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Article

Sustainable Urban Planning Education: Examining Curricular Emphases in Climate and Environmental Change for Future Practitioners

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Abstract

This study examines how climate and environmental change are integrated into the required core curricula of 16 Planning Accreditation Board (PAB)-accredited undergraduate planning programs in the U.S., encompassing 232 core courses through a systematic review. It asks: How, and to what extent, are climate and environmental change integrated and covered in planning programs and curricula? Using content analysis of course titles and descriptions, along with an alignment with PAB's Required Knowledge and Skills of the Profession, the study identifies uneven coverage across knowledge domains, with five programs integrating sustainability and environmental content across five or six of the six PAB's competency areas, while seven do so in only one or two areas. Based on the analysis, the study develops a typology of curricular approaches. Building on these findings, the study proposes three strategies to strengthen the integration and coverage of climate and environmental change across planning curricula for undergraduate programs.

Keywords: climate change; environmental change; sustainability; planning education; planning knowledge; planning skills

1. Introduction

Cities are main sites of natural resource consumption by humans and the associated exposure to environmental and climatic impacts. Indeed, since 2007, when the United Nations considered for the first time that by 2008 the majority of the world's population was urban (https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/unpd_egm_200801_presentation_heilig.pdf, accessed on 2 July 2026), scholarly work has increasingly emphasized the importance of cities for climate adaptation and mitigation, biodiversity conservation, pollution reduction, and the study of human–nature relationships and impacts, to name a few [1–4].

Contemporary socio-spatial and environmental phenomena, including urban sprawl, ecological imbalances (e.g., invasive species), and rapid environmental change, increasingly reveal the dynamic interrelations and dependency between urban inhabitants and natural and environmental systems [5]. In the context of these ongoing changes and transformations, urban planning occupies a crucial position in shaping urban futures amidst environmental and climatic uncertainty; however, these dynamics amplify uncertainty and complicate the forms of prediction and forecasting on which planning interventions have traditionally relied. While planning has long drawn on conceptualizations that separate nature and culture, and humans and more-than-humans, recent scholarship has increasingly



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challenged this tendency, advancing relational approaches that foreground the associations, networks, and interdependencies among diverse human and more-than-human entities as more appropriate frameworks for guiding planning research and practice [6–15].

One recognized pathway for accommodating shifts in planning research and practice is planning education. Planning scholars argue that contemporary urban planning must train practitioners to respond to climatic and environmental change and to recognize the interdependencies between socio-spatial environments and the natural world [15–17]. At the same time, a growing body of scholarship questions whether current planning education adequately equips future planners with the skills and capacities required to address these challenges [15–19]. While several articles have conducted research on the inclusion of climate- and environment-related concepts in planning pedagogy [20,21], recent studies suggest that urban planning programs remain insufficiently prepared for this task. For example, Laurian and Göçmen [17] show that municipal planners in the U.S. often lack the environmental training necessary to support applied sustainability practices; Hurlimann et al. [16] find that planners in Australia draw on limited climate knowledge and competencies in professional practice; and Farhangi et al. [18] underscore the need to more systematically integrate sustainability theory and empirical evidence into planning education to strengthen planners' capacity to address environmental challenges. Finally, Infield et al. [19] highlight the urgent need for planners to assume climate leadership roles and propose pathways for embedding climate change more deeply into planning pedagogy. Thus, fully embedding climate change within planning curricula carries a dual imperative: to provide clear and visible pathways for students seeking environmentally focused training, and to position planning departments as leaders in climate expertise within higher education by explicitly signaling that leadership through their pedagogical and curricular offerings.

The scholarly consensus on the importance of integrating climate change into planning education is reflected in the recent standard update by the Planning Accreditation Board (PAB). In the U.S., the PAB serves as the professional body responsible for accrediting university-level planning programs, currently overseeing 78 Master's and 16 Bachelor's degree programs across North America. PAB accreditation signals that a program meets nationally endorsed standards for professional knowledge, skills, and values, and programs routinely structure their core curricula around PAB's required competency areas to maintain accreditation standing [22]. PAB organizes these required competencies into six areas: three areas of General Planning Knowledge—Planning History and Theory, Planning Law and Institutions, and Urban and Regional Development—and three areas of Skills and Tools for Planning Practice—Planning Process and Engagement, Analytical Skills and Tools, and Professional Communication and Leadership Skills. Recognizing the growing importance of climate change to planning practice, PAB's Amended 2022 Accreditation Standards, effective January 2026, require that climate change be addressed within the core curriculum of all accredited programs [22]. Critically, this requirement does not establish climate change as a standalone competency area; rather, it calls for climate content to be integrated across the existing six areas. This framing reflects the broader consensus that climate competency is not a specialized add-on for certain planners, but a foundational dimension of all professional planning practices [20,21].

Despite this growing scholarly and institutional consensus, existing research on climate integration and coverage in planning education has focused predominantly on graduate-level programs [16,20,21]. This graduate-centric focus reflects longstanding assumptions about a Master's degree as the professional standard in planning. However, undergraduate planning programs represent an increasingly important entry point to the profession. As graduate education becomes less financially accessible and labor market pressures push

more graduates directly into practice, a growing share of planning professionals begin their careers with undergraduate degrees as their sole formal professional credential, particularly those entering local government, nonprofit organizations, and community-based planning roles. For these graduates, what they are required to learn about climate and environmental change during those four years carries disproportionate weight in shaping their professional competencies and value. Understanding how undergraduate programs currently integrate and cover climate content into required coursework is thus a prerequisite for assessing whether the profession's foundational training pipeline is keeping pace with the demands that climate change places on planning practice.

While the importance of preparing planning students for climate and environmental challenges is widely recognized among the scholarly community and the PAB standards, systematic evidence on how current programs integrate and cover climate and environmental change into curricula remains very limited [17]. In response to this gap, growing calls to more fully integrate climatic and environmental change into planning research, pedagogy, and practice, and to better prepare planners to address environmental crises both on the ground and for future cities, this study lays the groundwork for analyzing how planning education currently engages with climate and environmental change. We ask how, and to what extent, are climate and environmental change issues integrated and covered in planning programs and curricula? To address this question, we analyze 16 accredited undergraduate planning programs in the U.S., developing a foundational typology of planning curricula based on their incorporation of climate and environmental change into core courses.

Specifically, given both the increasing demand for planners to engage with climate and environmental change and the documented gaps in planning training and practice, we analyze accredited undergraduate urban planning programs in the U.S. under PAB standards (16 in total). Focusing on required core courses, we conducted a systematic keyword analysis of 232 course titles and descriptions using a set of climate- and environment-related terms derived from PAB undergraduate learning objectives. This approach allowed us to assess the relative prominence of climate and environmental content across programs and to identify how these themes are articulated within core learning objectives, including when they appear in course descriptions rather than titles. We complement this analysis with a qualitative examination of selected programs exhibiting higher levels of climate and environmental change coverage to better understand the curricular structures, course types, and concentrations through which such coverage is achieved.

