

## 2026 Appraisal of 2021 Global Climate OER Initiative & Revival

<https://chemconnections.org/OER/Global%20Climate%20C-ID/Cal%20OER%20conference%208.5.2021.pdf>

<https://edsource.org/2022/california-is-failing-to-educate-students-on-climate-change/677885>

<https://edsource.org/2026/california-schools-sustainability-education/761519>

<https://ncse.ngo/californias-climate-literacy-seal-bill-advances>

### *Gemini was prompted with the following:*

5 years ago an unsuccessful California higher educational initiative was undertaken to have global warming issues discussed in every lower division course offered in the public colleges & universities (UC, CSU, community colleges). It was not subscribed to, faltered and failed. Can it be revived?

### *Executive summary of Gemini's appraisal and suggestions*

Although the original initiative's aims were notable, they were overly ambitious and widely under-estimated the cultural and organizational challenges on many levels. However, during the past 5 years, California's educational & political climate has warmed to improving the overall understanding of and response to the challenges of climate change, which has made prospects better to achieve a more limited, but significant inclusion in fewer, but in the more heavily enrolled courses through student advocacy, modular OER deployment by faculty, and administrative support of climate literacy through micro-credentialing / badging.

### *Gemini's responses to the original prompt and a series of subsequent prompts:*

The effort presented at the 2021 Cal OER conference—which sought to integrate Open Educational Resources (OER) and C-ID (Course Identification Numbering System) pathways to anchor climate change topics across all lower-division lower-division courses in California public postsecondary institutions—faced the classic challenges of systemic curriculum reform: **faculty autonomy, rigid articulation standards, and top-down mandates**.

Reviving such an ambitious initiative is entirely possible, but doing so successfully requires shifting away from broad, prescriptive mandates toward a **decentralized, high-value framework** driven by multi-disciplinary OER infrastructure, institutional incentive, and standardized articulation pathways.

### **Why the Initial Initiative Stalled**

1. **Academic Freedom & Faculty Buy-in:** Higher education faculty guard their course syllabi closely. Mandating or urging specific topical coverage across unrelated disciplines (e.g., lower-division humanities or math) often meets resistance if it feels forced or disjointed from foundational course outcomes.
2. **C-ID Rigidity:** The C-ID system requires rigid, peer-reviewed Descriptor compliance across all 116 California Community Colleges, CSUs, and UCs to guarantee transfer credit. Modifying descriptors across hundreds of disciplines to require climate coverage creates a massive administrative bottleneck.

3. **Resource Friction:** Expecting faculty across dozens of departments to independently source or build high-quality, peer-reviewed climate materials for non-environmental disciplines creates friction without dedicated OER support structures.

### **A Roadmap for Revival**

Rather than attempting a top-down mandate for *every* lower-division course, a revived model can leverage mechanisms that have proven successful in California's higher education landscape over the past few years:

#### ***1. Shift to Modular, Plug-and-Play OER "Micro-Units"***

Instead of asking instructors to redesign whole courses, provide ready-to-use, peer-reviewed OER modules tailored to specific traditional lower-division subjects:

- **Statistics:** Practice datasets on global sea-surface temperature anomalies or microplastic counts.
- **Economics:** Problem sets on carbon pricing models, externalized environmental costs, or circular economy metrics.
- **English Composition:** Rhetorical analysis readings focused on historical vs. contemporary environmental literature.

#### ***2. Leverage Cal-GETC and Interdisciplinary Badging***

With the implementation of the **Cal-GETC** (California General Education Transfer Curriculum) unifying transfer pathways across CCC, CSU, and UC, institutional focus has shifted toward interdisciplinary transfer pathways.

- Rather than changing individual C-ID course descriptors, institutions can establish an "**Environmental & Climate Literacy**" **micro-credential or certificate** that tracks across existing general education (GE) breadth areas.

#### ***3. Scale Inter-Systemic Champions (UC / CSU / CCC Networks)***

The most successful modern frameworks operate on collaborative, optional models rather than blanket directives:

- **UC's *Bending the Curve* Model:** Originating as a dedicated interdisciplinary climate solutions curriculum, this model successfully scaled across UC campuses, CSUs, and community colleges by providing a shared multimedia library and adaptable course frameworks rather than demanding strict syllabus standardization.
- **ASCCC OERI Integration:** The Academic Senate for California Community Colleges Open Educational Resources Initiative (OERI) can incentivize content creators with small design grants to build climate-focused OER supplementary materials mapped directly to existing top-enrolled C-ID descriptors (e.g., MATH 110, ENGL 100, ECON 202).

#### 4. Incentive-Based Faculty Fellowships

Reviving the movement requires supporting the educators tasked with delivery:

- Establish regional **Climate Across the Curriculum Fellowships** (coordinated through regional CCLC/CSU/UC centers) providing stipends, instructional design assistance, and peer workshops for faculty adapting their lower-division courses.

