SAMPL

Sustainable Adaptive Material Performance Level

PRACTICAL LEARNING GUIDE

Interior Environment Planning Framework

Fall 2025 Edition

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The development and implementation of the SAMPL (Sustainable Adaptive Material Performance Level) Program Guide represents a collaborative effort spanning multiple years and drawing upon the expertise of numerous individuals and organizations committed to advancing resilient material design education in the built environment.

Funding and Support

This work was made possible through the generous support of a grant from the Angelo Donghia Foundation, whose commitment to advancing interior design education provided the essential foundation for SAMPL development. We sincerely thank the Foundation's leadership and board members for recognizing the importance of integrating resilience and sustainability principles into design curricula.

Industry partners, including Floor and Decor also provided invaluable in-kind support and resources that enabled the development of SAMPL-aligned curricula and educational materials. These partnerships demonstrate the critical connection between academic research and professional practice.

Principal Investigator and Development Team

Lisa Sundahl Platt, Ph.D., Assistant Professor of Interior Design at the University of Florida College of Design, Construction and Planning, and researcher for the Florida Institute for Built Environment Resilience (FIBER), served as Principal Investigator for the SAMPL project. Dr. Platt led the project from initial concept through implementation and testing. Arezoo Zeinali, Ph.D. candidate in Interior Design at UF DCP and FIBER Graduate Research Assistant, worked with Dr. Platt to develop all SAMPL online AI platforms and material calculators. Together, they created the technological components that support SAMPL implementation in research and educational settings.

SAMPL Development Steering Committee

The educational development and oversight of SAMPL was guided by a steering committee comprising faculty from the University of Florida College of Design, Construction, and Planning. The committee included Sheila Bosch, Ph.D., Associate Professor of Interior Design; Nam-Kyu Park, Ph.D., Associate Professor of Interior Design; Roberto Chardon Rengel, Ph.D., Professor and Chair of the Department of Interior Design; and Shabboo Valipoor, Ph.D., Associate Professor of Interior Design. The committee members provided expertise in educational methodology, curriculum development, international design education, strategic planning, and environmental performance assessment throughout the SAMPL development process.

ACKNOWLEDGEMENTS

Additional Contributors

Several faculty members provided targeted contributions to specific aspects of SAMPL development. Jason Meneely, Associate Professor of Interior Design at UF DCP; Genesis Okken, Instructional Professor of Interior Design at UF DCP; Margaret Portillo, Ph.D., Professor of Interior Design at UF DCP; and Luis Mejía Puig, Ph.D., Assistant Professor of Interior Design at UF DCP, offered guidance on communication strategies and branding considerations for the SAMPL framework. Michelle Matckie provided leadership in the administration of funding and procurement and management of resources that facilitated the development of model standards.

Acknowledgment is also given to several undergraduate students for their significant contributions to the SAMPL educational platform. Ashlyn Murry developed SAMPL's graphic branding and visual communication. Meagan Pelham manages product curation for the SAMPL material library and lab. She also oversees ongoing data entry into the SAMPL relational database. Jenna Keller and Marlee Tobik supported the project through their work on SAMPL data entry. Their efforts have been essential to the platform's development and ongoing success.

Ongoing Research Collaboration

The continued development and application of SAMPL for research purposes is advancing through ongoing collaboration at FIBER. Dr. Platt, Ms. Zeinali, and Jeff Carney, Professor of Architecture and Director of FIBER, are conducting applied research that extends the SAMPL framework into broader resilience and sustainability applications. For example, the SAMPL platform is undergoing expansion in collaboration with Dr. Patricia Born, the Midyette Eminent Scholar in Rick Management and Insurance, to advance its application as a framework for designing hazard-resilient housing with the intended outcome of mitigating risk exposure and reducing insurance premiums. This continuing work ensures that SAMPL remains responsive to emerging challenges in the built environment and maintains its relevance to contemporary design practice and emerging industry trends.

Dr. Leonard Terry of UF Innovate provided guidance throughout the provisional patenting process for the SAMPL computational modeling system, a key component of this project and related funded research initiatives.

The expertise and collaboration of these individuals and organizations made the SAMPL Program Guide possible. Their dedication to advancing education in built environment resilience and regenerative materials will benefit students, educators, researchers, and design professionals committed to creating safer, symbiotic, supportive, sustainable, and salutogenic environments.

EXECUTIVE SUMMARY

SAMPL at a Glance

The Sustainable Adaptive Material Performance Level (SAMPL) model provides interior design educators with a systematic approach to teaching resilient material selection through three core performance categories: **Strength, Sustainability,** and **Symbiosis.** This educational framework addresses the persistent gap between theoretical knowledge and practical application in building material education by integrating resilience engineering principles with established pedagogical methods. SAMPL offers educators a structured platform that connects material performance data with real-world design decision-making, enabling students to develop critical competencies in systems-thinking, strategic planning, and sustainable design practice. The framework aligns and supports advancing sustainability education while preparing students to create resilient, health-positive environments. Through its evidence-based approach and adaptable structure, SAMPL demonstrates potential for implementation across diverse educational contexts and disciplines, making it a valuable resource for programs committed to fostering resilience and sustainability-literate design professionals.

Design educators implementing SAMPL into course curriculum gain these essential benefits:

- Model aligns with CIDA 2024 Standards 1, 4, 7-9, 13-16
- Integrates best practices in sustainability education and reduces urban environmental impacts
- Bridges the theory-practice gap in material specification
- Supports evidence-based design decision-making

SAMPL's three core categories help design students develop key competencies in these areas of material performance:

- **STRENGTH:** Material durability, safety, and longevity (maintainability, flame resistance, hardness)
- **SYMBIOSIS:** Contextual adaptability and user-centered performance (sound absorption, responsiveness, multi-context use)
- **SUSTAINABILITY:** Environmental and health impacts (embodied carbon, low emissions, ethical sourcing)

SAMPL was created in part to unite proven teaching strategies with real-world design needs, enabling faculty to better prepare students for the complex demands of resilient and sustainable material selection in diverse professional environments.

INTRODUCTION

The Sustainable Adaptive Material Performance Level (SAMPL) suite of educational resources encourages students to evaluate building material resilience through systems modeling, linking individual material properties to overall building performance.

Materials used in buildings play a major role in both the building's environmental impact and its ability to respond to these challenges. Designing safe, adaptable, and sustainable spaces is increasingly important because of climate related risks, natural disasters, and other system stresses. When choosing building materials and finishes, designers should prioritize performance as a guiding criterion in addition to aesthetics.

SAMPL guided curriculum is designed to bridge the gap between theory and practice in design education by providing students with a structured approach to evaluating building materials. SAMPL uses real-world performance data to inform material selection, focusing on resilience. In other words, how well a material endures and recovers from stress as well as sustainability, which includes minimizing risks to human health and reducing environmental impacts. The framework integrates key priorities such as durability, safety, adaptability, and responsible sourcing, and adopting technical indicators from established standards.

By prioritizing material choices that support high-quality sustainability education and emphasize the reduction of environmental impacts in the built environment, SAMPL ensures that design decisions address both functional and aesthetic requirements while fostering environments that are safe, adaptable, and responsive to contemporary environmental standards. This approach supports the development of future design professionals capable of specifying and designing with materials that advance ecological and human well-being over time.