The aim of this research is to provide empirical evidence that lays the groundwork for understanding how planning schools address climate and environmental change in undergraduate degrees. Beyond its empirical contribution, this research contributes a foundational typology of how climate and environmental training is integrated and covered in planning pedagogy and, ultimately, into planning practice. This typology is intended to inform planning programs by illustrating alternative pathways for strengthening climate- and environment-focused training and leadership, drawing on programs that more extensively embed these themes within their core curricula.

To achieve these aims, the study addresses three research questions: (a) To what extent is climate and environmental content covered in the required core curricula of PAB-accredited undergraduate urban planning programs in the U.S.? (b) How is climate and environmental content coverage distributed across the six competency areas defined by PAB's Required Knowledge and Skills of the Profession? (c) What curricular typologies characterize how accredited undergraduate planning programs structure climate and environmental integration and coverage in their required coursework?

2. Literature Review

Urban planning is a modern mechanism intended to systematically organize, regulate, and develop urban environments across multiple scales. Central to this endeavor is land-use planning, which governs “the location, intensity, form, amount, and harmonization of land development required for the various space-using functions: housing, industry, recreation, transport, education, nature, agriculture, [and] cultural activities” [21] (p. 744). Underlying this functional division is a particular way of perceiving planning (and space), as rooted in modern, rationalist, and positivist approaches that treat humans and more-than-humans (e.g., the natural environment) as distinct domains [15,23,24].

More recent relational approaches challenge this separation by emphasizing associations between categories traditionally framed as oppositional, such as nature and culture, subject and object, humans and more-than-humans, and theory and practice, thereby rejecting hierarchical binaries [25–30]. Moving beyond nature–culture dualisms posit relational approaches as particularly well-suited for analyzing environmental challenges in and around cities, and scholarship in sustainability science frequently builds on the premise that nature and culture, or people and their environments, are deeply entangled and interdependent, advancing post-anthropocentric perspectives on socio-environmental change [15,31,32]. Yet this relational view remains limited in urban planning [6–11,13,15,33].

In addition, planning programs often insufficiently integrate sustainability, particularly climate change and environmental concerns, into their curricula [16], with a growing body of scholarship documenting this gap in planning education [16–18,34]. So far, we found two studies that conduct a thorough examination of the inclusion of climate pedagogy in U.S. planning curricula (studies we found in other locations include Australia [35], the UK [36], Europe [37], and the global south [38]). In 2012, Hamin and Marcucci [20] published a study that included 32 syllabi from electives and core courses in 22 accredited U.S. planning programs, and in 2025, Infield published a study comparing Canada and the U.S., and core and elective courses in master’s programs [21]. In this study, we follow Laurian and Göçmen’s [17] call for a thorough study that “systematically assessing the contents of accredited programs’ core courses” (p. 205) in undergraduate planning programs in the U.S., which to the best of our knowledge was not done before.

Scholars argue that although substantial knowledge about climate change is available to urban planners, practitioners often struggle to translate this knowledge into professional practice, thus creating a gap that is closely linked to shortcomings in planning education [16]. Farhangi et al. [18] further argue that planning education insufficiently equips planners to develop long-term solutions for sustainability transitions, while Laurian and Göçmen [17] highlight deficits in environmental knowledge and skills necessary for implementing sustainable practice. Infield et al. [19] propose integrating and covering climate change more systematically across diverse planning courses, emphasizing interdisciplinary tools for mitigation. Despite emphasizing different dimensions of this gap, these scholars agree on the need for a fundamental transformation in planning education that fully integrates climate and environmental concerns and equips students with the knowledge, skills, experience, and practical competencies required to address them through planning practice (see also [14,39]).

The importance of better preparing planning students to address climate and environmental change in future practice is widely recognized. However, systematic empirical evidence on the extent to which current undergraduate planning programs cover climate and environmental change into their core courses curricula, and the specific ways they do so, remains limited. As Laurian and Göçmen argue, in the absence of such evidence and without accreditation requirements mandating specific environmental knowledge in core curricula, planning students may graduate without foundational environmental planning

knowledge or skills [17]. Motivated by this gap, this study seeks to provide empirical insight into how planning programs currently engage with climate and environmental education, with the aim of informing future curricular development in light of intensifying environmental challenges and their implications for urban futures.

3. Methods

In order to understand how climate and environmental education is integrated and covered in accredited undergraduate programs in the U.S., we systematically reviewed the PAB website and identifying all 16 accredited undergraduate programs, comprising 232 core courses across those programs (<https://www.planningaccreditationboard.org/accredited-programs/all/>, accessed on 2 July 2026). For each university department, we assessed the urban planning degree program only, excluding programs in related fields as some departments offer (such as environmental planning or urban design). We focused on core curricula of these urban planning programs, that is, courses all students must take, excluding other requirements, such as electives, despite their importance in some programs. This sampling strategy enabled us to understand the baseline required curriculum for planning programs. All course data were collected from each university's official course catalog between October and November 2025, reflecting core course offerings planned for the 2025–2026 academic year.

This study operationalizes curriculum coverage at three levels. The first is a keyword-based screen that identifies whether climate and environmental terms appear in core course titles and descriptions [20,21,35]. The second is a manual thematic coding that assesses whether course description content aligns with each of the six PAB competency areas [40]. The third is a curriculum-level examination of how climate and environmental courses are structured within each program's overall course offerings and degree completion requirements [41,42]. We used Excel 16.113 and R 4.2.3 for the review and analysis.

3.1. Keywords Analysis of Course Titles and Course Descriptions

With each program's core courses identified, the most current course titles and descriptions were obtained from each university's official course catalog. Two human coders then searched for a list of key terms related to climate and environmental education in both titles and descriptions [20,21,35]. The terms were selected based on the PAB 2025 accreditation standards (formally titled "amended 2022 accreditation standards") (<https://www.planningaccreditationboard.org/amended-2022-accreditation-standards/>, accessed on 2 July 2026), cross-referenced against those found in university curricula related to climate and environmental change. The initial search used four primary terms, "sustainable/sustainability," "resilient/resilience," "environment," and "climate change", to which "ecology," "nature," and "natural resources" were subsequently added upon review of courses, as they could relate to environment- and climate-focused content in planning curricula. To ensure coding accuracy, the coders first captured all courses containing related terms (e.g., environmental planning, environmental justice), then removed false positives where "environment" appeared in a non-environmental-planning sense (e.g., "built environment," "urban environment"), and manually recoded false negatives where relevant content appeared under alternative phrasing (e.g., "planning of the natural environment" in place of "environmental planning"). Of the 232 core courses coded across all search terms, the two coders disagreed on only 6 courses (2.6%), all of which were caused by oversights by one coder and were resolved through discussion.

