

School of Architecture & Planning

Master of Architecture

Student Learning Outcomes

[Also called Student Performance Criteria (SPC) by the National Architectural Accrediting Board or NAAB]

Realm A: Critical Thinking and Representation:

- A.1. **Communication Skills:** Ability to read, write, speak and listen effectively.
- A.2. **Design Thinking Skills:** Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.
- A.3. **Visual Communication Skills:** Ability to use appropriate representational media, such as traditional graphic and digital technology skills, to convey essential formal elements at each stage of the programming and design process.
- A.4. **Technical Documentation:** Ability to make technically clear drawings, write outline specifications, and prepare models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
- A.5. **Investigative Skills:** Ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.
- A.6. **Fundamental Design Skills:** Ability to effectively use basic architectural and environmental principles in design.
- A.7. **Use of Precedents:** Ability to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design projects.
- A.8. **Ordering Systems Skills:** Understanding of the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
- A.9. **Historical Traditions and Global Culture:** Understanding of parallel and divergent canons and traditions of architecture, landscape and urban design

including examples of indigenous, vernacular, local, regional, national settings from the Eastern, Western, Northern, and Southern hemispheres in terms of their climatic, ecological, technological, socioeconomic, public health, and cultural factors.

A.10. **Cultural Diversity:** Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects.

A.11. **Applied Research:** Understanding the role of applied research in determining function, form, and systems and their impact on human conditions and behavior.

Realm B: Integrated Building Practices, Technical Skills and Knowledge:

B.1. **Pre-Design:** Ability to prepare a comprehensive program for an architectural project, such as preparing an assessment of client and user needs, an inventory of space and equipment requirements, an analysis of site conditions (including existing buildings), a review of the relevant laws and standards and assessment of their implications for the project, and a definition of site selection and design assessment criteria.

B.2. **Accessibility:** Ability to design sites, facilities, and systems to provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities.

B.3. **Sustainability:** Ability to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants/users, and reduce the environmental impacts of building construction and operations on future generations through means such as carbon-neutral design, bioclimatic design, and energy efficiency.

B.4. **Site Design:** Ability to respond to site characteristics such as soil, topography, vegetation, and watershed in the development of a project design.

B.5. **Life Safety:** Ability to apply the basic principles of life-safety systems with an emphasis on egress.

B.6. **Comprehensive Design:** Ability to produce a comprehensive architectural project that demonstrates each student's capacity to make design decisions across scales while integrating the following SPC:

- A.2. Design Thinking Skills
- A.4. Technical Documentation
- A.5. Investigative Skills
- A.8. Ordering Systems

- A.9. Historical Traditions and Global Culture
- B.2. Accessibility
- B.3. Sustainability
- B.4. Site Design
- B.5. Life Safety
- B.8. Environmental Systems
- B.9. Structural Systems

B.7 ***Financial Considerations:*** Understanding of the fundamentals of building costs, such as acquisition costs, project financing and funding, financial feasibility, operational costs, and construction estimating with an emphasis on life-cycle cost accounting.

B.8 ***Environmental Systems:*** Understanding the principles of environmental systems' design such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, and acoustics; including the use of appropriate performance assessment tools.

B.9. ***Structural Systems:*** Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.

B.10. ***Building Envelope Systems:*** Understanding of the basic principles involved in the appropriate application of building envelope systems and associated assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

B.11. ***Building Service Systems:*** Understanding of the basic principles and appropriate application and performance of building service systems such as plumbing, electrical, vertical transportation, security, and fire protection systems.

B.12. ***Building Materials and Assemblies:*** Understanding of the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.

Realm C: Leadership and Practice:

C.1. ***Collaboration:*** Ability to work in collaboration with others and in multidisciplinary teams to successfully complete design projects.

C.2. ***Human Behavior:*** Understanding of the relationship between human behavior, the natural environment and the design of the built environment.

- C.3 ***Client Role in Architecture:*** Understanding of the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups, and the public and community domains.
- C.4 ***Project Management:*** Understanding of the methods for competing for commissions, selecting consultants and assembling teams, and recommending project delivery methods.
- C.5 ***Practice Management:*** Understanding of the basic principles of architectural practice management such as financial management and business planning, time management, risk management, mediation and arbitration, and recognizing trends that affect practice.
- C.6 ***Leadership:*** Understanding of the techniques and skills architects use to work collaboratively in the building design and construction process and on environmental, social, and aesthetic issues in their communities.
- C.7 ***Legal Responsibilities:*** Understanding of the architect's responsibility to the public and the client as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, and historic preservation and accessibility laws.
- C.8 ***Ethics and Professional Judgment:*** Understanding of the ethical issues involved in the formation of professional judgment regarding social, political and cultural issues in architectural design and practice.
- C.9 ***Community and Social Responsibility:*** Understanding of the architect's responsibility to work in the public interest, to respect historic resources, and to improve the quality of life for local and global neighbors.