About the SAMPL Practical Learning Guide

The SAMPL Educational Guide streamlines material selection in design education by organizing evaluation into three resilience-focused categories: Strength, Sustainability, and Symbiosis. This structure supports systematic analysis and project-based learning, helping students develop systems-thinking and sustainability skills.For maximum effectiveness, students and instructors should integrate SAMPL's methodology into hands-on projects, mapping curriculum goals to resilience domains and material metrics. The guide encourages using scorecards in practical tasks to build foundational material knowledge and the ability to specify materials for resilient, sustainable outcomes.

MODEL SYNOPSIS

SAMPL Resilience Categories

A resilience-based curriculum for building materials and interior finishes, like the SAMPL model, helps design students develop expertise in material selection by combining systems-thinking, organized teaching methods, and evidence-based instruction. Using SAMPL as a learning model in concert with frameworks like Bloom's Taxonomy and presenting material performance data in clear, structured formats allows educators to guide students from foundational understanding to advanced problem-solving skills. Regular analysis and hands-on learning activities reinforce both technical knowledge and lasting retention. This practical approach enables students to understand complex material criteria and make confident, well-informed decisions in real design situations. Ultimately, this approach builds resilient and adaptable skills that equip design graduates to tackle the changing demands of the built environment.

SAMPL COMPOSITE CRITERIA DEFINITIONS

SUSTAINABILITY

Prioritizes ecological, human, and economic health by focusing on embodied carbon, ingredient transparency, ethical sourcing, recycled content, recyclability, low emissions, and responsible extraction, enabling students to choose materials that minimize environmental impacts and promote sustainable, responsible design.

SYMBIOSIS

Addresses how materials adapt to different built environments through responsiveness, durability, sound absorption, lighting and glare control, self-healing, and reliable performance in various contexts. Teaching these criteria equips students to design flexible, user-centered spaces that meet both technical needs and enhance occupant comfort and adaptability.

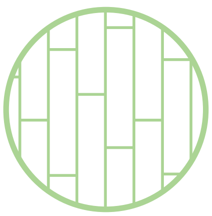
STRENGTH

Emphasizes key properties like maintainability, cleanability, flame and smoke resistance, hardness, imperviousness, and color fastness that promote reliable, safe, and long-lasting materials. Prioritizing these attributes guides students to select materials that protect occupant health and minimize early replacement.

Interior Material Typologies

SAMPL enables users to assesses the resilience and sustainability of many interior finishes—including flooring, walls, millwork, casework, applied interior environment, and ceilings, to offer a comprehensive understanding of how material choices support adaptive and sustainable design.

The following list shows how SAMPL helps design students understand and assess material performance in design settings, offering practical insights for evaluating key attributes.

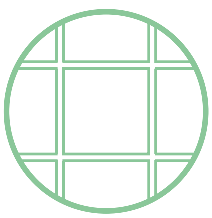


FLOORING

evaluates technical performance measures including maintainability, fire resistance, and sustainability attributes across three core categories of strength, symbiosis, and sustainability to assess material resilience for flooring applications.

CASEWORK

summarizes casework resilience through comprehensive assessment of cabinet materials including hardness, imperviousness, and circularity to support functional workspace design.

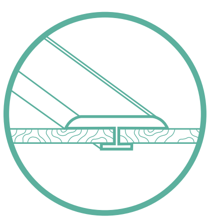


CEILING

assesses ceiling material resilience through technical performance measures focused on acoustical properties, luminance, and environmental impact to determine performance ratings.

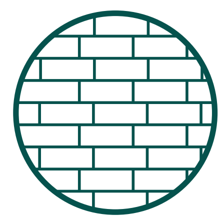
FURNISHINGS

determines furnishing resilience by scoring upholstery materials across flame resistance, cleanability, and recycled content to ensure safe and sustainable interior environments.



TRANSITIONS

determines transition resilience by evaluating grout and metal trim performance across durability, water resistance, and sustainability metrics to ensure seamless material interfaces.

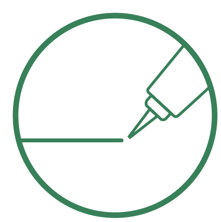


WALL TREATMENT

assesses wall treatment resilience by evaluating paint, wallcovering, and specialty finishes for lightfastness, low emissions, and ingredient transparency.

MILLWORK

evaluates millwork resilience by analyzing solid surface, wood, and acrylic resin materials for structural strength, contextual symbiosis, and environmental sustainability performance.



ADHESIVES & SEALANTS

analyzes adhesive and sealant resilience by analyzing bonding performance, water resistance, and volatile organic compound levels to ensure secure material connections.

SAMPL COMPOSITE MATERIAL PERFORMANCE CRITERIA

STRENGTH Category Overview

The STRENGTH category within the Sustainable Adaptive Material Performance Level (SAMPL) model centers on essential attributes contributing to interior finishes' durability, safety, and reliability. This focus equips students with the skills to assess building materials based on measurable technical performance indicators, ensuring spaces meet design intentions and maintain protective qualities throughout their lifecycle. Emphasizing these characteristics supports occupant health, extends the useful life of materials, and reduces overall environmental impact, aligning closely with best practices in resilient design education.

Critical Performance Indicators

Students examine seven key areas when evaluating the strength of interior finishes. The Materiality Resilience Calculator, referenced in the SAMPL model, provides a structured approach for analyzing each measure in real design contexts:

Maintainability:
This measure examines how easily materials can be repaired or maintained over time. High maintainability reduces the need for frequent replacement or specialist repairs, making materials economically and environmentally responsible choices.

Cleanability:
Evaluating how well a material stands up to routine cleaning procedures and how often and easily surfaces can be restored to hygienic conditions is crucial. This issue is critical in spaces with high occupant turnover or health sensitivity.

Flame Resistance:
Flame resistance relates to a material's ability to limit fire spread, as documented by ASTM E648, ASTM E84, and UL723 test methods. Materials that achieve strong performance in this measure contribute to the overall fire safety of an environment, which is a critical requirement in most building codes.

Smoke Resistance:
In addition to fire safety, smoke development ratings like ASTM E662 and ASTM D2843 safeguard occupants from potential harm during fire events. Materials selected for low smoke emissions enhance building safety, supporting design compliance with established health standards.

Hardness:

This property assesses the material's ability to withstand physical wear, scratches, or impacts. High measures of material hardness ensures surfaces retain appearance and function across years of daily use.

Imperviousness (Water/Moisture Resistance):

The resilience calculator measures how well materials resist moisture penetration. This factor is essential in environments subject to spills, cleaning operations, or humidity, ensuring long-term structural integrity and preventing deterioration.

Light & Color Fastness:

This includes resistance to fading from sunlight or artificial light (light fastness), and resistance to color loss or transfer due to rubbing (crocking) or repeated laundering. Window treatments and upholstery placed in direct sun or high-use areas should be selected for strong color fastness, light fastness, and crocking resistance, ensuring colors stay true and surfaces maintain their quality over time.

Applications in Design Curriculum

By investigating these performance indicators, students learn to make informed decisions that uphold human safety, functional durability, and visual quality. The Materiality Resilience Calculator enables students to compare and score materials on these specific factors, encouraging the integration of quantifiable metrics into material selection processes. Hands-on exercises using the calculator familiarize students with interpreting manufacturer test data and weighing design trade-offs, supporting active engagement with contemporary building standards.

These competencies directly address the Council for Interior Design Accreditation (CIDA) Standard 7, which targets Human-Centered Design. By prioritizing attributes like maintainability and safety, students develop a habit of specifying finishes that safeguard health, extend value, and foster a resilient built environment.

