

國外教學改革案例

康乃爾大學藝術與科學學院課程改革
(January 2016-October 2018)

The College of Arts and Sciences, Cornell University



教育部資科司
人文社會與科技前瞻人才培育計畫辦公室
University Foresight Education Project Office

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基本背景

- 藝術與科學學院(College of Arts and Sciences) 自康乃爾大學於1865年創校時即存在，最初被稱為學術部門(Academic Department)，但它於1903年正式更名
- 8,5000位校友
- 4,390位大學部學生
- 1,332位研究生
- 有49%學生是少數族裔或是國際學生
- 545位教職員



系所、學程及研究中心

系所(Department)		學程(Program)		研究中心
<ul style="list-style-type: none"> • Anthropology • Asian Studies • Astronomy • Baroque Organs • Chemistry and Chemical Biology • Classics • Comparative Literature • Ecology and Evolutionary Biology • Economics • English • German Studies • Government • History • History of Art and Visual Studies 	<ul style="list-style-type: none"> • Linguistics • Mathematics • Media Studies • Molecular Biology and Genetics • Music • Near Eastern Studies • Neurobiology and Behavior • Performing and Media Arts • Philosophy • Physics • Psychology • Romance Studies • Science and Technology Studies • Sociology 	<ul style="list-style-type: none"> • American Studies • Archaeology • Asian American Studies • China and Asia-Pacific Studies • Cognitive Science • Cornell Cinema • Environment & Sustainability • Feminist, Gender & Sexuality Studies 	<ul style="list-style-type: none"> • French Studies • Jewish Studies • Latina/o Studies Program • Lesbian, Gay, Bisexual and Transgender Studies • Medieval Studies Program • Milstein Program in Technology & Humanity • Program on Ethics and Public Life • Religious Studies 	<ul style="list-style-type: none"> • Africana Studies and Research Center • Carl Sagan Institute • Center for the Study of Inequality • Institute for Comparative Modernities • Institute for German Cultural Studies • John S. Knight Institute • Language Resource Center • Society for the Humanities