3.2. Quantitative and Qualitative Analysis of Course Descriptions

Courses were then coded against PAB's Required Knowledge and Skills of the Profession (<https://www.planningaccreditationboard.org/amended-2022-accreditation-standards/>, accessed on 2 July 2026) to assess the extent to which climate-related content is covered across the core competencies required by the accreditation standards. Specifically, for each identified course, both coders independently reviewed the full course description and assigned it to one or more of the six PAB competency areas—Planning History and Theory, Planning Law and Institutions, Urban and Regional Development, Planning Process and Engagement, Analytical Skills and Tools, and Professional Communication and Leadership Skills—based on whether the description explicitly referenced content, skills, or contexts associated with that area [40]. A course on environmental law, for example, would be coded under Planning Law and Institutions, while a course covering ecological systems analysis into regional development contexts would be coded under both Urban and Regional Development and Analytical Skills and Tools. For each program, the number of core courses covering sustainability, climate, and environmental content within each competency area is calculated as a percentage of all core courses coded to that same area. Beyond mapping to the six areas, coders also qualitatively extracted the specific skillsets and knowledge emphases foregrounded in each course description to characterize how deeply and in what form they appear within each area. This extraction was guided by PAB's own elaboration of what each competency area entails, with coders documenting representative phrases and themes from course descriptions as evidence for each characterization. Where coders assigned different domains to the same course, they discussed the discrepancy and reached consensus through reference to PAB's published descriptions of each competency area.

3.3. Curricular Integration and Coverage Typologies for Environmental and Climate Change Education

To contextualize and extend the findings, we conducted a qualitative analysis of programs demonstrating the highest integration and coverage of climate and environmental content in their core curricula. Drawing on publicly available program information, we examined the structure, sequencing, and types of courses in these programs to identify curricular strategies that may serve as models for programs seeking to strengthen climate and environmental integration in their own required coursework [41,42].

Finally, throughout the process of data collection and analysis, we also met with administrators in PAB, conducting informal participatory conversations [43], through which we were directed to different resources on accreditation process and review. Reviewing these resources assisted us in generating possible reasons for the findings.

It is worth noting that this study captures only what is explicitly represented in publicly available course titles and descriptions, which may not fully reflect the depth of climate and environmental content delivered in the classroom or its translation into students' professional competencies. Thus, the results are more meaningful when interpreted in terms of variability across programs than as assessments of any individual program's curricular depth. High variability across programs suggests inconsistent coverage of climate and environmental content at the system level, which has implications for accreditation and professional standards regardless of what occurs within individual classrooms. An additional consideration is that publicly available course information may lag behind actual curricular updates, meaning the results may better reflect the state of planning curricula at the time of catalog publication than at the moment of data collection. However, the reliance on publicly available information strengthens the study's reproducibility and allows the

replication of the same analysis to track how climate and environmental integration and coverage evolve across accredited programs over time.

4. Results

4.1. Keywords Analysis of Course Titles and Course Descriptions

Our analysis reviewed 20 terms in the core courses of the 16 accredited planning programs. Table 1 shows the total counts of each key term across programs, including the minimum and maximum that each key term occurs in one program in either the title or course description. For example, the term “environmental planning” was counted in 7 course titles, and in 13 course descriptions across all 232 courses in 16 programs; there are programs that do not include it in any course title (minimum = 0) and programs that include it in two course titles (maximum = 2). The table shows that the term “environment/environmental” is found the most in course titles, followed by the specific term “environmental planning”. In course descriptions, “environment/environmental” is also found the most, followed by “environmental planning”, “sustainability”, and “nature”. “Environmental justice” and “climate justice”, despite being central concerns within contemporary planning discourse, appear only twice and not at all, respectively, in the analyzed course descriptions.

Table 1. Frequency of key terms identified in course titles and course descriptions across all PAB-accredited undergraduate programs.

Key Terms	Key Term Frequency In Course Title: Total; [Min, Max] per Program	Key Term Frequency In Course Description: Total; [Min, Max] per Program
Sustainable/sustainability *	3 [0, 2]	12 [0, 3]
Resilient/resilience	1 [0, 1]	2 [0, 1]
Environment/environmental *	21 [0, 3]	45 [0, 9]
Environmental planning	7 [0, 2]	13 [0, 4]
Environmental studies	1 [0, 1]	1 [0, 1]
Environmental analysis	0 [0, 0]	1 [0, 1]
Environmental impact	0 [0, 0]	1 [0, 1]
Environmental design	2 [0, 2]	6 [0, 3]
Environmental law	1 [0, 1]	3 [0, 1]
Environmental policy	1 [0, 1]	2 [0, 1]
Environmental dispute	1 [0, 1]	0 [0, 0]
Environmental conservation	1 [0, 1]	0 [0, 0]
Environmental justice	0 [0, 0]	1 [0, 1]
Climate	1 [0, 1]	2 [0, 1]
Climate change	1 [0, 1]	1 [0, 1]
Climate data and projections	0 [0, 0]	1 [0, 1]
Climate justice	0 [0, 0]	1 [0, 1]
Ecology	0 [0, 0]	1 [0, 1]
Nature	1 [0, 1]	4 [0, 2]
Natural resources	1 [0, 1]	4 [0, 2]
Adaptation	0 [0, 0]	1 [0, 1]

* In categorizing sustainability and environmental topics, false positives—such as references to economic sustainability or the built environment—were excluded from the count. Additionally, the terms included in the table represent the most mentioned ones, but not all terms that include environment or sustainability.

4.2. Quantitative and Qualitative Analysis of Course Descriptions

The PAB identifies six focus areas within the Required Knowledge and Skills of the Profession: three address General Planning Knowledge, and three emphasize Skills and Tools for Planning Practice. Figure 1 presents the explicit coverage of climate and

environmental content across PAB competency areas in the 16 accredited undergraduate programs. The number in each cell reports the count of core courses covering sustainability, environmental, or climate content within the corresponding competency area, while the color gradient represents this count as a percentage of all core courses coded to that area. Together, the heat map captures the degree of topic coverage relative to each program's coverage of the competency itself.