Connecting STRENGTH to Resilience

Teaching the STRENGTH category advances a system-level understanding of how material choices affect building performance under everyday use and stress. Students recognize the relationship between technical criteria, such as fire safety or water resistance, and the broader goals of sustainable and adaptive interiors. Integrating these assessments into the design curriculum ensures that future professionals are well prepared to deliver evidence-based solutions for resilient, occupant-focused environments in any project setting.

SAMPL COMPOSITE MATERIAL PERFORMANCE CRITERIA

SYMBIOSIS Category Overview

The SYMBIOSIS category in the SAMPL framework addresses how interior finishes respond to context and user needs, focusing on attributes that enhance adaptability, functionality, and comfort within diverse spaces. This category prompts students to analyze how materials contribute to occupant well-being, acoustic and visual quality, and flexibility, ensuring that the material palette supports immediate and long-term user requirements. By foregrounding these characteristics, the curriculum fosters awareness of how materials mediate the experience of place, adapt across different functions, and maintain relevance as conditions evolve, principles central to resilient, human-centered design education.

Critical Performance Indicators

Students apply the Materiality Resilience Calculator to explore SYMBIOSIS measures, investigating the following key performance dimensions in their design work:

Responsiveness:
This factor evaluates a material's ability to respond effectively to changing occupancy patterns, functions, or environmental conditions. Responsive materials help ensure interiors remain functional and comfortable as activities or spatial needs shift.

Use-Life:
Use-life considers how long a material can serve its purpose without significantly losing function, form, or user benefit. Materials with extended use adapt to evolving needs and minimize the frequency of replacements, contributing to resource efficiency and continuity of use.

Sound Absorption / Abatement:
This indicator measures the ability of finishes to dampen, absorb, or manage airborne noise within a space. Properly selected finishes improve acoustic comfort and mitigate the adverse effects of high noise levels, particularly in work, learning, or healthcare environments.

Luminance:
Luminance assesses the capacity of a finish to reflect, diffuse, or absorb light, thereby shaping the quality and distribution of illumination. Material choices in this area affect user visibility, mood, and energy efficiency, especially in rooms with shared or changing lighting needs.

Glare Reduction:

This factor pertains to a material's ability to limit harsh reflections or excessive brightness that can impair vision and cause discomfort. Effective glare reduction supports better visual performance and occupant well-being, especially in workspaces and educational settings.

Self-Healing:

Self-healing addresses the built-in capacity of specific finishes to recover from minor damage, such as scratches or dents, over time or with minimal intervention. Materials with self-healing properties maintain their functionality and appearance longer under regular use.

Reclaim / Reuse:

This metric evaluates the potential for disassembling, reusing, or integrating materials into new applications with minimal reprocessing. Supporting design for deconstruction, reclaim, and reuse ensures adaptability as interiors are repurposed or updated, reducing waste across the material lifecycle.

Applications in Design Curriculum

Exploring the SYMBIOSIS category teaches students to identify materials that can accommodate contextual shifts, support various user activities, and enhance the overall quality of experience. The Materiality Resilience Calculator offers hands-on opportunities to compare material options according to these adaptable, user-focused measures, reinforcing technical and experiential criteria integration in the selection process. Through case studies and simulation exercises, students practice balancing acoustic, visual, and tactile qualities to promote well-being and accommodate the needs of diverse populations.

This skillset aligns with CIDA Standard 7 (Human-Centered Design) and advances systems-thinking, collaboration, and anticipatory planning competencies. Students gain proficiency in specifying finishes that facilitate positive, health-supportive environments across various building types by foregrounding flexibility and user comfort.

Connecting SYMBIOSIS to Resilience

By investigating SYMBIOSIS, students cultivate a nuanced perspective on how finishes support continual adaptation and reciprocal relationships between built environments and occupants. These measures reveal the significance of selecting finishes that can adjust to new uses, sustain functionality, and foster supportive settings as needs and conditions change. Embedding SYMBIOSIS within the design curriculum ensures graduates can deliver material solutions that promote resilience in terms of structural endurance and as dynamic contributors to user satisfaction, universal design, and long-term success in the built environment.

SAMPL COMPOSITE MATERIAL PERFORMANCE CRITERIA

SUSTAINABILITY Category Overview

The SUSTAINABILITY category of the SAMPL framework challenges students to consider the broad environmental, health, and ethical impacts of finish selections throughout the lifecycle of interior spaces. Analysis within this category extends from minimizing embedded carbon and pollutant emissions to advancing transparent, responsible supply chains and regional sourcing. By foregrounding sustainability, the curriculum aligns with best practices in regenerative design, emphasizing closed material loops, responsible resource use, and strategies that move built environments toward regenerative design and positive ecological outcomes rather than simply minimizing harm. Students learn to substantiate material decisions with documented technical performance measures and life cycle evidence to support measurable improvements in environmental quality and occupant well-being.

Critical Performance Indicators

The Materiality Resilience Calculator supports guided review of SUSTAINABILITY criteria, equipping students to assess the following primary considerations for materials and finishes:

Circularity:
Circularity examines whether materials are part of a closed-loop system, meaning products are designed for repeated recovering, repurposing, or recycling. Emphasis is placed on selecting finishes that can be efficiently disassembled, reused, or returned to manufacturing processes, with minimal loss of value or quality.

Embodied Carbon:
Embodied Carbon refers to the greenhouse gas emissions released during the extraction, production, transportation, and installation of materials. Lower embodied carbon values are preferred and often substantiated by third-party Environmental Product Declarations (EPDs) or lifecycle assessment data, aligning finishes with regenerative design practices emphasizing net-positive impact.

Ingredient Transparency:
Transparency means full disclosure of a material’s chemical composition and any hazardous substances it may contain, allowing informed decision-making to avoid substances harmful to human and ecological health. When grading finishes, students learn to interpret certification documents, such as Health Product Declarations (HPDs) or Declare labels.

Ethical Supply:
This factor addresses social responsibility across the supply chain, confirming that material sources adhere to fair labor, community welfare, and anti-exploitation standards. Students are taught to prioritize products with certifications or declarations that document ethical manufacturing and harvesting practices.

Recycled Content:
Recycled content reflects the proportion of post-consumer or post-industrial material incorporated into a finish. High levels indicate a reduction in the extraction of new raw resources and support the material economy's closed-loop goals.

Recyclability Potential:
This measure considers a product's ability to be reclaimed and processed into new goods at end-of-life, distinct from landfill disposal. Students compare finishes based on local recycling infrastructure, material composition, and take-back programs.

Low Emissions:
Low emissions performance ensures interior materials limit harmful substance off-gassing into occupied spaces, a key requirement for many green building programs. Products are assessed for compliance with third-party air quality and emissions standards, such as GREENGUARD or FloorScore.

Chain of Custody:
Chain of custody documents track material origin and handling, verifying responsible sourcing, especially for wood, textiles, and other products with global commodity supply chains. Students explore how certifications (e.g., FSC, PEFC) establish traceable, legal, and sustainable sourcing.

Responsible Extraction:
Responsible extraction confirms that material harvesting minimizes damage to the environment, habitats, and communities. This condition includes adherence to resource management standards and suppliers' commitments to ecosystem restoration.

Regional Availability:
Regional sourcing evaluates the proximity of manufacturing or harvesting to the project site, reducing transport emissions and supporting the local economy. Students identify materials and finishes, aligning with regional content and documentation project goals.