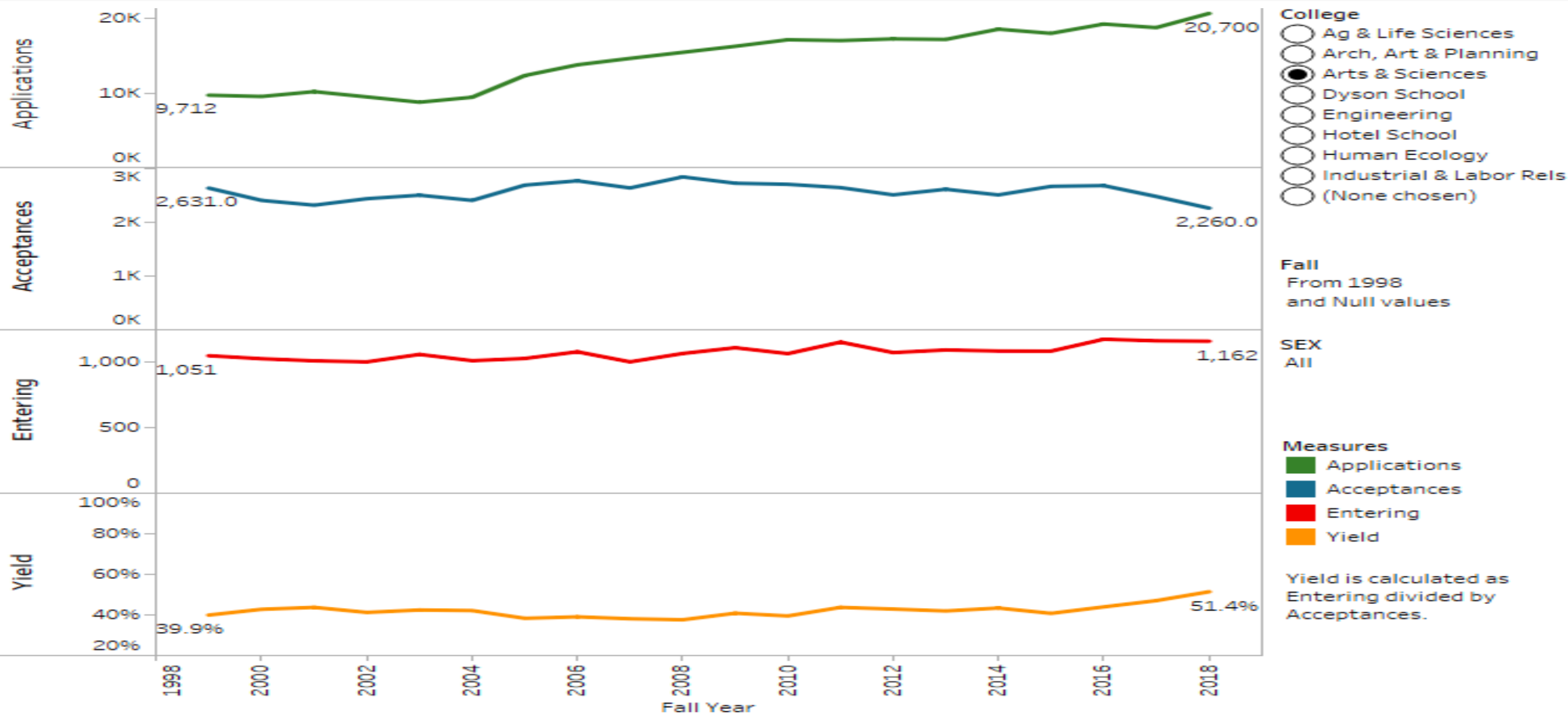
主修和輔系科目

<p>Africana Studies American Studies Anthropology Arabic Archaeology Asian American Studies Asian Studies Astronomy Biological Sciences Biology & Society Chemistry & Chemical Biology China & Asia-Pacific Studies Classical Civilization Classics Cognitive Science College Scholar</p>	<p>Comparative Literature Computer Science Computing in the Arts Creative Writing Crime, Prisons, Education & Justice Dance Earth and Atmospheric Sciences East Asian Studies Economics English Environmental & Sustainability Sciences Feminist, Gender & Sexuality Studies Film French Game Design German Studies Government</p>	<p>History History of Art Independent Major Inequality Studies Information Science International Relations Italian Studies Jewish Studies Latin American Studies Latina/o Studies Law & Society Lesbian, Gay, Bisexual & Transgender Studies Linguistics Mathematics Medieval Studies Minority, Indigenous & Third World Studies Music Near Eastern Studies Performing & Media</p>	<p>Arts Philosophy Physics Portuguese & Brazilian Studies Psychology Public Policy Religious Studies Russian Sanskrit Studies Science & Technology Studies Sociology South Asian Studies Southeast Asian Studies Spanish Statistical Science Theatre Viking Studies Visual Studies</p>
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- 學院提供40個主修科目，59個輔系科目和40多個外語科目
- 學生可以到其他學院修習大約63個輔系科目
- 2/3的課程是在主修科目之外，因此學生可以依自己的興趣設計自己的學習路徑



申請人數和錄取人數



	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Applications	20,700	18,798	19,281	18,027	18,592	17,210	17,284	17,057	17,170	16,288	15,474
Acceptances	2,260	2,476	2,678	2,664	2,505	2,610	2,506	2,641	2,702	2,722	2,840
Entering	1,162	1,165	1,177	1,086	1,087	1,095	1,075	1,155	1,067	1,112	1,068
Yield	51.4%	47.1%	44.0%	40.8%	43.4%	42.0%	42.9%	43.7%	39.5%	40.9%	37.6%

N. B:
Yield is calculated as Entering divided by Acceptances
Entering: students are those who deposited with an intent to enroll.

Source: Cornell University. Institutional Research & Planning
Official, accurate, and unbiased information and analysis.
<http://irp.dpb.cornell.edu/university-factbook/undergraduate-admissions>.
Data extracted on 18 April. 2019



現行畢業要求 (1)

- Two first-year writing seminars (FWS)
A 5 on either the AP English Composition or Literature exam, or a 7 on the IB HL English Literature or Language exam will count towards one of these seminars
- Foreign language requirement
A student must either pass an intermediate Cornell language course at the 2000-level or above or complete at least 11 credits in a single foreign language at Cornell



現行畢業要求 (2)

Distribution requirements(分類必修):

- **Four courses** in Physical & Biological Sciences (PBS-AS) and Mathematics & Quantitative Reasoning (MQR-AS), students must take:
 - ✓ 2 courses in Physical & Biological Sciences (PBS),
 - ✓ 1 course in Mathematics & Quantitative Reasoning (MQR)
 - ✓ 1 course that is either in PBS-AS or MQR-AS.