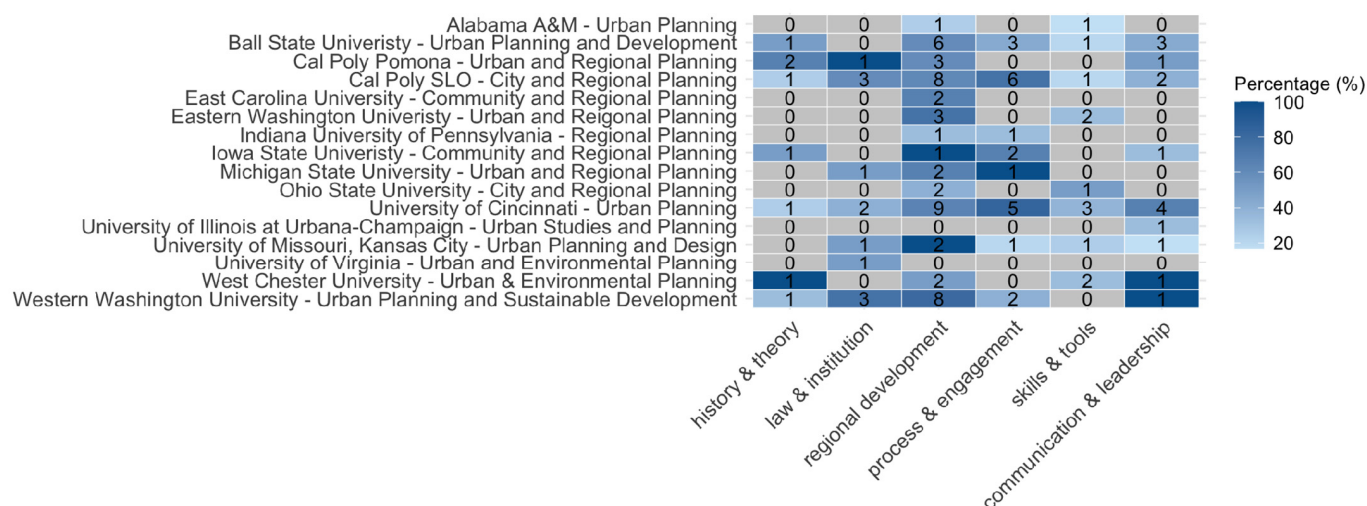


Figure 1. Share of core courses covering sustainability, climate, and environmental content within each PAB competency area, by program.

Overall, there is an uneven distribution of coverage, with some programs explicitly covering sustainability, climate, and environmental content across five or six of the six competency areas, while others do so in only one or two areas. Across the competency areas, Urban and Regional Development shows the widest coverage, with 14 out of 16 programs incorporating relevant content, followed by Planning Process and Engagement and Analytical Skills and Tools, each covered in eight out of 16 programs. Planning History and Theory and Planning Law and Institutions are observed to have the least coverage across the programs.

Table 2 presents the qualitative analysis of required undergraduate course descriptions, illustrating how the course offerings align environmental and climate-related content with these professional knowledge and skill areas. Within each area, Table 2 summarizes the number of programs that introduce environmental and climate-related content to the area in their required courses and outlines the key thematic emphases, supported by representative excerpts from course descriptions.

Based on Table 2, environmental and climate-related content appears across all six focused areas of the PAB Profession's Required Knowledge and Skills, though with varying levels of representation. Within General Planning Knowledge in a Global Context, environmental content is most frequently covered under Planning History and Theory, with nine programs offering courses that reference the history of environmental planning, theoretical debates, ethics, equity, or climate science. In contrast, environmental and climate-related content in Planning Law and Institutions and in Urban and Regional Development are only covered by four accredited planning programs.

Within Skills and Tools for Planning Practice, Analytical Skills and Tools were covered with environmental education in 13 programs, incorporating GIS-based spatial analysis, climate modeling, land suitability analysis, climate data interpretation and modeling, and methods for environmental impact assessment. Planning Process and Engagement is adopted by six programs to cover environmental planning processes, environmental design

interventions, and resilient land use planning approaches. Professional, Communication, and Leadership Skills show the most limited explicit representation, with two programs introducing environmental planning professional roles or design communication in environmental contexts. Overall, the distribution indicates stronger representation in analytical and technical competencies relative to legal, development, engagement, and professional knowledge and skills in current environmental education.

Table 2. Alignment of environmental and climate-related content with PAB profession's required knowledge and skills: evidence from required course descriptions.

General Planning Knowledge in Global Context	
PAB Area	Key Thematic Emphases
(a) Planning History and Theory	History of Environmental Planning "Evolution of theories and practice of urban planning, emphasizing the United States since 1940. Interaction of public and private initiatives directed toward urban and environmental problems." (Western Washington University)
	Theory and Debates "Surveys the philosophy and techniques of environmental planning. . ." (Eastern Washington University)
	"This course examines major approaches and contemporary debates in environmental planning. . ." (University of Cincinnati)
	Ethics and Equity "Review of major concepts, including sustainability, resiliency, risk management, and environmental ethics." (Michigan State University)
	"Environmental equity and sustainable bioregions." (Cal Poly SLO)
(b) Planning Law and Institutions	Climate Science "Understanding ecological systems. . . (and) role of cities and regions in contributing to global climate change." (Cal Poly Pomona)
	Legal and Regulatory Frameworks "This course introduces the legal framework and institutional context of environmental planning. . ." (University of Virginia)
	"Integration of local planning with regional sustainability planning . . . Basic structure of state and federal planning and environmental law." (Cal Poly Pomona)
	"Environmental law and policy provide tools to protect natural systems and guide development." (Western Washington University)
	Environmental Policy Analysis "Political, social and cultural forces that influence environmental policy and planning." (Michigan State University)
(c) Urban and Regional Development	Explanations of and Insights on Development "Understanding ecological systems for urban and regional planning, exploring local, regional, and global impacts of human activity." (Cal Poly Pomona)
	"Course introduces how to read and understand climate data and projections for planning and policy applications." (Iowa State University)
	Planning Responses "Environmental resilience requires a comprehensive planning approach. . ." (Ohio State University)

Table 2. *Cont.*

Skills and Tools for Planning Practice	
PAB Area	Key Thematic Emphases
(a) Planning Process and Engagement	Planning Process “This course is designed to introduce students to the environmental planning process. . .” (Ball State University) “Introduction to the concepts and tools of environmental planning. . .” (West Chester University) “Comprehensive planning, neighborhood/sector planning, and environmental planning. . .Processes and tools available to planning professionals.” (Michigan State University) “Land use planning (as) an attempt to reconcile development and environmental protection. . .” (Western Washington University)
	Environmental Design and Engagement “Relationship of environmental design disciplines, citizen groups, and individuals to urban planning.” (Cal Poly SLO) “Planning and design interventions at the regional scale. . . involving corridors, watersheds, and ecosystems.” (Western Washington University) “The focus of this studio is on planning and design interventions that address environmental systems. . .” (University of Cincinnati)
(b) Analytical Skills and Tools	Geographic Information System (GIS) based Spatial Analysis “Computer-assisted geographic analysis technology used in the management, assessment, and inventory of natural resources.” (Ball State University) “This course introduces students to spatial analysis tools and GIS applications for environmental planning.” (University of Cincinnati)
	Research Skills “Analyze the suitability of land and the vulnerability of the environment for development.” (Cal Poly Pomona) “Students demonstrate planning knowledge and research skills in environmental planning. . .” (University of Missouri–Kansas City) Environmental Modeling “Regional environmental and economic resource modeling.” (Western Washington University) “(The) course introduces how to read and understand climate data and projections for planning and policy applications.” (Iowa State University) Environmental Impact Assessment “Application of California Environmental Quality Act and environmental impact assessment methods.” (Cal Poly Pomona)
(c) Professional, Communication, and Leadership Skills	Professional Development “Survey of diverse roles of professional planners in the public and private sector. . .their involvement with political, social, economic, and environmental issues” (Western Washington University)
	Design Communication “Methods for environmental design and design communication.” (Ball State University)

