The Inquiry Core Curriculum[1]

Developing Inquiring Minds | Sparking Curiosity | Building Professional Presence

The world is filled with complex problems and complex problems require complex thinking. CSU's Inquiry Core is structured to spark student curiosity in exploring the complexities of the world, develop their ability to investigate those complexities, and build their professional presence so they are ready to pursue solutions the day after graduation.

Built around the development of eight Core Competencies, students will complete 30-credit hours of coursework across a variety of disciplines. Each course will engage students in exploring important questions and problems, introducing them to the methods and standards of the discipline along the way. **Inquiry Pathways** provide a further opportunity for students to deepen their understanding of an important issue by completing three core courses around a shared theme.

The Core Curricular Review Process

The review and updating of CSU's general education system was initiated by Faculty Senate in Fall 2022. A committee composed of 11 faculty and 3 *ex officio* members worked throughout the Spring 2023 semester to review the current system, faculty input, national trends, and other data to produce a set of high-level guiding principles for reform. These principles were accompanied by a variety of potential updates the committee reviewed and considered.

Guiding Principles for Core Curriculum Reform

- Be a holistic, integrated learning experience
- Provide a foundational education for the 21st century
- Emphasize building relationships
- Provide a unique CSU core curriculum experience
- Ensure the core curriculum works for our diverse student population

A subset of the committee, composed of seven faculty and four *ex officio* members, continued the work throughout the summer. This committee participated in a week-long intensive institute on general education reform hosted by the American Association of Colleges & Universities. The committee then leveraged the lessons of that institute, and the action plan they created as part of it, to develop the Inquiry Core Curriculum. Throughout that process, they presented ideas and gained feedback from various stakeholders, including faculty, advisors, students, and employers. The result of the summer work is a robust updating and rebranding of general education at CSU.

[1] This document represents a draft of a partial proposal for updating the CSU General Education system

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The Core Competencies

A Core Curricular education should prepare all students for success in life and whatever career(s) they pursue after graduation. The Inquiry Core is designed around eight core competencies that reflect the demands of modern life and the skills most in demand among employers. With the Inquiry Core, CSU is promising that all students who complete the program will be…

1. Effective communicators
2. Critical quantitative reasoners fluent in interpreting and using data
3. Efficient and ethical consumers and creators of information
4. Sophisticated users of digital technologies
5. Professional and constructive collaborators
6. Ethically conscious and responsible decision-makers
7. Culturally aware and civically minded members of local and global communities
8. Critical and creative thinkers

Each of these core competencies describes, at a high level, the outcomes of the Core Curriculum. Each is also further specified with sub-outcomes, derived from state guidance, AAC&U rubrics, and current research.

These Core Competencies update the existing GenEd skill areas and unify them with the broader statement of the purpose of general education at CSU.

Core Inquiries

General education distribution requirements were revised to reduce total credit hour requirements, align the CSU core curriculum with state requirements, and produce a system that fits with the guiding principles identified in the Spring report.

The state requires general education programs to include at least one composition course, one mathematics course, and then two courses each from the arts & humanities, social sciences, and natural sciences. All courses in the general education system are required to be 100- or 200-level courses.

The proposed core curriculum divides requirements into three categories: Foundational Inquiries, Methodological Inquires, and the Inquiry Capstone. The Methodological Inquiries are further divided based on their disciplinary focus. One key element of this change, albeit a presentational one, is making each Methodological Inquiry category unique and having students complete one course in each category. In most cases this is not a substantive change – students are still required to take two natural science courses, for instance – but one that aims to reduce the student sentiment of "jumping through hoops" or "checking off boxes". Each category aims to communicate the importance of the courses within, and each will have different requirements for the courses within.