- 5 Arts & Sciences courses of 3 or more credits from at least 4 of the following social sciences, humanities, and arts categories:
 - ✓ Cultural Analysis (CA-AS)
 - ✓ Historical Analysis (HA-AS)
 - ✓ Knowledge, Cognition, & Moral Reasoning (KCM-AS)
 - ✓ Literature & the Arts (LA-AS)
 - ✓ Social & Behavioral Analysis (SBA-AS)

陳舜芬(2008 , p54)

- distribution requirements (分類選修) 的譯法很分歧，有「均勻要求」、「平均選修」、「分配選修」、「分類必選」、「分布必修」、「分類必修」等多種
- 這種課程安排方式是規定學生選課不能只限於某一個專業領域，而必須從幾類知識領域中各修幾門課，其目標在於拓寬學生在知識上的「廣度」(breadth)，以與主修的「深度」(depth) 相抗擯



現行畢業要求 (3)

- Breadth requirements:
 - Geographic breadth requirement (GB):
One course that focuses on an area or a people other than those of the United States, Canada, or Europe. Courses fulfilling this requirement are marked with a GB in the Class Roster.
 - Historic breadth requirement (HB):
One course that focuses on an historic period before the 20th century
- Major(主修): Requirements will vary by department
- Electives (自由選修): Four or five courses (totaling at least 15 credits), not used to fulfill other requirements (except for Breadth) and not in the major field



現行畢業要求 (4)

- 34 courses:
A full course is 3 or 4 credits and a half course is 2 credits
- 120 credits (100 of which must be from the College of Arts & Sciences)
 - 100 credits in Arts & Sciences is a minimum number, as is the 120 credit total.
 - Students can take more than 20 credits outside of the College as long as they take 100 credits within; they can also take all their credits in Arts & Sciences and accumulate more than 120.



Revamping Curriculum: Timeline

Phase	Time
Building Foundation	January 2016 – July 2016
Activating Discussions College-wide	August 2016 – January 2017
First Draft of Proposal	January 2017 – March 2017
Introducing the Proposal & Gathering Feedback	March 2017 – May 2017
Curriculum Review Committee Report & Second Proposal Draft	August 2017 – April 2018
Final Draft & Proposal Passage	May 2018 - October 2018



Phase 1: Building Foundation January 2016 – July 2016

- Establishment:
 - Curriculum Review Committee (CRC) (composed of 11 faculty members across the arts and sciences, two undergraduates, and a senior associate dean)
- Action (including communication, discussions and dialogue):
 - CRC members meet by sub-committee to work in three areas:
 - ✓ gathering data: information sharing & exchange
 - ✓ drafting requirement ideas and **scenarios**
 - ✓ exploring connections to pedagogy
 - Group discussions with students, advising staff, directors of undergraduate study, and university associate deans group
 - launching as.cornell.edu/curriculum (to serve as public hub for the curriculum discussion)
- Output: Committee reported to the Dean



Phase 2: Activating Discussions College-wide August 2016 – January 2017 (1)

- Establishment:
 - Department and program Liaison Group (formed as a sounding board for the CRC)
- Action (including communication, discussions and dialogue):
 - announced publicly that it is considering curriculum changes and offers **three scenarios** to kick off public discussions and exploration.
 - The President called on colleges to examine their core curriculums by highlighting perspectives on curriculum, pedagogy, and value of Cornell education
 - To discuss the curriculum review process and solicit feedback, the CRC representatives had meetings with
 - ✓ department chairs and program directors
 - ✓ A&S Advisory Council
 - ✓ faculty focus groups
 - ✓ student focus groups
 - ✓ curriculum committees
 - CRC held evolving scenario workshop to start a redraft of the initial scenarios
 - holding college-wide faculty forum



Phase 2: Activating Discussions College-wide August 2016 – January 2017 (2)