4.3. Curricular Integration and Coverage Typologies for Environmental and Climate Change Education

Table 3 identifies three primary typologies through which accredited planning programs integrate and cover environmental and climate content into their curricula based on our observations of the programs with the most robust environmental emphasis. The first typology comprises programs whose required core curriculum is organized around climate and environmental content as a whole, with students completing differentiated pathways as part of their degree requirements. For example, within this structure, students can pursue an Environmental Policy pathway by taking courses such as Introduction to

Sustainability and Society, Environmental Economics, and Environmental Law and Policy, while those in an Environmental Science pathway engage with courses such as Urban Ecology, Sustainable Design Principles, and Planning with Climate Change. The second typology includes programs that require a foundational course in environmental planning supplemented by a set of relevant electives offered in the same planning department. Elective course examples include Introduction to Environmental Planning as a required course and electives in one of the subtopic areas such as Transportation Systems and Sustainable Cities, Climate Action Planning, Environmental Impact Statement, and Water Law. The third typology comprises programs that include one foundational environmental planning course and provide additional degree options or minors related to environmental topics, typically offered by other programs housed within the same college. Examples include dual majors in Resiliency and the Environment or Environmental Management or a minor in Sustainable Environments. Together, these three typologies illustrate how planning programs can leverage both internal departmental capacity and broader campus resources to deliver environmental and climate education. The first typology reflects the highest level of departmental control over course content, while the third relies more heavily on external units and therefore reflects a lower degree of direct curricular control.

Table 3. Curricular integration and coverage typologies for environmental and climate change education in urban planning programs.

Typology	Examples of Programs, Concentrations, and Courses Offered
I. Climate-Centered Program with Differentiated Pathways	Example of Course offerings in Environmental Policy Pathway: - Introduction to Sustainability and Society - Environmental Economics - Environmental Law and Policy Example of Course offerings in Environmental Science Pathway: - Urban Sustainability (Gateway) - Urban Ecology - Sustainable Design Principles - Planning with Climate Change
II. Programs with one foundational environmental planning course and relevant electives	Example of Foundational Course: - Introduction to Environmental Planning Example of Elective Courses: - Transportation Systems and Sustainable Cities - Climate Action Planning - Environmental Impact Statement - Water Law
III. Programs with one foundational environmental planning course and options for other degrees	Example of a Resiliency and the Environment Major (BS) - Urban Systems Infrastructure - Urban Systems—Climate Change and Environment - Environmental Assessment Example of an Environmental Management Major (BS) - Environmental Impact Analysis and Management - Environmental Policy Analysis - Natural Resource Ecology and Habitat Management Example of a Sustainable Environments Minor - Implementing Sustainable Principles - Wood Properties, Products and Sustainable Uses

5. Discussion

The analysis of environmental and climate change content coverage in core course titles and descriptions of PAB-accredited undergraduate planning programs indicate that, although environmental and climate-related competencies are incorporated into the core courses in most urban planning undergraduate programs, they are typically embedded within broader interdisciplinary courses rather than included in standalone courses. This pattern mirrors findings from existing studies in other national contexts: Hurlimann et al. [16] found that only 6% of core subjects in Australian accredited planning programs addressed climate change directly, and Preston-Jones [36] similarly observed that integration and coverage in UK programs was uneven across required and elective offerings. Infield et al. [21], in the most directly comparable North American study, found that across 92 PAB-accredited Master's programs, climate content appeared predominantly in elective rather than required courses. Our findings suggest that undergraduate programs face a similar structural pattern, with climate and environmental content present but rarely foregrounded as an explicit curricular priority within required core courses.

A notable finding is the prominence of technical and analytical competencies relative to legal, institutional, and professional dimensions of environmental planning. Analytical Skills and Tools were the most widely represented PAB domain, appearing across 13 of the 16 programs, while Planning Law and Institutions and Urban and Regional Development each appeared in only four. This skew toward technical skills over regulatory literacy and institutional knowledge reflects a broader tension in planning education between technically oriented curricula and the fuller range of competencies planners need to navigate climate governance in practice [21]. It also raises a concern specific to the undergraduate context: students entering the profession with strong analytical tools but limited grounding in the legal frameworks, institutional processes, and equity dimensions of environmental planning may be less equipped to translate technical knowledge into effective planning interventions. The near-absence of environmental and climate justice content—appearing only twice across all course descriptions despite its centrality in contemporary planning discourse [21,44]—is particularly striking and warrants attention.

There are several possible reasons urban planning programs vary widely in the extent to which climate and environmental change is covered into the core curriculum. The first explanation concerns the discipline's primary orientation, which has received increasing attention in urban planning scholarship. While sustainability studies often adopt a relational conception that links multiple factors to the development, operation, experience, and function of cities and urban forms, urban planning has long relied on binaries to approach cities and planning (e.g., planners and users, theory and practice, nature and culture). Although planning scholars increasingly endorse relational thinking as an important approach to planning research and practice, it remains marginal in the field and is largely absent from planning pedagogy [45]. Recent studies have begun to address this gap and propose ways to bridge it conceptually [46] and practically [45], but this remains an ongoing challenge in planning institutions and education, and is apparent in planning's relation and orientation to climate and environmental change.

The second explanation relates to the way PAB operates their accreditation process, which emphasizes flexibility and openness toward different programs' own goals and needs as described in PAB's 2023 Policies and Procedures Manual: (<https://www.planningaccreditationboard.org/policies-and-procedures-manual/>, accessed on 2 July 2026) "A program applying for accreditation will be evaluated in light of both the accreditation standards and its own stated goals and objectives" (4). In addition, in the 2025 Manual for the Self Study Report (SSR) every program has to submit as part of the accreditation process (<https://www.planningaccreditationboard.org/ssr-manual/>, accessed on 2 July

2026), PAB recognizes their role as ensuring that "...programs meet minimum standards of educational quality and deliver a common core of planning knowledge and skills...". Because PAB recognizes planning as a broad and diverse field and planning programs are idiosyncratic, it allows programs, to a certain extent, to interpret for themselves what it means to "meet minimum standards" (3). Although PAB's Amended 2022 Accreditation Standards, effective January 2026, now require climate change to be addressed within the core curriculum, the flexibility built into PAB's evaluation process means that programs can satisfy this requirement in diverse ways—some embedding climate content across multiple existing courses, others concentrating it in one or two required offerings. This institutional flexibility is consistent with PAB's broader mission of accommodating diverse program contexts, but it also produces the curricular variation documented here and makes system-wide compliance difficult to assess from publicly available course information alone, a limitation also noted by Infield et al. [21] in their review of Master's programs.