Applications in Design Curriculum

Increasingly design projects are incorporating sustainability parameters from local code requirements to client ecolabel checklists and international frameworks. SAMPL-guided curriculum uses the Materiality Resilience Calculator to compare product transparency, carbon footprint profiles, and certification evidence. Exercises involve sourcing product documentation, calculating embodied carbon using provided tools, and proposing alternatives where information is missing or insufficient. Scenario analyses advances practical understanding of how sustainable material specification influences health, operations, carbon and waste reduction initiatives.

This curriculum supports best practices for environmental stewardship and regenerative design by training students to integrate comprehensive sustainability factors into material selection and documentation. The result is a professional skillset that applies sustainability principles intentionally to a broad range of interior environment planning contexts.

Connecting SUSTAINABILITY to Resilience

Integrating SUSTAINABILITY into design education emphasizes the connection between evidence-based material decisions and the long-term performance of interiors and the larger environment. By investigating carbon emissions, material recovery, and ethical supply, students appreciate the systemic ripple effects of their choice, supporting both building resilience and broader goals around climate adaptation, resource conservation, and restorative design strategies. The curriculum's attention to SUSTAINABILITY ensures graduates can implement innovative, credible, and regionally attuned solutions that stand up to scrutiny by regulatory agencies, clients, and sustainability peers.

SAMPL SCORECARD

The SAMPL Project Materiality Calculator is an interactive dashboard tool that enables users to evaluate, score, and visualize material finishes across STRENGTH, SYMBIOSIS, and SUSTAINABILITY criteria using verifiable evidence, with dynamic updates to charts and composite performance metrics as entries are documented and expanded.

Instructions for Use:
The SAMPL Project Dashboard guides material evaluation by scoring each finish for STRENGTH, SYMBIOSIS, and SUSTAINABILITY: enter “1” if substantiated by technical documentation, thirdparty testing, or recognized certification, and “0” if such evidence is absent. Rely exclusively on credible sources to verify performance traits, ensuring your assessments are both accurate and reliable. As you update material scores, the dashboard’s interactive charts and averages will automatically recalculate, giving you immediate insight into overall material performance and composite results. The image below shows the architecture of the SAMPL Project Materiality Resilience Calculator, highlighting its workflow and system for categorizing materials by project criteria.

	STRENGTH							SYMBIOSIS									SUSTAINABILITY								
MATERIAL TYPE	MAINTAINABILITY	CLEANABILITY	FLAME RESISTANCE	SMOKE RESISTANCE	HARDNESS	IMPERVIOUSNESS	COLOR/LIGHT FASTNESS	RESPONSIVENESS	USE-LIFE	SOUND ABSORPTION	LUMINANCE	GLARE REDUCTION	SELF-HEALING	RECLAIM/REUSE	R-VALUE	CIRCULARITY	EMBODIED CARBON	INGREDIENT TRANSPARENCY	ETHICAL SUPPLY	RECYCLED CONTENT	RECYCLABILITY POTENTIAL	LOW EMISSIONS	CHAIN OF CUSTODY (COC)	REGIONAL AVAILABILITY	RESPONSIBLE EXTRACTION
FLOORING																									
WALLS																									
MILLWORK																									
CASEWORK																									
EG/IS*																									
TEXTILES																									
CEILING																									

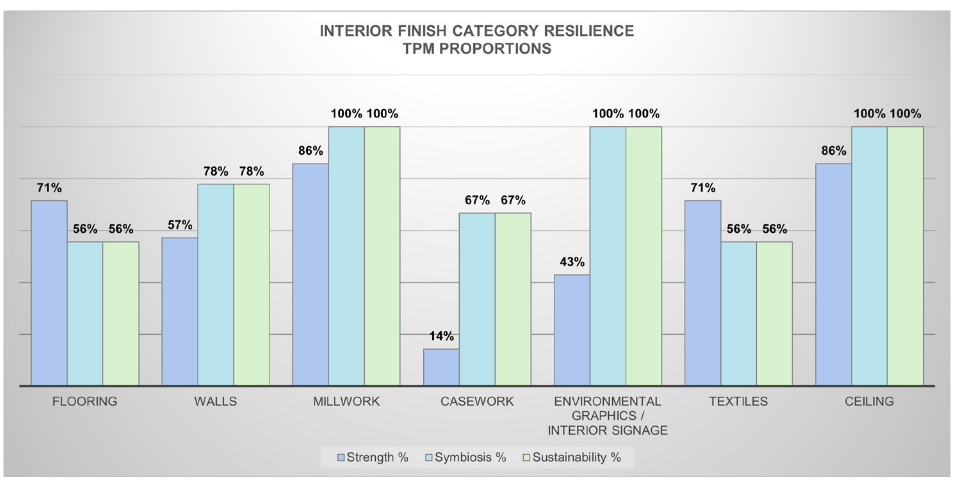
EG - Environmental Graphics
IS - Interior Signage

Process Overview

Users should navigate to the relevant material categories in the SAMPL Dashboard (such as Flooring, Walls, or Millwork). For each material, review all listed Technical Performance Measures under the headings STRENGTH, SYMBIOSIS, and SUSTAINABILITY. These measures include characteristics like durability, fire rating, ingredient transparency, and regional sourcing. Before assigning a score to any measure, consult supporting technical documents, such as manufacturer specification sheets, certified test results, or verified ecolabels to confirm whether the performance attribute is substantiated. Only after confirming the presence or absence of evidence should a value be entered. Consistently using reliable documentation maintains the integrity of the scorecard and supports evidence-based design decisions.

Automated Dashboard and Data Visualization

With each entry, the calculator's built-in formulas immediately update key indices: categorical averages for each criterion, overall project-wide resilience proportions, and interactive visualizations, such as KPI heatmaps and bar charts. These displays present an up-to-date summary of how well materials in the project align with resilience and regenerative design principles. Performance results are stratified, providing color-coded thresholds (Average, Enhanced, Excellent, Optimal) that translate technical scores into actionable design intelligence for product selection. As more finishes are evaluated and more measures are scored, aggregate project statistics are dynamically recalculated, enabling users to compare alternatives and monitor progress toward performance goals quickly.



Tool Tip

For each material or finish, verify the presence of technical evidence, such as manufacturer certificates, industry test reports, or independent ecolabels, before entering a "1" for any performance trait under STRENGTH, SYMBIOSIS, or SUSTAINABILITY. Use "0" if no documentation is available. Expand the table with new rows for additional products as needed, ensuring you copy pre-formatted cells to retain the calculator's auto-updating and KPI calculation features.

Integrating the Scorecard into Course Projects

The SAMPL scorecard serves as both a teaching and assessment tool for course-based design projects focused on resilience. Material design project teams are directed to populate the scorecard for all major finish categories in their design. The worksheet structure accommodates additional rows for unique materials, supporting customization for varied project types. As students complete their evaluations, the scorecard's visual outputs highlight the strengths and weaknesses of their material choices and reinforce the value of research-driven selection. Materials with incomplete or undocumented attributes encourage critical inquiry and provide learning opportunities to seek alternatives or advocate for better transparency from manufacturers.