- Output(documents):
 - the Liaison Group submitted draft of "Principles of a Liberal Education" for review
 - CRC solicited feedback and synthesized college feedback to date into new structures for core requirements, labeled “evolving frameworks.”
 - Provost’s humanities task force (CIVIC) issued report that addresses curriculum innovation and teaching
 - CRC submits progress report
 - humanities chairs submitted a curriculum proposal



Phase 2: Activating Discussions College-wide August 2016 – January 2017 (3)

Submitted by the Department Liaison Group, 11-10-16

College of Arts & Sciences: Principles of a Liberal Arts & Sciences Education

- Students who enter Cornell's College of Arts & Science should be ready to engage with the **breadth of inquiry** characteristic of a liberal education.
- The Arts & Sciences curriculum should be transformative: **students who enter as consumers of information should leave as producers of knowledge.**
- Graduates should be **critical and inquisitive readers; capable writers; thinkers** who can examine and reason from evidence and **embark on challenging paths of inquiry.**
- Students should **claim their education.**
- A broad and deep education should encourage **creativity, open-mindedness, intellectual agility, and engagement with the wider world.**
- The curriculum should encourage students to **remain curious and learn to be skeptical.**
- Students should expect education to be challenging. They should **stretch themselves intellectually and engage with new and startling ideas.**
- What they learn may be unsettling: it may **change what they know and think they should know.**
- Students may **change their minds** about what they believe is **important**, and what they want to do with their lives.



Phase 3: First Draft of Proposal January 2017 – March 2017

- Action (including communication, discussions and dialogue):
 - The Dean had meetings with the CRC and department Liaison Group to initiate the next phase of proposal drafting
 - CRC initiated weekly meetings
- Output: Committee reported to the Dean
 - CRC finalized proposal draft and presents to the Liaison Group.



Phase 4: Introducing the Proposal & Gathering Feedback March 2017 – May 2017

- Action (including communication, discussions and dialogue):
 - CRC held more than 30 meetings with departments, programs, faculty groups, trustees and students to discuss feedback on the draft proposal
 - Dean's Student Advisory Committee held **forum for students** on the curriculum proposal
 - CRC presented feedback from initial proposal to faculty in live faculty meeting

- Output:
 - CRC published draft proposal



Phase 5: Curriculum Review Committee Report & Second Proposal Draft August 2017 – April 2018

- Action (including communication, discussions and dialogue):
 - CRC held small group meetings with faculty across the college addressing feedback from first draft of proposal
 - Some department chairs **submitted a counterproposal** concerning some specific issues in the CRC's final report
 - The Dean's student advisory Committee issued a student survey to obtain feedback on the final report
 - The college held an all faculty meeting to discuss the CRC proposal based on the final report as well as the counterproposal concerning some specific issues (eg. Language requirements)
- Output:
 - CRC drafted **final report with recommendations** for a draft proposal.
 - The CRC issued its final report



Phase 6: Final Draft & Proposal Passage May 2018 - October 2018

- **Action (including communication, discussions and dialogue):**
 - The CRC regrouped to **draft a third proposal** based on feedback from faculty and elements of the **counterproposal** that would retain the language requirement.
 - CRC leadership reached out **to lead authors of counterproposal** to review and sign off on third draft of proposal
 - began to solicit comments from voting eligible faculty via the online faculty site.
 - **Proposal was amended** via a live faculty meeting
 - **Faculty voted on the amended proposal via the faculty website.**
 - Proposal overwhelmingly passed **by a 2 to 1 margin**
- **Output:**
 - The College posted a story on the revised proposal to the A&S website
 - **Final Draft**
 - **Arts and Sciences Curriculum Proposal**

Timeline and Milestones

Time	Milestones
Spring 2016	The CRC is charged to undertake a review of the A&S curriculum. It begins gathering data.
Fall 2016	The CRC initiates College-wide discussions with all stakeholders, including liaisons from all departments, alumni and students.
Spring 2017	The CRC introduces a draft proposal. Feedback is obtained from the Cornell community via a public website. The CRC holds more than 30 meetings with department and program faculty as well as a student town hall.
May 2017:	A College meeting is held and feedback is presented
Fall 2017	The CRC reviews the feedback further and continues the discussion in response
March 2018	The CRC releases a final report. Feedback is gathered from departments, especially concerning the report's language requirement.
April 2018	The CRC introduces a proposal for distribution requirements based on the final report. Students respond to a survey issued by the Dean's Student Advisory Committee.
May 2018	Faculty discuss the CRC proposal, as well as an alternative proposal concerning the language requirement
June 2018	This revised proposal is introduced for discussion and a vote in fall 2018
October 2018	Proposal is amended and voted on by faculty. Amended proposal passes by a 2-to-1 margin.
as early as fall 2020	Plans will soon be underway to implement

Source: College of Arts and Sciences, Cornell University, October 30, 2018. Arts & Sciences Curriculum Proposal.