This flexibility may be well-suited to graduate planning programs, which are typically more specialized and responsive to regional labor market demands. Undergraduate programs, however, serve a fundamentally different educational purpose: they are designed to establish a shared foundational knowledge base for all students entering the profession, regardless of the specialization they may later pursue. This foundational function suggests that undergraduate curricula may require less flexibility and more standardization in climate content than PAB's current framework provides. A student completing an accredited undergraduate planning degree should arguably graduate with a common baseline of climate literacy irrespective of whether their program is housed in a school of public policy, environment, or design, or whether their campus is located in a climate-vulnerable coastal city or an inland agricultural region. While more explicit climate references do not necessarily indicate better-prepared graduates, the degree of variation observed in what programs publicly signal as their required curricular content is itself a finding that merits attention from accreditors and program directors seeking to ensure consistent baseline coverage of climate and environmental content across the profession.

Third, we recognize that the multilevel settings wherein universities are located may add an important factor to if and how their planning programs emphasize climate and environmental change. Local and state context can impact the type of courses offered in accredited planning programs. For example, a state with more environmental regulation would necessarily need to equip urban planners with knowledge on how to understand and address these regulations in urban planning processes. Local and state regulation does not exist in a vacuum; research has shown that education in climate and environmental change in public universities in politically conservative states is less prevalent [47]. Related to this is the role and relationship that a university has with their local government. While some universities have strong relationships with local governments that lead to applied projects between universities and local governments and other institutions (i.e., city-university partnerships), others have weaker ties to their local institutional context. The university's own institutional context also shapes the role of its urban planning program. Such programs may occupy distinct positions depending on the strengths of other units within the university. For instance, a planning program housed in a school of public policy might defer to programs in environmental studies or natural resource management for majors and courses focused on climate and environmental change. Conversely, planning programs situated within schools of environment or sustainability design often have greater access to coursework and emphases related to climate and environmental issues.

In addition, it is under the settings of the universities and the urban context in which a campus is located that shape what it can realistically, and should responsibly, prioritize. Campuses in economically weaker regions are more likely to foreground issues such as

economic hardship, food accessibility, and socio-economic polarization, drawing on local case studies that make these dynamics visible. Institutions facing acute housing shortages, for example, are expected to focus on these deficits as central planning challenges. This place-based orientation also reflects the fact that universities often train future planners to work in the regions where they study, further aligning curricular emphases with local conditions. Therefore, universities located in urban settings where environmental risks such as floods and fires are more pronounced will naturally be more attentive to these issues, while campuses in less affected areas may feel less compelled to address them.

The three curricular typologies identified in this study offer a practical framework for understanding how programs leverage both internal departmental capacity and broader campus resources to deliver climate and environmental education within required coursework. The first typology—programs whose entire core curriculum is organized around climate and environmental content, with students completing differentiated required pathways in Environmental Policy or Environmental Science—represents the highest degree of programmatic commitment and departmental curricular control. The second typology, in which a required foundational environmental planning course is supplemented by a structured set of relevant electives within the planning department, reflects a mainstreaming approach consistent with what Hamin and Marcucci [20] and Hurlimann et al. [35] recommend as the most feasible strategy for integrating climate content without overhauling entire degree structures. The third typology, in which programs pair one foundational required course with dual majors, minors, or allied courses offered by other units within the same college, extends climate content reach while reducing the burden on a single planning department—a strategy that Infield et al. [21] note is common in Canadian programs, where interdisciplinary access to climate coursework across campus is frequently used to compensate for limited planning faculty capacity.

Taken together, these typologies illustrate that there is no single pathway to climate integration and coverage in required undergraduate curricula; rather, programs draw on different combinations of departmental capacity, campus resources, and institutional context to meet the integration and coverage that PAB's updated accreditation standards now require of all programs.

When considering the needs of students, planning programs, PAB standards, and climate and environmental change imperatives, embedding environmental and climate topics into planning curricula demands a mindful, balanced, and inclusive approach that accommodates diverse interests. Yet this imperative should not deter departments from fully committing to prepare future planners to address climate and environmental issues. On the contrary, while departments should maintain varied foci, allowing students to select among specialized tracks and remaining attuned to their local urban contexts and institutional offerings, they must strategically weave climate and environmental change throughout these foci to enhance their relevance and impact.

We propose three strategies to strengthen the integration and coverage of climate and environmental change across planning curricula. These strategies operate at different scales—institutional, departmental discursive, and departmental structural—offering complementary yet differentiated pathways that balance collective coordination, symbolic signaling, and adaptive specialization.

First, at the institutional level, leverage collective strengths. Accreditation or official bodies (e.g., PAB) could establish and maintain a robust network of campuses exemplifying full climate and environmental change integration and coverage (per Typology I in Table 3). Unlike the targeted departmental actions below, this network would operate at scale, sharing representational case studies from diverse campuses that have elevated the topic. It would also clarify contextual differences across institutions—analyzing variations

in resources, locations, and missions—or iteratively refine typologies to address diverse campus needs. Critically, this approach fosters mutual growth, entrepreneurship, and reciprocity among peers, while preserving competitive advantages and allowing departments to retain diversified foci.

Second, at the departmental level, rename and rebrand courses. This discursive intervention focuses on visibility and perception, addressing how course titles shape student choices and programmatic identity in a competitive higher education landscape. When key environmental and climate topics remain implicit or buried in generic titles, programs inadvertently cede ground to other disciplines, signaling a lack of full commitment to climate imperatives and diluting the discipline's obligation to confront profound urban transformations. With robust scholarly consensus affirming cities and planning's pivotal role in climate mitigation and adaptation, departments should proactively reshape the higher education discourse by ensuring that critical topics, such as climate-resilient infrastructure, environmental justice planning, or urban adaptation strategies, are explicitly foregrounded in course titles. This differs from networking (scale-oriented) and flexibility (content-oriented, suggested below) by emphasizing branding as a low-cost, high-impact lever for recruitment, legitimacy, and internal prioritization.

Third, also at the departmental level, pursue “firm flexibility” as a structural strategy. Here, the emphasis shifts to internal curriculum design, enabling departments to sustain distinctive specializations without neglecting pressing urban challenges. For instance, a department centered on community development and engagement, unlike one prioritizing transportation or economic development, can strategically bridge its core focus to climate and environmental change by framing community resilience through environmental justice or equitable adaptation planning. This approach complements institutional networking (external collaboration) and rebranding (surface-level signaling) by demanding deliberate, content-specific interconnections that embed climate considerations deeply within existing tracks, thereby enhancing their relevance without requiring wholesale curricular overhaul, and enabling planning programs to meet needs of the local urban settings and demands of the local and state context.