#### 5. Next Steps for Implementation

If you are looking to reignite this effort within your district, campus academic senate, or professional discipline network:

1. **Focus on Top 20 Transfer Courses:** Target the high-enrollment general education courses that account for the vast majority of lower-division student contact hours.
2. **Build a Shared OER Repository:** Host discipline-specific climate modules on platforms like LibreTexts or Canvas Commons, clearly indexed by C-ID descriptor.
3. **Engage Local Academic Senates:** Introduce local resolutions supporting *voluntary* climate literacy integration through open resources, keeping academic freedom at the core of the strategy.

| Phase                                                                 | Core Tasks                                                                                                                                                                                                                                                                                                                                 | Feasibility / Risk                                                                        |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Year 1:<br/>Infrastructure &amp;<br/>High-Impact<br/>Targeting</b> | <ul style="list-style-type: none"><li>• Identify the top 20 C-ID transfer courses (e.g., Intro to Stats, English Composition, Microeconomics).</li><li>• Publish modular, plug-and-play OER climate units mapped to those descriptors on LibreTexts/Canvas Commons.</li><li>• Secure seed funding for Faculty Innovation Grants.</li></ul> | <b>High Feasibility</b><br><br>Leverages existing platforms and voluntary early adopters. |
| <b>Year 2: Senate<br/>Engagement &amp;<br/>Pilot Deployment</b>       | <ul style="list-style-type: none"><li>• Pass local Academic Senate resolutions endorsing voluntary climate integration.</li></ul>                                                                                                                                                                                                          | <b>Moderate Feasibility</b><br><br>Requires active coordination across                    |

| Phase                                                   | Core Tasks                                                                                                                                                                                                                                                                       | Feasibility / Risk                                                                                                        |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                                                         | <ul style="list-style-type: none"> <li>• Deploy pilot modules across participating CCC districts and partner CSU/UC campuses.</li> <li>• Measure student engagement and learning outcomes.</li> </ul>                                                                            | campus departments and senate committees.                                                                                 |
| <b>Year 3: Cross-Systemic Recognition &amp; Badging</b> | <ul style="list-style-type: none"> <li>• Establish a inter-systemic "Climate Literacy" micro-credential or certificate tracking across existing Cal-GETC GE areas.</li> <li>• Institutionalize recurring professional development fellowships for faculty onboarding.</li> </ul> | <p><b>Lower Feasibility</b></p> <p>Inter-systemic administrative agreements often exceed a 12-month execution window.</p> |

## Summary Evaluation

Achieving universal, mandatory coverage across every lower-division course within 2 to 3 years is unlikely given the structural design of higher education governance. However, achieving **substantial, high-impact coverage in top-enrollment transfer courses** through modular OER deployment and micro-credentials is achievable within this window, offering a pragmatic path to scale climate literacy rapidly.

Extending the timeframe to a **5–10 year horizon** significantly changes the calculus, raising the estimated prospect for success to a **6 to 7 out of 10** (*from a 3 to 4 out of 10*). A decade provides sufficient runway to overcome the structural "institutional lag" inherent to higher education governance, provided the initiative aligns with broader systemic transformations already underway across California's public postsecondary systems.

A successful 10-year campaign cannot rely solely on passionate individuals; it requires an intentional coalition built across **governance, pedagogy, technology, and policy**. Because higher education operates on consensus and shared governance, recruiting stakeholders who hold institutional leverage is essential to driving systemic change.

## Key Drivers Elevating Long-Term Prospects

- **Systemic Institutional Frameworks:** Strategic directives like the California Community Colleges' *Vision 2030* explicitly prioritize climate literacy and green

workforce development. Over a 5- to 10-year period, these systemwide frameworks push local Academic Senates and curriculum committees to integrate sustainability goals into standard operational reviews.

- **Curricular Revision Cycles:** Community college and university departments naturally audit and rewrite course outlines of record every 5 to 6 years. A decade-long window accommodates two full revision cycles, giving faculty ample time to organically embed climate modules and interdisciplinary learning objectives without needing emergency mandates.
- **Cal-GETC & Transfer Alignment:** With the implementation of the unified California General Education Transfer Curriculum (Cal-GETC), general education requirements across CCC, CSU, and UC are now more streamlined. Over 10 years, inter-systemic Academic Senate committees have enough lead time to establish standardized, climate-infused pathways or micro-credentials that map cleanly to transfer requirements.
- **Turnover & Culture Shift:** A 10-year span brings significant faculty turnover. Incoming early-career educators are increasingly trained in interdisciplinary environmental approaches and are highly receptive to using modern, open-source (OER) climate curricula.

### Primary Long-Term Barriers

- **Sustained Funding & Leadership Continuity:** Systemic initiatives frequently suffer from "initiative fatigue" or shifts in administrative priorities. Maintaining dedicated grants, professional development stipends, and OER maintenance over a full decade requires permanent line-item funding rather than temporary seed grants.
- **Preserving Faculty Autonomy vs. Systemic Scale:** While voluntary adoption can reach critical mass over 10 years, reaching 100% saturation across *every* lower-division course remains nearly impossible without rigid mandates—which faculty senates will continue to resist on grounds of academic freedom.

### Realizing High Adoption Over 10 Years

Rather than aiming for a rigid, universal mandate that triggers political friction, a successful 10-year campaign would achieve **near-universal availability and high student enrollment** by embedding climate concepts across key lower-division pathways:

Year 1-3: Build & Pilot

- └─ Develop modular OER units for Top 20 transfer courses (LibreTexts/Canvas Commons)
- └─ Establish regional Faculty Fellowships to seed early adopters.

|

Year 4-7: Institutionalize

- └─ Align climate learning outcomes with routine 5-year course outline revisions.
- └─ Roll out interdisciplinary "Climate & Sustainability" badging under Cal-GETC.

|

Year 8-10: Systemic Scale

- └─ Achieve high-density adoption (>60% of lower-division GE sections offer climate)
- └─ Establish permanent inter-systemic OER repositories & recurring senate steering

If redefined as **broad, high-density adoption in major general education pathways** supported by robust OER infrastructure—rather than a top-down mandate on literally every single course section—the likelihood of achieving a transformative, durable impact by 2035 is strong.