Inquiry Core	Credit Hours	GenEd08 Equivalent	State requirement
Foundational Inquiries			
Inquiry Launch	1	ASC101: Introduction to University Life	
ENG101: Critical Inquiry	3	ENG101: College Writing I	X
ENG102: Critical Research	3	ENG102: College Writing II	
MTH116: Mathematical Inquiry	3	MTH116: Mathematical Inquiry	X
Methodological Inquiries			
Scientific Investigations (w/ Lab)	4	Natural Science (w/ lab)	X
Scientific Inquiry	3	Natural Science (w/o lab)	X
Human Perspectives	3	Arts & Humanities	X
Global Perspectives	3	Arts & Humanities/ALAAME	X
Social Inquiry	3	Social & Behavioral Sciences	X
Diversity in America	3	Social Science/Social Diversity	X
Inquiry Capstone			
Inquiring into your Future	1	None	

Each methdological inquiry category has a different aim, although the ones sharing a disciplinary category (e.g., scientific investigations and scientific inquiry) will have a fair amount of overlap as well. In general, the distinctions for the courses are as follows:

Scientific Investigations emphasizes experimental design and the collection and interpretation of data to inquire into some aspect of the natural world and/or technology. It will also help students develop their ability to identify legitimate scientific claims and deploy scientific reasoning in support of a conclusion.

Scientific Inquiry emphasizes evaluation of scientific claims through applying scientific methodologies to public discussions and/or real world problems. This course will also engage with questions about the ethical use of science and scientific data.

Human Perspectives engages students into inquiring into important questions about the human condition, through the examination of diverse perspectives and important products of the human imagination (such as texts and art work).

Global Perspectives aims to help students escape the confines of their dominant culture by inquiring into the human condition from global perspectives. In particular, courses in this category must have a primary focus on perspectives outside of North America and Europe.

Social Inquiry engages students in inquiring into human behavior and/or social problems using the methodologies of the social sciences. It should introduce students to methods for gathering and interpreting (qualitative and/or quanitative) data and the use of theoretical frameworks to interpret behavioral or social phenomenon.

Diversity in America inquires into problems and opportunities related to diversity in the United States. Using the methods of the social sciences, courses in this category should make use of data and modeling to understand long-standing racial disparities, how social structures can influence opportunities, and what can be done to build a more just future.

Inquiring into your Future is a professional presence oriented capstone that will help students reflect on their core curricular experience, the competencies they developed, and how they can bring their education to bear on their personal and professional identity. This capstone is not meant to replace program capstones, but its emphasis on core curricular education and core competencies can allow program capstones to be more narrowly focused on assessing program outcomes.

Developing Core Competencies

Despite a list of general education "skill areas", the current system does not guarantee all students who complete their general education at CSU are ever exposed to or learn all the designated skills. In our aim of developing a curriculum emphasizing what *all* students should know and be able to do, we have updated how courses get approved for the Core Curriculum with an emphasis on sufficient development of all the Core Competencies. All the core competencies take time to truly develop, and so we want to make sure a student is exposed to and given practice in each over multiple courses.

To do this, we have provisionally identified which Core Inquiry categories seem, to the committee, most appropriate for teaching and assessing each Core Competency, while also ensuring sufficient distribution of each. Our goal, before implementation, is to work with faculty in each disciplinary category to revise the provisional list.

Core Inquiry Category/Course	Core Competencies Included Communication (C), Quantitative Literacy (QL), Information Literacy (IL), Digital Literacy (DL), Collaboration (Co), Ethical Decision-Making (ED), Culture & Civics (CC), Critical Thinking (CT)
ENG101	C, IL, DL
ENG102	C, IL, DL, Co, ED, CT
MTH116	QL, DL, Co
Scientific Investigations	C, QL, Co, CT
Scientific Inquiry	C, QL, IL, DL, ED, CT
Human Perspectives	C, IL, Co, ED, CC, CT
Global Perspectives	C, Co, ED, CC, CT
Social Inquiry	C, IL, DL, ED, CC, CT
Diversity in America	C, Co, ED, CC, CT

It is worth highlighting the fact that "Effective Communication" shows up in nearly all courses/categories. This is to reflect the importance of both written and oral communication. Importantly, however, the way that communication is taught will be different in different courses/categories. While ENG101 and ENG102 are expected to involve significant and fundamental writing and oral communication development, Methodological Inquiry courses are generally expected to help students understand discipline-specific conventions but not teach the fundamentals of writing. Additionally, some Core Inquiry categories will be designated to focus on oral communication rather than written communication.