6. Conclusions

This study provides an initial empirical examination of how accredited undergraduate urban planning programs incorporate climate and environmental change into their core curriculum. Drawing on our findings, we aim to supply data that urban planning scholars and practitioners can use to advance discussions on incorporating these topics into planning education in theory and practice. Ultimately, we seek to ensure that planners, who are uniquely positioned to create resilient and sustainable cities capable of addressing current and future climate and environmental challenges, are equipped with the competencies, skills, and understandings required for this task. By doing so, planning education can sustain the discipline's leadership in mitigating these challenges for tomorrow's cities.

This study has several limitations. First, in terms of data sources, the analysis relies on publicly available course titles and descriptions rather than syllabi, which would provide a richer picture of actual course content and learning objectives. Systematic syllabus analysis was not feasible given the absence of a centralized repository and the inconsistency in availability and currency of syllabi on third-party platforms. We note, however, that this inaccessibility is itself a transparency gap in planning education worth addressing: if prospective students cannot easily access syllabi for required courses, the titles and descriptions analyzed here may be the most meaningful public information of curricular priorities available to them. More broadly, course catalog descriptions are intentionally brief public-facing summaries that may not fully capture the cognitive depth, the proportion

of climate-related content, and the cultivation of practical skills. We therefore call on PAB to consider establishing a shared repository of sample syllabi and course assignments that programs can draw on as reference points, which would not only support curricular development across programs but also enable more granular, syllabus-based analysis in future research. We also see this as opening space for future research that compares PAB-accredited undergraduate programs with programs at universities outside the U.S. to identify diverse models and creative approaches to implementation. Second, this study is scoped to the 16 PAB-accredited undergraduate programs, leaving non-accredited programs unexamined. Whether strong models of climate integration and coverage exist outside the accreditation system, and whether PAB accreditation meaningfully drives climate content relative to non-accredited peers, remains an open and meaningful question for future research. Third, our study's scope focused on the climate and environmental change knowledge students gain through their core course. To measure what types of courses students may take, or which courses planners working in the environmental field took, future research would need to include these elements in the analysis through surveys that evaluate planners' competencies and the level of knowledge in correlation with core and elective courses they took as students.

In light of urgent climate and environmental change, the foundational skills planners need to address emerging challenges are becoming increasingly significant for the profession. This calls for planning programs to provide an adequate level of knowledge through their core courses and for PAB to guide programs on the level of knowledge required while allowing sufficient room for diversity with programs.

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References

1. Bai, X. Cities as Transformative Agents for Global Sustainability. *Science* **2025**, *389*, 3642. [[CrossRef](#)] [[PubMed](#)]
2. Harlan, S.L.; Ruddell, D.M. Climate Change and Health in Cities: Impacts of Heat and Air Pollution and Potential Co-Benefits from Mitigation and Adaptation. *Curr. Opin. Environ. Sustain.* **2011**, *3*, 126–134. [[CrossRef](#)]
3. Lepczyk, C.A.; Aronson, M.F.J.; Evans, K.L.; Goddard, M.A.; Lerman, S.B.; MacIvor, J.S. Biodiversity in the City: Fundamental Questions for Understanding the Ecology of Urban Green Spaces for Biodiversity Conservation. *BioScience* **2017**, *67*, 799–807. [[CrossRef](#)]
4. Shi, L.; Chu, E.; Anguelovski, I.; Aylett, A.; Debats, J.; Goh, K.; Schenk, T. Roadmap towards Justice in Urban Climate Adaptation Research. *Nat. Clim. Change* **2016**, *6*, 131–137. [[CrossRef](#)]
5. Bai, X.; McPhearson, T.; Cleugh, H.; Nagendra, H.; Tong, X.; Zhu, T.; Zhu, Y.-G. Linking Urbanization and the Environment: Conceptual and Empirical Advances. *Annu. Rev. Environ. Resour.* **2017**, *42*, 215–240. [[CrossRef](#)]
6. Murdoch, J. The Spaces of Actor-Network Theory. *Geoforum* **1998**, *29*, 357–374. [[CrossRef](#)]