Evidence-Based and Regenerative Design Practice

The SAMPL methodology uses valid evidence to strengthen material intelligence and promote regenerative building outcomes. The process of requiring documentation for every "1" score advances rigorous habits in design practice. It aligns student work with current professional standards in resilient and sustainable interiors. The resulting dashboard outputs can be included in design submissions, used in project presentations, or referenced in stakeholder discussions to demonstrate responsible material selection and to track improvement over successive project iterations. Consistently reviewing the scorecard metrics throughout the curriculum fosters long-term competence in navigating the evolving landscape of performance-based product evaluation.

Tool Tip

After documenting all material scores, review the dynamic KPI heatmaps, bar charts, and overall category ratings to identify which finish types meet project resilience thresholds: Average, Enhanced, Excellent, or Optimal. Use these visuals to compare product performance, spot gaps in documentation, and guide specification decisions that strengthen design resilience and meet course project requirements.

Project Dashboard Architecture

The architecture of the SAMPL Project Materiality Calculator supports a transparent, stepwise workflow that spans the identification of material requirements, systematic evidence collection, scoring and documentation, automated calculation of performance metrics, and the dynamic visualization of project-level results. This workflow ensures that individual materials and complete finish schemes are scrutinized for their adaptive and regenerative qualities, enabling instructors and students to prioritize resilient outcomes and positive environmental impact in all design development phases.

IMPLEMENTATION GUIDE FOR EDUCATORS

SAMPL Model Implementation Guide for Design Educators

Foundations and Rationale

The growing complexity of material performance demands in the built environment, driven by evolving climate hazards, health standards, and the need for regenerative strategies, requires that future design professionals be equipped with resilient design competencies. The SAMPL framework addresses this gap by providing a structured, evidence-based approach for teaching resilient and sustainable material selection, bridging theory and application through quantitative assessment of technical performance measures (TPMs).

Built upon validated research in resilience engineering, environmental health, and pedagogy, the SAMPL model categorizes each material's adaptive capacity through three overarching domains:

- **STRENGTH:** Capturing durability, cleanability, resistance to fire, smoke, and water, as well as foundational safety and maintainability factors.
- **SYMBIOSIS:** Reflecting environmental responsiveness, occupant adaptability, sound and light quality, and performance within diverse operational contexts.
- **SUSTAINABILITY:** Addressing life cycle impacts, recycled content, supply transparency, embodied carbon, regionality, and responsible sourcing.

These TPMs are scored exclusively with documentation-based evidence, a "1" for standards met, a "0" for absent documentation, creating a rigorously objective system that underpins class assignments, student projects, and performance reviews.

Alignment With Curriculum and Accreditation Objectives

As demonstrated in the IND3522 (Interior Finishes and Materials) syllabus, the SAMPL model's integration aligns with Council for Interior Design Accreditation (CIDA) 2024 standards by ensuring students can:

- Source and specify surfaces sensitive to environmental, user, and sustainability requirements (CIDA 4a&c, 7c&d, 13c&d).
- Reference CSI standards for documentation and specification (notably Division 9).
- Communicate the rationale for material choices to diverse project stakeholders, including post-occupancy evaluation and feedback loops (CIDA 8i, 9a-c).

- Apply systems-based thinking in material performance, integrating safety and circularity criteria relevant for resilient, regionally attuned design.

Consistent use of the SAMPL scorecard and dashboard enables educators to structure authentic, real-world assignments, such as renovation case studies, field trips, and post-occupancy reviews, all while scaffolding learning outcomes from foundational knowledge acquisition through applied and evaluative skills development.

Course Structure and Sequence

A recommended implementation schedule for the SAMPL model incorporates:

- **Module 1:** Introduction to SAMPL principles, the dashboard tool, and foundational material safety concepts.
- **Module 2:** Contextual application to flooring, walls, casework, ceilings, and related product categories; students complete initial TPM evaluations for assigned materials.
- **Module 3-5:** Integrating SAMPL metrics into collaborative team projects, students use the dashboard as an analytical and presentation tool to benchmark material resilience and sustainability across proposed finish schemes.

Assignments are staged to progress from basic TPM documentation exercises toward comprehensive, scenario-driven tasks that include specification writing, stakeholder communication, and synthesis of dashboard output into design deliverables. Regular hands-on sessions dedicated to SAMPL data entry, analysis, and result interpretation should be interwoven into the schedule and linked to field experience (e.g., material sourcing field trips, vendor presentations).

Instructor Guidance for Model Use

1. **Orientation:** Begin each term with a dedicated walk-through of the SAMPL model, explaining the rationale, the three performance domains, and the exclusive use of evidence-based scoring.
2. **Scaffolding Evidence:** Train students to locate, interpret, and document evidence from technical data sheets, third-party certifications (e.g., EPDs, HPDs, Cradle to Cradle, LEED, WELL), and regulatory test results. Pace early assignments to build competency in validating material attributes and cross-referencing multiple sources.
3. **Performance Analysis:** Leading guided dashboard review sessions in class. Have students reflect on the TPM heatmaps, bar and pie charts, and composite ratings. Use these outcomes to prompt discussion, like:
    - Why did a material score low on sustainability?
    - What evidence could improve the rating?

- How do these outcomes inform client and stakeholder project decisions and value propositions?

4. **Interactive Feedback:** Integrate SAMPL dashboard outputs into project desk reviews, midterm exhibitions, and final project presentations. Routinely encourage students to revise entries as they source new evidence or shift project priorities, reflecting the iterative nature of resilient design.

Assessment and Evaluation

Assess learning using a combination of SAMPL dashboard completion, documentation accuracy, technical specification writing quality, and communication clarity in both written and oral formats. SAMPL-based assignments can constitute a significant portion of final project, presentation, and class participation grades.

Supplement dashboard analysis with targeted discussion or reflection assignments, ask students to compare the resilience profile of their final material palette before and after iterative review, or to present a rationale for replacing a low-scoring finish with a more resilient alternative.

Future-Proofing Design Education

Adopting SAMPL as a course backbone produces distinct advantages. This approach supports pedagogical rigor, provides objective assessment data for accreditation, and cultivates future-ready graduates capable of leadership in resilient, regenerative design. Implementing the framework also establishes a feedback loop where students hone evidence-based habits, institutions can benchmark program outcomes, and coursework directly supports broader campus or community sustainability targets.

By embedding the SAMPL model and dashboard into design education, instructors provide students with the technical skills required for resilient material specification and the analytical and critical thinking abilities needed for the evolving challenges facing the built environment. The model's principled yet extensible approach ensures applicability across diverse contexts and project types, from institutional renovations to regionally specific, climate-adaptive new construction.

This guide is intended to be adaptable for both undergraduate and graduate curricula, enriching the competency base of future architects, interior designers, facility managers, and allied professionals committed to resilience, evidence-based practice, and the advancement of material intelligence in the built environment.

SAMPL EDUCATIONAL RESOURCES

SAMPL Curriculum Support Tools

A central component of SAMPL implementation is access to user-friendly analytic tools and live examples that bring the framework into the classroom and design practice. Resources supporting curriculum in building materials and interior finishes are open-access materials for design educators seeking to enhance and enrich advanced learning strategies focused on material resilience.

Resource Access and Continuous Support

1. Online AI-driven dashboard SAMPL Resilience Forecasting Dashboard for education and research.
2. Downloadable Excel template of the SAMPL Materiality Resilience Calculator for student and project use.
3. Links to undergraduate student project exemplars demonstrating applied SAMPL methodology.
4. Access to graduate theses and advanced research projects illustrating high-level application and original research using SAMPL metrics.
5. Compilation of publication links to validation studies, technical reports, and peer-reviewed articles documenting SAMPL's evolution and impacts in education and practice.