The result of this focus will be greater skill development for students and a more streamlined approvals process for faculty. Rather than needing to complete three worksheets for a course – one for the discipline category and two for skill areas – you need only complete the single, comprehensive worksheet. Additionally, resources will be made available to all faculty to help with the design and assessment of activities and assignments corresponding to the Core Competencies.

Inquiry & Skills Focus

Part of the aim of this update is to make core curricular courses more interesting to students, and to help them see the value of what they are learning. To do that, we have framed the core curriculum as an *Inquiry Core* and will require all Methodological Inquiry courses to be framed around investigating a big question or important problem (or set of questions/problems). Additionally, to ensure students receive ample opportunity to develop their inquiring minds, courses cannot be primarily focused on content coverage.

In practice, this will mean two things: Identifying a 'course narrative' that frames why students are learning what they are in terms of some sort of inquiry; and reducing the content of a 'survey' or major 'introductory' course by about 25% to provide room for the inquiry. Exactly how much (if at all) any given course will need to change along either of these dimensions will vary with the current nature of the course. Many courses are already framed around some sort of inquiry (even if its implicit) and many already make plenty of room for skill development.

Course Replacements: Rethinking Double Counting

Both the philosophy of general education, and the state requirements for it, dictate that general education courses should be accessible to non-majors and taught at the lower (100- or 200-) level. Core courses taught at the appropriate level help students feel like they belong at CSU and like they can succeed in college. Additionally, designing courses to be inviting and interesting to non-major and especially first-year students can further enhance their positive impact on students.

With these things in mind, a broad updating of the core curriculum is aimed at putting greater emphasis on core courses being inviting and accessible to first-year and non-major students. In our current system this is difficult because many programs have given certain major courses general education status so that their students may "double count" them. While this may be beneficial for the major students, it is problematic for the non-majors who end up in what is, effectively, a major course.

Thus, to achieve the aims of a core curriculum, but still be respectful of the underlying conditions necessitating double counting, the Inquiry Core introduces the idea of *Replacement Courses*.

Each major, as needed, may designate up to three Inquiry Core courses that they intend to replace with relevant in-major courses. Additionally, any major may replace MTH116 with the requisite mathematics requirement for the program. This replacement system allows both courses – the core course and the major course replacing it – to be better taught by clearly distinguishing the student audience. It also means that core courses would not struggle to meet the requirements of a core course as well as the requirements dictated by an accrediting body.

Example of Replacement in Major	
Core Curricular Requirement	**Mechanical Engineering Replacement**
MTH 116: Mathematical Inquiry	MTH 181: Calculus I
Scientific Investigations (w/ lab)	CHM 261: General Chemistry I (w/ lab)
Scientific Inquiry	PHY 241: University Physics I
Human Perspectives	PHL 215: Engineering Ethics

The result of this switch will be that some existing General Education courses will no longer qualify as Core courses but will continue to be taught for relevant majors and function as replacements to Core courses.

Inquiry Pathways

A central goal of the Core Curriculum is to help students develop the ability to assess and solve problems using diverse methods. Any student completing their core curriculum at CSU should be able to do this, but we are also introducing the option for students to complete part of their core through a series of courses investigating a similar topic or theme.

The Director of the Core Curriculum, with recommendations from faculty, will create *Inquiry Pathways* by identifying core courses, already offered, that speak to some shared topic of interest to students and society. They may also encourage faculty to create courses that speak to a theme, but there will be no requirement for faculty to design their courses for any particular theme. Additionally, any given course may qualify to be placed in multiple *Inquiry Pathways*.