<https://as.cornell.edu/curriculum>



Some highlights of the report

- A simplified set of distribution requirements that allows students to more **effectively explore** their liberal arts education;
- **New distribution requirements** in Human Difference, Global Citizenship and Statistics and Data Science;
- A **strengthened first-year writing program**;
- A more flexible language requirement that encourages study abroad and less commonly taught languages, while protecting the central role of language learning in the liberal arts curriculum;
- **New emphasis on supporting interdisciplinary teaching and curricular development**;
- New approaches to pre-major advising, such as the one credit first-year first semester pre-major advising seminar that is currently being piloted in the College;
- And a strong emphasis on community engaged learning as a distinctive feature of the Cornell Arts & Sciences curriculum.

Reference: Hovis, K. March 20, 2018. A&S curriculum report recommends focus on exploration, simplified requirements.

<https://as.cornell.edu/news/new-undergraduate-curriculum-report-arts-sciences-recommends-focus-exploration-and>



A pilot of a one-credit advising seminar (1)

- A pilot of a one-credit advising seminar was introduced in the 2017-18 academic year for first-year students
- Expanding beyond our current College advising structure, **which centers around only one initial 30-minute meeting with a faculty advisor prior to the first week of classes**
 - with a seminar setting in which each group of 10 advisees meet with their faculty advisor in a series of twelve 50-minute
 - weekly interactions (along with individual one-on-one meetings as students need).
- The pilot program involved 60 students and six faculty in the Fall 2017 semester, and 30 first year spring-admission students and three faculty in Spring 2018.



A pilot of a one-credit advising seminar (2)

The seminar

- provides a variety of learning experiences (readings, excursions, reflections, class discussions)
- focuses on:
 - building skills and awareness of resources to help students navigate and meet the academic demands of the College's curriculum;
 - enabling students to craft their own educational pathway;
 - creating a sense of community within A&S for first year students.
- The feedback from students in the pilot was **very positive**
- The Curriculum Review Committee (CRC) recommends that such a first-semester advising seminar **be adopted as a requirement for all incoming students**, effective Fall 2020



Arts & Sciences Curriculum Committee Final Report- Main Findings and Discussion -Interdisciplinary Courses

- Interdisciplinary courses can be classified with an enrollment code that does not tie them to specific departments. The use of a single code would enhance the visibility of interdisciplinary courses, and would provide students with a clear way to find them
- Every interdisciplinary course would likely satisfy at least one distribution requirement, with some having the capacity to fulfill a distribution requirement from a choice of two or more categories.
 - However, we **do not recommend that these courses be allowed to fulfill more than one distribution requirement simultaneously.**
 - students would be permitted to count such courses towards one distribution requirement only.
 - To avoid the proliferation of courses bearing multiple distribution categories, we recommend a faculty committee (perhaps the Educational Policy Committee) be tasked with monitoring and approving such courses.



Comparisons: Current system and proposed replacement (1)

	CURRENT SYSTEM		PROPOSED REPLACEMENT
Distribution	4 courses in Physical & Biological Sciences (PBS) and Mathematics & Quantitative Reasoning (MQR): 2 PBS + 1 MQR + 1 course that is either in PBS or MQR	Mathematics & Quantitative Reasoning	1 Statistics & Data Science (SDS)
			1 Symbolic & Mathematical Reasoning (SMR)
		Physical & Biological Sciences	1 Physical Sciences (PS)
			1 Biological Sciences (BS)
	5 Arts & Sciences courses of 3 or more credits from at least 4 of the following social sciences, humanities, and arts categories: Cultural Analysis (CA) Historical Analysis (HA), Knowledge, Cognition, & Moral Reasoning (KCM) Literature & the Arts (LA) Social & Behavioral Analysis (SBA)	Cultural Analysis (CA)	1 Social Difference (SD)
			1 Global Citizenship (GC)
		<ul style="list-style-type: none"> Knowledge, Cognition, & Moral Reasoning (KCM) Social & Behavioral Analysis (SBA-AS) 	1 Ethics & the Mind (EM)
			1 Social Science (SS)
		Historical Analysis (HA-AS)	1 Historical Analysis (HA)
		Literature & the Arts (LA)	1 Arts, Literature & Culture (ALC)



