. It is also understood that for some majors there are very good reasons for having requirements take more than one year to complete.

In reviewing the top 75% of majors, UCOP has asked that faculty provide a strong rationale when the outcome of the faculty review of the major resulted in both no reduction of courses or units of the upper division requirements and also the required upper division units are greater than the equivalent of one full year of academic work.

A strong rationale demonstrates a good faith review by including elements of the following:

- 1) **A description of the review process** - Detail actions taken by the faculty to review the major and determine that the current course/unit requirements should remain unchanged, i.e. a department meeting and resulting decision related to the Major Requirements Project review.
- 2) **Evidence of research** – A description of how the major requirements compare to that of peer institutions, and/or expectations of graduate institutions or future employers
- 3) **A list of restrictions on altering major requirements** – This could be an analysis of the types and amount of coursework needed to prepare an undergraduate in the major. This might also include a relevant professional/accrediting organization’s requirements or conditions. Faculty may also chose to include any other reasons for the resulting review decision about upper division requirements.

Examples of a strong rationale:

1. Bioengineering, B.S.

Before Review Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
19	19	70	70	19	19	70	70

*See ‘Major Requirements for Engineering – 2-10-16’

“We took into consideration the following: 1. There is an ABET requirement for an accredited Bioengineering program to have engineering/science components of 1.5 years, referring to upper division classes. 2. Recently the Department of Chemistry has approved moving the CHEM112A,B,C (12 units) series from upper to lower division, which affects our program by eliminating 12 upper division units. 3. Our Bioengineering undergraduate program was recently revised (both lower and upper division), and revisions are approved. During this revision, the following upper division changes were implemented: a. BIEN101 (4 units) replaced BCH100 (4 units) in fall of junior year. This change is beneficial to the students because they can now take a Quantitative Biochemistry (BIEN101) course, tailored to the needs of bioengineers and offered by the Department of Bioengineering, instead of the Elementary Biochemistry (BCH100) course, previously offered by the Department of Biochemistry. This change resulted to elimination of the old CHEM112C (now CHEM12C), which was a prerequisite/corequisite for BCH100 but not for BIEN101. b. BIEN 175A (2 units) was introduced and replaced BIEN 159 (4 units) in fall of senior year to enhance the student experience and to be in line with top Bioengineering programs. BIEN 175A is now part of a 3-quarter Senior Design series (10 units). Previously core course BIEN 159 is now a technical elective. c. A free elective (not required) was introduced in spring of senior year. 4. The net decrease in (2) and (3) is 14 units. 5. We discussed the possibility for further reduction of units, but this may not be possible without compromising: (i) the capstone series of Senior Design, a core series of courses required for the profession, and (ii) the requirement for 4 technical electives which gives the students the opportunity for specialization. This report was prepared after discussion between Undergraduate Advisor and ABET Coordinator.”

2. Art, B.A. *

Before Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
	11	11	51	52		11	11	51	52

“As requested by Associate Dean Diane Favro on behalf of Provost Dorr, the Department of Art faculty has conducted a comprehensive review of our major requirements relative to considering streamlining upper division requirements. Below is a brief history of the program changes we’ve made over the last few years that have resulted in a reduction of both upper- and lower- division units required to complete the Art major. Effective Fall 2014, we revised the major requirements to reduce upper division Art electives from 10 to 8 units, and overall upper division units from 53-54 units to 51-52 units. Previously, effective Fall 2010, the upper division Art elective requirement was reduced from 15 to 10 units, and in Fall 2004, upper division Art electives were reduced from 16 to 15 units. Additionally, we have expanded the elective course selections, allowing students greater flexibility for completing this portion of the major requirements. In 2010, a revision was approved that would allow students to utilize GE Art History coursework to overlap with the lower division Art History course requirement for the Art major— which lowered the total units required for the major, overall. In our January 21, 2016 Department of Art Curriculum Committee meeting, we again discussed the Challenge 45 proposal and unanimously decided not to further reduce the upper division Art major unit requirements. We believe the Art major curriculum upper division requirement of 51-52 units represents as streamlined a program as possible

while still requiring students to take upper division studio classes across mediums/disciplines. Cutting any more upper division unit requirements would fundamentally and philosophically change the breadth of the curriculum.”