An additional faculty benefit of inquiry pathways is that it may provide ideas of how to re-orient a course to promote student interest and engagement. Further, as students complete multiple courses in a pathway, their ability to form connections between different courses is enhanced, thus enhancing their learning and success in each course.

Example Inquiry Pathway ["Living Well Together"]
Any student completing at least 3 of the following core courses will earn a 'Deep Inquiry' badge in the "Living Well Together" pathway: • PHL 175: Philosophy of Happiness • HED 120: Healthy Lifestyle Choices • BIO 106: Human biology in health and disease • WLC 215: Languages of the World • ANT 250: Culture Change, Diet, and Disease • COM 211: Communicating in Personal Relationships • SOC 222: World Population and Society • PSC 216: Urban Politics and the African-American Experience

Students may, at their choosing, aim to complete at least three courses in the same Inquiry Pathway. Doing so will result in a "Deep Inquiry" badge, similar to a certificate, that indicates on the student's transcript that they engaged in interdisciplinary investigation of the designated theme.

Why Reform our General Education System?

The above presents the proposed changes to our general education system and gives some indication of the justification. But the justification runs much deeper and is grounded in social changes, demographic changes, new findings in the science of learning, and new evidence of what works in general education.

To further support the changes discussed above, below outlines some of the lines of evidence and justification considered by the committee(s), organized by the goals and features of the system.

1. Promoting integration

The new core aims to provide students with various mechanisms for *integrating* their learning across courses and drawing connections. This includes the optional Inquiry Pathways, the "Inquiring into your Future" capstone, and the inquiry-based structuring of courses. Why should we want a general education system that promotes integration in these ways?[2]

- The world is ever more complex and integrated. This includes the workplaces our students are likely to find themselves in. They will need to perform a variety of different tasks throughout the day, engaging with a variety of different perspectives and methods. Moreover, as recent

[2] Much of the discussion here is inspired by Paul Hanstedt (2018). *Creating Wicked Students: Designing Courses for a Complex World.* Routledge.

work has suggested, we have moved from a "knowledge economy" to an "insight economy".[3] No longer is it sufficient to have *knowledge* of content; what is vital is the ability to generate *insights*. Insight partly comes from being able to pull together disparate ideas and form connections.

- Our students' lives are ever busier, meaning they have less time outside of class to reflect on their learning and form connections themselves. To the extent forming connections is important at all, they need to be given more explicit opportunity to do so in their curriculum.
- Forming connections between disparate ideas supercharges learning.[4] When students can integrate new knowledge with existing knowledge, or integrate knowledge across disciplines, their understanding is strengthened. Additionally, they develop the broad ability to integrate new knowledge, helping them become life-long learners.
- Global reality demands an ever greater ability to sort through mountains of information from all sorts of different fields.[5] And this information is often overlapping. To understand a single social or political issue will likely require understanding natural scientific facts but also how those facts overlap with social or political considerations and the broader social and historical context of the issue.

2. Separating Major courses and Core courses

Part of the aim of using a replacement system rather than a double-counting system is to clearly distinguish courses in the core curriculum from major courses. This allows for each type of course to serve a different role and be designed for a specific audience. That can make course design easier for instructors, but why else should we want to separate these types of courses?[6]

- Student belonging and success. When non-majors enter a "general education" course that is designed predominantly for majors, they can easily feel out of their depth or like they do not belong in the course. This can result in poor performance, poor learning, and thus poor grades. Especially for students new to college, and especially first-generation college students, this sort of experience can result in a broader feeling that they do not belong in college at all. Clarifying the audience and catering courses appropriately can thus promote belonging and bring about both short-term and long-term success.
- Student interest and class culture. Distinguishing major from core courses allows courses to be organized to better promote the interest of the relevant student population. This can generate a better class culture, as more students feel more invested given the course is designed for them. The result is a better learning community, better learning experience for students, and a better experience for the instructor as well.
- Improved learning. Educational theory emphasizes the idea of "desirable difficulties"[7] – learning tasks that require a considerable amount of effort, but within the range of potential

[3] Eugene Chen Eoyang (2007). *Two-way Mirrors: Cross-cultural Studies in Glocalization*. Lexington Books.