These resources are curated through the University of Florida College of Design, Construction, and Planning, Department of Interior Design webpage, supporting transparency, accessibility, and continuous learning for all participants in the SAMPL program.

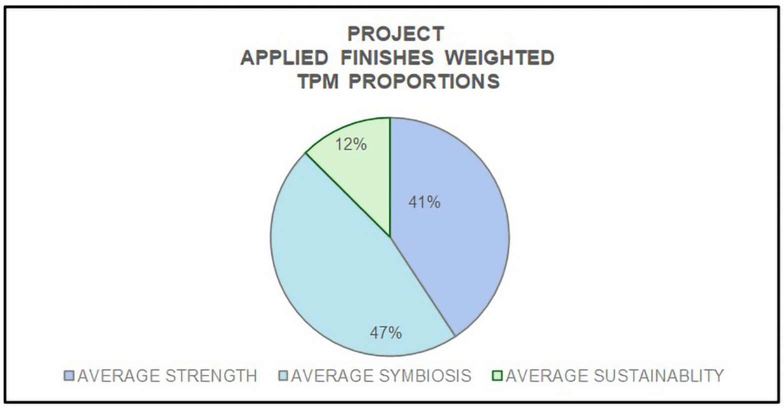
SAMPL Resilience Forecasting Dashboard

The SAMPL resilience forecasting dashboard is an innovative digital platform that enables users to select building materials using performance data relevant to the project context and use. Unlike traditional databases, the platform provides an interactive environment where users can explore and compare how materials perform across various technical and sustainability criteria. This data-driven approach supports more informed, adaptable, and sustainable design decisions, contributing to improved quality and performance of interior environments. With ongoing research and development, SAMPL continuously evolves to guide optimal material choices and evaluate their contributions to resilience and longevity in projects where design quality matters. More than a simple rating system, SAMPL is a comprehensive resource for design intelligence and decision support, ensuring every material selection advances higher health, functionality, and sustainability standards.

SAMPL Materiality Resilience Calculator

The SAMPL Materiality Resilience Calculator is provided as a downloadable Excel template. This tool is structured to align with the composite performance criteria established in the program guide. It is engineered for seamless integration into both individual projects and team-based coursework.

The calculator enables students and educators to systematically evaluate materials and assemblies, record score rationales supported by cited evidence, and view at-a-glance heatmaps reflecting the overall resilience and sustainability of an interior project's material profile. Key performance thresholds are calculated and visually coded directly in the spreadsheet, guiding users toward finishes that meet or surpass the program's expectations for average, enhanced, excellent, or optimal resilience contribution.



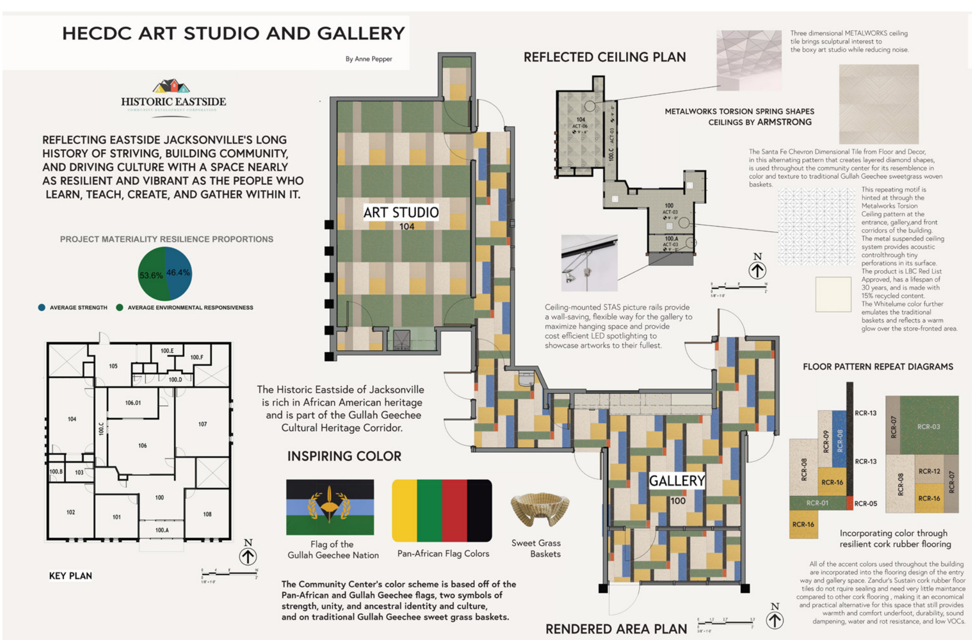
PROJECT RELATIONAL TPM HEATMAP	
FLOORING KPI	72%
WALLS KPI	59%
MILLWORK KPI	94%
CASEWORK KPI	39%
EG|SIGNAGE KPI	50%
TEXTILES KPI	72%
CEILING KPI	94%

TPM MATERIAL RESILIENCE CONTRIBUTION LEVEL			
TAG	RATING	PROPERTY	KPI AVG
○	AVERAGE	=<	0.55
◑	ENHANCED	>=	0.56
◕	EXCELLENT	>=	0.71
●	OPTIMAL	>=	0.90

TPM NOTATION LEGEND	
0=	No evidence or relevant documentation of standard
1=	Evidence or relevant documentation of standard

Student Exemplar Work

To support best practice and foster continual improvement, the Interior Design Department maintains web links to undergraduate student exemplar projects that demonstrate application of the SAMPL methodology in real design scenarios. These examples showcase how dashboards and presentation formats can clearly communicate evidence-based scoring, rigorous documentation, and material intelligence. In addition, graduate thesis projects and advanced studios incorporating SAMPL-aligned research approaches are available as reference models for integrating high-level systems thinking and performance analysis.



Interior Materials Capstone Project; SAMPL Guided Material Design for Historic East side Community Development Cooperation Jacksonville, FL. Student: Anne M. Pepper Class of 2026

Student Research

Students and faculty can access publication links for ongoing SAMPL validation studies and related research articles. These include peer-reviewed journal articles, conference papers, and technical briefs authored by faculty and student teams, documenting both the utility of the SAMPL framework and its evolving relevance in interior design education, material science, and environmental performance assessment.

By engaging with these resources, users gain exposure to current advances in performance-based material selection and see firsthand how the SAMPL approach informs educational outcomes and the broader goals of practice-oriented research, accreditation, and client-facing design communication.

The Infrastructure for Integrative Learning

All major teaching modules and assignments in building material and interior finish education curriculum reference the calculator template and portfolio exemplars, overlaying them onto real-world case studies and collaborative projects. Across the semester, students move from learning about the theoretical underpinnings of material resilience to actively testing and justifying their selections using standardized dashboards. This integrative framework cultivates professional discipline in material research and sourcing. It establishes feedback mechanisms for iterative refinement as students progress through the curriculum.

Faculty are encouraged to update and adapt resource collections as new validated work emerges. This practice ensures that SAMPL's curricular backbone remains dynamic and current. Each semester, instructor and peer feedback on tool performance, interface usability, and evidence requirements are gathered so continuous instructional improvements can be made.

As the educational and practical landscape for resilient and sustainable interiors continues to evolve, these tools and exemplars lay the groundwork for faculty and students to confidently translate SAMPL's evidence-driven model into the fabric of professional decision-making, accreditation, and ongoing design innovation.