3. Architecture, B.A.

Before Review Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
10	11	46	48	10	11	46	46

“The architecture major is a pre-professional program with two concentrations (design research track or studio track) that prepares our students for continued graduate studies as well as professional careers. Our students receive a BA with a Major in Architecture.

To continue graduate studies for a Master of Architecture, an accredited professional degree, our students are considered for either three/three and a half years of study or two years of study (referred to as 4+2). The 4+2 program accelerates graduate studies for students based on their taking the appropriate undergraduate courses that fulfill accreditation requirements. This is a standard set by the National Architectural Accreditation Board (NAAB). For professional careers as licensed architects, an accredited professional undergraduate (five-year) degree or a professional graduate degree is a pre-requisite for licensure in most U.S. states. California also allows the BA degree plus work experience (a total of 60 net months) to fulfill the requirements to take the licensing exam.

The architecture faculty not only reviewed programs nationally, but also reviewed our program in relation to UCLA. While we have been told that UCLA has streamlined its program, studies there lead to a BA in architectural studies, not architecture, thus it is not a pre-professional program.

As such, based on a review of peer institutions and requirements for accreditation and licensure, the architecture faculty reviewed the major requirements in both concentrations and do not recommend changing the upper division course requirements. We have slightly modified the number of units so both concentrations require the same number of units. These course requirements are appropriate for current and future graduates.”

4. Physics, B.S.

Before Review Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
13	13	65	65	13	13	65	65

“The physics major curriculum was designed to give students the background expected for candidates entering Ph.D. programs in physics. Eliminating upper division courses to get down to the level of 45 units would severely compromise that objective. We did a study of physics programs at non-UC comparison public-universities (as well as at the other UC campuses) and found that the gamut of required courses is

standardized for a physics B.S., and the number of required units at UCSC in the physics major is typical. We do recognize that three of the courses numbered as “upper division” are in our sophomore curriculum. It would make sense to renumber 116A as lower division, since we have redesigned our Math Methods series such that 116A can be satisfied at most community colleges. The Department will be willing to do that when the “stakeholder’s map” is brought back online at UCSC, so that we can see what departments will be impacted by the change. Physics 102 and Physics 116B have no community college equivalents, so it would make less sense to renumber them. In any case, the renumbering would be purely cosmetic—it would not impact time to degree! We add that in the last few years we have been working hard to adjust our curriculum and course offerings to make it feasible for transfer students to complete the physics major in 2 years at UCSC. This included a reduction in upper division units by 5 when we replaced Physics 101AB by Physics 102.”

Examples of a rationale that needs to be revised:

1. Political Science/International Studies, B.A.

Before Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
	16	16	64	80		16	16	64	80

“Requirements for these enhanced majors are by design more stringent. But students can always opt for the “core” Political Science major, if they prefer, or switch back to it later.”

2. Cell Biology, B.S.

Before Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
	12	14	53	58		12	14	53	58

“All of the courses are essential for the major. In fact, at our recent program review it was suggested that additional courses be added.”

3. Animal Science and Management, B.S.

Before Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
	13	14	49	55		13	14	49	55

“The Animal Science and Management major focuses on preparing students for a management career in agribusiness and related industries. The major provides an extensive base of courses in agribusiness, including marketing, economics, and accounting. At the same time, the student receives foundation

courses in the animal sciences. The Animal Science and Management major combines business and science skills and thus courses in business and science courses are both needed to meet the objective of this ****interdisciplinary**** major. These skills prepare the students to enter a variety of careers and positions them to assume leadership roles in the industry.”

4. Ecology and Evolution, B.S.

Before Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units	After Review	Lowest # of Courses	Highest # of Courses	Lowest # of Units	Highest # of Units
	10	10	54	70		10	10	54	70

“Our assessment of courses required to be well trained in Ecology and Evolutionary Biology coupled with the current unit per course structure”