[4] Joshua R. Eyler (2018). *How Humans Learn: The Science and Stories Behind Effective College Teaching*. West Virginia University Press. See, also, Timo Mäantylä (1986). "Optimizing cue effectiveness: Recall of 500 and 600 incidentally learned words," *Journal of Experimental Psychology: Learning, Memory, and Cognition* 12 (1): 66-71.

[5] Paul Gaston (2010). "Imperatives for and Drivers of Change," in *General Education and Liberal Learning: Principles of Effective Practice*. American Association of Colleges and Universities.

[6] The ideas discussed here are inspired by Paul Handstedt (2012). *General Education Essentials: A Guide for College Faculty*. John Wiley & Sons.

[7] Daantje Derks & Arnold Bakker (2013). *The Psychology of Digital Media at Work*. Psychology Press.

for the learner. When the audience of a course is more similar, it is easier to ensure that assigned tasks are desirable difficulties for all or most students. Thus, learning is enhanced. On the other hand, in a course designed for majors, any non-majors may be left behind.

3. Applied learning over content coverage

Sitting behind both integration and distinguishing the purpose of core courses is the idea that the core curriculum should be fundamentally about developing key competencies rather than learning a bunch of content. Of course, this does not mean content is not important. Rather, it simply suggests where the emphasis should lie. While a student majoring in your field will likely need to know a lot of specific content to succeed in later courses, graduate school, or specific industries, a student taking a core curricular course in your field has different needs. In particular, with the *inquiry-based* focus of the core curricular reform, we are suggesting they need to learn how to think in the ways your discipline privileges so they can use the tools of your discipline in their everyday lives. Doing this requires organizing a course less around covering specific content and more around ensuring students can work with whatever content they do learn. Why should that be the emphasis of a core curriculum?

- Transferability is key.[8] The students taking a core course may never take another course in that same discipline. As a result, for the learning to matter to them at all, it will need to be capable of being transferred to other things they are doing. The best way to promote transferability is to practice transferring, and that comes from applying ideas to real-life or extra-disciplinary situations.
- Covering content does not mean students are learning content.[9] Instead, knowledge must be "acted on" to be encoded in a way that constitutes long-term learning.[10] Decreasing the breadth of content (where possible) to emphasize depth and application thus enhances student learning. While this is not always possible for major courses due to externally-imposed requirements, it is possible in the core curriculum.
- Promoting intrinsic motivation. Helping students see *why* learning what they are learning is important, and *how* it can help them with other things they care about can enhance their intrinsic motivation to participate in the course and learn the material.

As should be clear from these justifications, the updating and redesign of the core curriculum is fundamentally aimed at enhancing student success. This helps with student retention, improves classroom culture, produces more successful graduates, and all of that can lead to making CSU a more attractive proposition to students.

[8] Hanstedt (2012).

[9] Paul Gaston (2010). "Institutional Commitment," in *General Education and Liberal Learning: Principles of Effective Practice.* American Association of Colleges and Universities.

[10] Jerry G. Gaff & James L. Ratcliff (1996). *Handbook of the Undergraduate Curriculum: A Comprehensive Guide to Purposes, Structures, Practices, and Change.* Jossey-Bass. See also J. Clark (2010). "Effective Pedagogy," in *General Education and Liberal Learning: Principles of Effective Practice.* American Association of Colleges and Universities; J. Zull (2002). *The Art of Changing the Brain*. Stylus.