REFERENCES EMPLOYED IN DEVELOPMENT

The SAMPL (Sustainable Adaptive Material Performance Level) Practical Learning Guide represents the culmination of an extensive multi-phase development initiative conducted through rigorous research and development supported by a grant from the Angelo Donghia Foundation. This guide synthesizes theoretical frameworks, empirical research, industry expertise, and educational innovation to provide a comprehensive resource for advancing material resilience competencies in design education.

This guide was developed systematically, encompassing literature-based discovery, industry collaboration, and pedagogical validation. The development process involved metasynthesis of key performance indicators through technical performance assessment, codification of interior material and technical performance outcomes, and evaluation of program effectiveness through applied educational research.

The theoretical and methodological foundation for SAMPL draws from peer-reviewed research in resilience engineering, sustainability education, and design pedagogy. The framework integrates Woods' resilience engineering principles with Bloom's Taxonomy to create a structured approach for material performance evaluation. Extensive narrative literature review across disciplines, including resilience engineering, material reliability, design pedagogy, and environmental health, informed the development of the three core performance domains: Strength, Symbiosis, and Sustainability.

The guide incorporates established industry standards and testing protocols from recognized organizations, including the International Code Council (ICC), International Building Code (IBC), ANSI, ISO, UL, and ASTM. Sustainability benchmarking systems from the International Living Future Institute (ILFI), WELL Building Standard, and the US Green Building Council's LEED certification provided additional performance criteria. Input from industry subject matter experts validated key performance indicators and application methodologies.

The SAMPL framework underwent rigorous educational testing through pilot implementation in university-level design coursework. Pre- and post-test assessments suggest significantly improved student understanding of material resilience principles. This empirical validation informed refinements to the pedagogical approach and learning objectives outlined in this guide.

Development of this guide involved interdisciplinary collaboration among faculty researchers, industry professionals, and educational specialists. The steering committee provided ongoing guidance throughout development, ensuring alignment with contemporary educational standards and professional practice requirements.

The guide explicitly addresses Council for Interior Design Accreditation (CIDA) 2024 standards. It supports best practices in education for sustainable development and reducing environmental impacts. The structured approach facilitates the development of systems-thinking, anticipatory, normative, strategic, and interpersonal competencies essential for sustainability education.

This guide is an educational resource and implementation framework for integrating material resilience concepts into design curricula. It provides educators with evidence-based tools, assessment methods, and pedagogical strategies to advance student competencies in sustainable and resilient material selection for the built environment.

SAMPL Program Guide References include the sources listed below.

Industry and Practice Sources

Building Codes and Standards Organizations

- International Code Council (ICC) - International Building Code (IBC)
- 2021 International Building Code (IBC) - CHAPTER 16 STRUCTURAL DESIGN - 1604.5 Risk category
- Facility Guidelines Institute (FGI)
- ANSI (American National Standards Institute)
- ISO (International Organization for Standardization)
- UL (Underwriters Laboratories)
- ASTM International
- ANSI/BIFMA standards

Testing and Performance Standards

- ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems
- ASTM E662 - Standard Test Method for Specific Optical Density of Smoke
- ASTM D2843 - Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics
- UL723 - Standard for Test for Surface Burning Characteristics of Building Materials

Sustainability and Health Standards

- International Living Future Institute (ILFI) - Living Product Challenge Standards
- WELL Building Standard (International WELL Building Institute)
- US Green Building Council (USGBC) - LEED Certification
- Council, U.G.B. (2021). LEED v4.1 - Interior Design and Construction
- Living Product Challenge Handbook: https://tinyurl.com/yvmafv7w
- WELL Materials: https://v2.wellcertified.com/en/wellv2/materials

Professional Organizations

- Council for Interior Design Accreditation (CIDA) 2024 Standards
- National Council for Interior Design Qualification (NCIDQ)

Industry Resources

- Construction Specifications Institute (CSI) - MasterSpec Division 9
- RS Means cost analysis
- WBDG LCCA: https://www.wbdg.org/resources/life-cycle-cost-analysis-lcca
- ICC Chapter 8 Interior Finishes: https://codes.iccsafe.org/content/IBC2021P6/chapter-8-interior-finishes

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Health and Environmental Impact

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- Sá, P., Lourenço, M., & Carlos, V. (2022). Sustainability Competencies in Higher Education Research: An Analysis of Doctoral Theses in Portugal. European Journal of Investigation in Health, Psychology and Education, 12(4), 387-399.
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Systems and Climate Resilience

- Stavros, E. N., et al. (2023). Environmental Resilience Technology: Sustainable Solutions Using Value-Added Analytics in a Changing World. Applied Sciences, 13(19), Article 19.
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GLOSSARY

Acoustic Comfort
The sense of well-being created when unwanted noise is reduced and sounds in a space are pleasant or easy to hear.

ANSI (American National Standards Institute)
An organization that helps set safety and quality standards for products and services in the United States.

ASTM International
A group that develops and publishes technical standards for materials, products, and systems around the world.

Bar Chart
A visual graph that uses rectangular bars to show and compare the amount or frequency of different categories.

Bloom's Taxonomy
A widely used educational framework for organizing learning objectives by different levels of understanding, from basic knowledge to advanced reasoning.

Chain of Custody
A documented process that shows where a material has come from, how it was made, and who handled it—ensuring it was sourced responsibly.

Circularity
The idea that materials and products are designed to be reused, recycled, or repurposed so nothing is wasted.

CIDA (Council for Interior Design Accreditation)
A group that sets standards of quality and competency for interior design education programs.

Cleanability
How easily a surface can be cleaned and kept free from dirt or germs.

Composite Criteria
A set of rules or standards made up of several smaller guidelines used together to rate or evaluate something.

Council for Interior Design Accreditation (CIDA) Standards
Rules created by a professional organization that guide what students in interior design programs should learn and be able to do.

CSI MasterSpec Division 9
A section in the standard construction documentation system that deals specifically with interior finishes and materials.

Dashboard
An online or computerized tool that shows key information, stats, or data in a clear and easy-to-understand format for tracking progress or performance.

Ecolabel
A certification mark placed on products that meet recognized environmental standards for health, resource use, or sustainability.

Embodied Carbon
The total amount of carbon dioxide released to make, transport, and install a building material.

Environmental Product Declaration (EPD)
An official document that states the environmental impact of a product over its whole life cycle.

Evidence-Based
Decisions or actions that are supported by trusted data, tests, or research, not just opinions or guesses.

Facility Guidelines Institute (FGI)
A group that provides standards to help design healthy and safe buildings, especially healthcare and public facilities.

Flame Resistance
A measure of how well a material can prevent or slow the spread of fire.

GREENGUARD
A certification that verifies a product releases low levels of chemicals (low emissions), making indoor air healthier.

Hardness
A property explaining how well a material stands up to scratches, dents, and everyday use without wearing out.

Heatmap
A color-coded visual chart showing how strongly different items or categories score, often using shades from cool to warm colors to represent lower to higher values.

Health Product Declaration (HPD)
A standardized document listing all substances used in a product, including any that are bad for health.

Imperviousness (Water/Moisture Resistance)
A material's ability to block water or moisture from getting through or causing damage.

Ingredient Transparency
Clear labeling that shows every chemical or substance used in a product, letting buyers make safe choices.

KPI (Key Performance Indicator)
A tracked measurement that helps show how well something, like a material or process, meets set goals.