Comparisons: Current system and proposed replacement (2)

	CURRENT SYSTEM	PROPOSED REPLACEMENT
Minimum Number of Required Distribution Courses	9	8
Distribution Timing	Any time	5 of 8 in first four semesters
Faculty can list courses under two distribution categories	No	Yes
Students may fulfill two distribution categories with one course	No	Yes
Courses counting toward a major may also count to fulfill distribution requirements.	Yes	Yes



Comparisons: Current system and proposed replacement (3)

	CURRENT SYSTEM	PROPOSED REPLACEMENT
Breadth	1 Geographic Breadth (GB) + 1 Historic Breadth (HB) or 1 combined GHB (may also count for distribution and/or major)	None (breadth covered through fulfillment of 10 distribution categories)
credits	120 credits, 100 of which must be from the College of Arts & Sciences	120 credits, 100 of which must be from the College of Arts & Sciences
Electives	Four or five courses (totaling at least 15 credits), not used to fulfill other requirements (except for Breadth) and not in the major field. Double majors are exempt from this requirement. (AP, IB, A-Level and transfer credits may be used to meet the elective requirement)	No electives requirements
Courses	34 courses	No course total requirements



Comparisons: Current system and proposed replacement (4)

	CURRENT SYSTEM	PROPOSED REPLACEMENT
Minimum courses to complete graduation requirements (assuming maximum allowable exceptions & overlaps, not counting major & credit request)	9 Distribution + 1 FWS + 1 Language = 11 courses	8 Distribution + 1 FWS + 1 Language = 10 courses
Maximum courses to complete graduation requirements (not counting major & credit request)	9 Distribution + 2 Breadth + 2 FWS + 3 Language + 5 Electives = 21 courses	10 Distribution + 2 FWS + 3 Language = 15 courses



Arts & Sciences Curriculum Proposal-Main Points (1)

- students fulfill five different distribution categories in **their first four semesters**
- an adjustment to the current list of distribution requirements, with the proposal that students **complete one course in ten distribution categories**
- individual courses can **be listed in up to two distribution categories**
 - For example, social science courses on social inequality by race, class, and gender could fit into both the "Social Difference" and "Social Science" categories
- students must **satisfy each of the ten distribution requirements**
 - this differs from the current system, wherein students choose four categories from a menu of five categories.
- students may **double-count up to two courses** to fulfill the distribution requirement categories
 - For example, they may use one course to satisfy both the Social Sciences and Global Citizenship requirements



Arts & Sciences Curriculum Proposal-Main Points (2)

- "language" means any living or extinct human language, including sign languages
- the First-Year Writing Program be strengthened and further supported
- further innovation of First-Year Writing courses that **are paired with introductory courses**
- minimum course requirement causes needless complications for students who have taken half-semester courses
 - **eliminate the elective requirement** altogether
 - **eliminate the 34 course minimum requirement**
 - focus on preserving the current requirements that students **complete 120 credits of coursework**, with 100 credits from the College of Arts and Sciences.



Innovative Learning

- students can be part of an innovative classroom project that uses **active learning**
- Students' education could extend far beyond the classroom
- Student can **join a faculty member's research team** on campus, conduct field study research
- Students could **study abroad** in one of more than 85 countries or develop her/his own research project through independent study



Independent Study-Undergraduate Students

- If students have special interests or would like to do research not treated in regularly scheduled courses, they can consider doing independent study.
 - Through independent study, students can delve more deeply into **a topic not covered in our regular curriculum: write a book, choreograph a dance, synthesize organometallic compounds**
 - A faculty member -- who becomes the instructor for the independent course –
 - ✓ must approve the proposed study
 - ✓ and agree to provide continuing supervision of students' work
 - Students may earn up to 6 credits in one semester with one instructor or up to 8 credits with more than one instructor.
- However, if students are being paid for assistant faculty in research, then cannot earn course credit for that work.



問題與討論