7. Healey, P. *Urban Complexity and Spatial Strategies: Towards a Relational Planning for Our Times*; Routledge: London, UK, 2006.
8. Hillier, J. Plan (e) Speaking: A Multiplanar Theory of Spatial Planning. *Plan. Theory* **2008**, *7*, 24–50. [\[CrossRef\]](#)
9. Beauregard, R. The Neglected Places of Practice. *Plan. Theory Pract.* **2013**, *14*, 8–19. [\[CrossRef\]](#)
10. Healey, P. Circuits of Knowledge and Techniques: The Transnational Flow of Planning Ideas and Practices. *Int. J. Urban Reg. Res.* **2013**, *37*, 1510–1526. [\[CrossRef\]](#)
11. Metzger, J. Raising the Regional Leviathan: A Relational-Materialist Conceptualization of Regions-in-Becoming as Publics-in-Stabilization. *Int. J. Urban Reg. Res.* **2013**, *37*, 1368–1395. [\[CrossRef\]](#)
12. Rydin, Y. Using Actor-Network Theory to Understand Planning Practice: Exploring Relationships between Actants in Regulating Low-Carbon Commercial Development. *Plan. Theory* **2013**, *12*, 23–45. [\[CrossRef\]](#)
13. Buser, M. Thinking Through Non-Representational and Affective Atmospheres in Planning Theory and Practice. *Plan. Theory* **2014**, *13*, 227–243. [\[CrossRef\]](#)
14. Oliveira, F.L. Nature in Nature-Based Solutions in Urban Planning. *Landsc. Urban Plan.* **2025**, *256*, 105282. [\[CrossRef\]](#)
15. Shilon, M.; Lerner, A.M. Planning Education for Sustainability: Lessons From Higher Education for Sustainable Development. *J. Plan. Educ. Res.* **2026**. [\[CrossRef\]](#)
16. Hurlimann, A.; Cobbinah, P.B.; Bush, J.; Gaisie, E. Continuing Education for Climate Change: A Study of Australian Urban Planners' Current Practices and Developing Competence. *J. Plan. Educ. Res.* **2024**, *44*, 2316–2336. [\[CrossRef\]](#)
17. Laurian, L.; Göçmen, A. Regenerating the Environment: Are Planners Prepared? A Study of American Municipal Planners' Environmental Knowledge, Know-How, and Practices. *J. Plan. Educ. Res.* **2025**, *45*, 203–217. [\[CrossRef\]](#)
18. Farhangi, M.; Rohrer, H.; Magnusson, D.; Trygg, K.; Skill, K. Planning Education and Transformative Capacity for Climate-Neutral Cities. *J. Plan. Educ. Res.* **2025**, *45*, 278–293. [\[CrossRef\]](#)
19. Infield, E.; Shi, L.; García, I.; Minner, J.; Whittington, J.; Goh, K.; Hsu, D.; Agyeman, J.; Boswell, M.; Stone, B. Planning for Climate Leadership. *J. Plan. Educ. Res.* **2023**, *43*, 750–757. [\[CrossRef\]](#)
20. Hamin, E.; Marcucci, D. Mainstreaming Climate in the Classroom: Teaching Climate Change Planning. *Plan. Pract. Res.* **2013**, *28*, 470–488. [\[CrossRef\]](#)
21. Infield, E.; Seasons, M.; Lyles, W. Teaching Climate Change Planning: Fostering Hope While Building Capacity. *Plan. Pract. Res.* **2025**, *40*, 164–182. [\[CrossRef\]](#)
22. Planning Accreditation Board. *PAB Amended 2022 Accreditation Standards and Criteria (Approved February 10, 2025)*; Planning Accreditation Board: Chicago, IL, USA, 2025.
23. Albrechts, L. Strategic (Spatial) Planning Reexamined. *Environ. Plan. B Plan. Des.* **2004**, *31*, 743–758. [\[CrossRef\]](#)
24. Davoudi, S.; Ormerod, E. 'Care-Full' planning: Towards an Ethics and Politics of Care in Planning. *Plan. Theory* **2026**, *25*, 109–128. [\[CrossRef\]](#)
25. Ash, J. Flat Ontology and Geography. *Dialogues Hum. Geogr.* **2020**, *10*, 345–361. [\[CrossRef\]](#)
26. Fariás, I.; Bender, T. (Eds.) *Urban Assemblages: How Actor-Network Theory Changes Urban Studies*; Routledge: London, UK, 2010.
27. Gad, C.; Jensen, C.B. On the Consequences of Post-ANT. *Sci. Technol. Hum. Values* **2010**, *35*, 55–80. [\[CrossRef\]](#)
28. Latour, B. *We Have Never Been Modern*; Harvard University Press: Cambridge, MA, USA, 1993.
29. Rose, M.; Bissell, D.; Harrison, P. Negative Geographies. In *Negative Geographies: Exploring the Politics of Limits*; Routledge: London, UK, 2021; pp. 1–38.
30. Simpson, P. *Non-Representational Theory*; Routledge: London, UK, 2020.
31. Bai, X.; Leeuw, S.; O'Brien, K.; Berkhout, F.; Biermann, F.; Brondizio, E.S.; Cudennec, C. Plausible and Desirable Futures in the Anthropocene: A New Research Agenda. *Glob. Environ. Change* **2016**, *39*, 351–362. [\[CrossRef\]](#)
32. Leach, M.; Reyers, B.; Bai, X.; Brondizio, E.S.; Cook, C.; Díaz, S.; Espindola, G.; Scobie, M.; Stafford-Smith, M.; Subramanian, S.M. Equity and Sustainability in the Anthropocene: A Social-Ecological Systems Perspective on Their Intertwined Futures. *Glob. Sustain.* **2018**, *1*, 13. [\[CrossRef\]](#)
33. Khan, A.Z.; Moulaert, F.; Schreurs, J. Epistemology of Space: Exploring Relational Perspectives in Planning, Urbanism, and Architecture. *Int. Plan. Stud.* **2013**, *18*, 287–303. [\[CrossRef\]](#)
34. Anacker, K.B. The Evolution of the Four Eras of Urban Planning Education in the United States. *J. Plan. Educ. Res.* **2023**, *44*, 2294–2304. [\[CrossRef\]](#)
35. Hurlimann, A.; Cobbinah, P.B.; Bush, J.; March, A. Is Climate Change in the Curriculum? An Analysis of Australian Urban Planning Degrees. *Environ. Educ. Res.* **2021**, *27*, 970–991. [\[CrossRef\]](#)
36. Preston-Jones, A. The Importance of Climate Change Education in Urban Planning: A Review of Planning Courses at UK Universities. In *Climate Change, Hazards and Adaptation Options. Climate Change Management (1045–1067)*; Filho, W.L., Nagy, G., Borga, M., Muñoz, P.C., Magnuszewski, A., Eds.; Springer: Berlin, Germany, 2020.
37. Johnson, C.; Sliuzas, R.; Galderisi, A.; Grancieri Bradaschia, M.; Zwangsleitner, D.; Caroca Fernandez, A.; Hasemi, M. Are Spatial Planning Schools across Europe Teaching Climate Change? A Survey of Curricula in the European Context. *J. Plan. Educ. Res.* **2026**, *46*, 544–556. [\[CrossRef\]](#)

38. Scholz, W.; Stober, T.; Sassen, H. Are Urban Planning Schools in the Global South Prepared for Current Challenges of Climate Change and Disaster Risks? *Sustainability* **2021**, *13*, 1064. [[CrossRef](#)]
39. Moosavi, S.; Bush, J. Embedding Sustainability in Interdisciplinary Pedagogy for Planning and Design Studios. *J. Plan. Educ. Res.* **2024**, *44*, 576–589. [[CrossRef](#)]
40. Krippendorff, K. *Content Analysis: An Introduction to Its Methodology*; Sage Publications: Thousand Oaks, CA, USA, 2018.
41. Bowen, G.A. Document Analysis as a Qualitative Research Method. *Qual. Res. J.* **2009**, *9*, 27–40. [[CrossRef](#)]
42. Tight, M. *Documentary Research in the Social Sciences*; Sage Publications: Thousand Oaks, CA, USA, 2019.
43. Swain, J.; King, B. Using Informal Conversations in Qualitative Research. *Int. J. Qual. Methods* **2022**, *21*, 16094069221085056. [[CrossRef](#)]
44. Birdman, J.; Wiek, A.; Lang, D.J. Developing Key Competencies in Sustainability through Project-Based Learning in Graduate Sustainability Programs. *Int. J. Sustain. High. Educ.* **2022**, *23*, 1139–1157. [[CrossRef](#)]
45. Shilon, M. Mitigating Challenges in Urban Planning Community Engaged Learning: Advancing a Relational Approach in Planning Education. *Plan. Theory Pract.* **2026**, *27*, 227–244. [[CrossRef](#)]
46. Shilon, M. Disciplinary Disconnects: Urban Planning’s Neglect of Nonrepresentational Thinking. *J. Am. Plan. Assoc.* **2026**, *92*, 397–409. [[CrossRef](#)]
47. Hess, D.J.; Collins, B.M. Climate Change and Higher Education: Assessing Factors That Affect Curriculum Requirements. *J. Clean. Prod.* **2018**, *170*, 1451–1458. [[CrossRef](#)]

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