LEED Certification (Leadership in Energy and Environmental Design)
A rating system that evaluates buildings and materials for energy use, water efficiency, and overall environmental impact.

Light Fastness
How well a material can keep its color and appearance when exposed to light, especially sunlight.

Living Product Challenge Standards
A set of rules for products designed to be healthy for people and the planet, promoting positive environmental impact.

Maintainability
How easily and affordably something can be repaired or kept working well over time.

Materiality Resilience Calculator
An Excel spreadsheet tool created for SAMPL that lets users input, rate, and compare building materials based on strength, sustainability, and adaptability.

Optimized/Optimal Resilience Contribution
The highest rated level of material performance, indicating it fully meets standards for durability, safety, and sustainability.

Pie Chart
A circular chart divided into slices, each showing how much a part contributes to the whole.

Post-Consumer Content
Material that has already been used by people and then recycled into new products.

Post-Occupancy Evaluation
A review or study done after a building or space is in use, checking if it meets needs for health, productivity, and comfort.

Regenerative Design
Design strategies that not only reduce harm but actively restore and improve natural systems, such as returning resources to the environment.

Regional Availability
How close a material is produced or sourced to the location where it will be used, with closer generally being better for the environment.

Recycled Content
The share of material in a product that comes from reused or recycled sources.

Recyclability Potential
The likelihood that a material can be processed to make new products at the end of its use, instead of being thrown away.

Resilience Engineering
A scientific field focused on helping systems, buildings, or communities remain strong and recover quickly from challenges or disasters.

Resource Management Standards
Rules that guide the careful and responsible use of natural resources in making products or managing facilities.

Responsiveness
How well a material or finish can adjust to changes in activity, users, or environment within a space.

Scorecard
A table or worksheet used to keep track of how different materials meet performance standards, helping organize comparisons and decisions.

Self-Healing
A feature of some materials that can automatically fix small scratches or damage over time without much help.

Smoke Resistance
The ability of a material to limit or reduce the amount of smoke produced during a fire.

Stakeholders
People or groups who are affected by or have an interest in a building project, like clients, users, developers, or community members.

Strength (Performance Category)
A rating group in SAMPL focusing on how tough, safe, and long-lasting a material is.

Supply Transparency
Clear information about where a product's raw materials come from and how they are processed, shared openly for inspection.

Sustainability (Performance Category)
A rating group in SAMPL that looks at the health, environmental, and ethical impacts of materials throughout their life.

Symbiosis (Performance Category)
A rating group in SAMPL focusing on how well finishes adapt, support occupants, and work in different uses or environments.

Technical Performance Measure (TPM)
A specific trait or property, like fire resistance or recyclability, used to score and compare building materials.

UL (Underwriters Laboratories)
An independent company that tests and certifies products for safety and quality.

Use-Life
The length of time a material can be used before it wears out or needs to be replaced.

WELL Building Standard
A set of guidelines for creating buildings and interiors that help people's health, wellness, and comfort.

APPENDIX

SAMPL-supported Interior Materials and Finishes Syllabus Template

Schedule:

- Weekly class sessions (specify days/times/location as appropriate)

Instructor:

- Name
- Email
- Phone
- Office location
- Office hours (specify days/times)

Course Description:

This course introduces students to advanced strategies for selecting, specifying, and evaluating materials in the built environment. The core emphasis is on the Sustainable Adaptive Material Performance Level (SAMPL) framework—a computational platform that assesses building materials in response to climate and system stressors. Students will source interior surfaces based on environmental context and user needs, specify materials using CSI standards (especially Division 9), communicate the value of material selections to project stakeholders, and evaluate material performance after installation. Through lectures, readings, applied activities, and use of SAMPL dashboards and the Material Bank, students develop competencies in adaptive material evaluation for safer, sustainable built environments.

Educational Goals:

Course goals are derived from Council for Interior Design Accreditation (CIDA) Standards:

1. Source appropriate interior surfaces considering environmental use and user requirements.
2. Specify materials based on CSI standards (emphasis on Division 9).
3. Communicate the value of material selections to project stakeholders.
4. Evaluate material installation performance after occupancy.
5. Demonstrate awareness of sustainable, context-specific, and resilient material frameworks (SAMPL).

Council for Interior Design Accreditation (CIDA) Curriculum Standards Addressed:

- Program identity and curriculum
- Global context: sourcing and specification for geographic, climatic, and social factors
- Human-centered design for user needs and wellbeing
- Design process: methods for evidence-based material selection
- Communication: conveying material decisions/value to stakeholders
- Products and materials: specification, sustainability, lifecycle
- Environmental systems and human wellbeing: impacts on acoustics, air quality, and indoor environmental quality
- Construction: specification formats and Division 9 standards
- Regulations and guidelines: regulatory and sustainability standards (e.g., LEED, WELL)
- Collaboration through team projects for resilient/contextually responsive solutions

Course Format:

- Learning via readings, instructor lectures, guest speakers, student presentations, and hands-on exploration, including performance testing of interior materials
- Assignments and final project aligned with SAMPL principles
- Assessment includes quizzes, evaluation of presentations, SAMPL-aligned assignments, testing exercises, and ongoing progress and completion of the final project
- Course materials and resources made available via learning management system

Recommended Texts:

- Materials and Interior Design (Brown, R., & Farrelly, L. Laurence King Publishing)
- Materiality and Interior Construction (Postell, J., & Gesimondo, N. John Wiley & Sons)
- Godsey, L. (2012). Interior design materials and specifications. A&C Black.
- Interior Materiality (Guler, Kutay. New Prairie Press USA)
- Additional instructor-posted readings/articles relevant to course content

Required Software:

- Microsoft Word or Google Docs
- Microsoft Excel or Google Spreadsheets
- AutoCAD or Revit
- Adobe Creative Suite (Photoshop preferred but optional)

Course Schedule:

Organize modules according to thematic progression tied to SAMPL principles:

Module 1: SAMPL Foundations & Material Safety

- Course introduction, grading, resources, role of SAMPL
- Interior material safety and adaptive capacity

Module 2: Adaptive Material Selection & Contextual Symbiosis

- Basic material knowledge testing
- Flooring types and performance standards
- Wall finish types and performance standards
- Casework and furniture finishes
- Ceiling and millwork types and standards

Module 3: Building Systems, Specifications & Safety

- SAMPL dashboards & Material Bank orientation
- Introduction to CSI Standards & MasterSpec (Division 9)
- Finish recovery testing and standards

Module 4: Resilience, Occupancy & Performance Testing

- Resilient material design project introduction (team project, performance criteria)
- Occupancy classifications & finish considerations
- Material performance testing introduction and workdays

Module 5: Sustainable Materials & Circular Strategies

- Sustainable and regenerative materials principles and strategies
- Visual essay & final project development
- Vendor presentations/material performance testing

Module 6: Communication, Innovation & Professional Practice

- Communicating the value of sustainable design (LEED, WELL)
- Life cycle costing & circular economy
- Regional material sourcing
- Final project workday
- Final project exhibition, desk review, debrief
- Preview of regulatory context and comprehensive review (NCIDQ exam)

Other Referenced Readings:

- Council, U. G. B. (LEED v4.1--Interior Design and Construction)
- Harmon, S. K., & Kennon, K. E. (The codes guidebook for interiors. John Wiley & Sons.)
- ICC Chapter 8 Interior Finishes
- WBDG LCCA
- WELL Materials