

Annual Key Assessment Findings and Curricular Improvements
School of Architecture and Planning
Undergraduate (B.S.) Program in Architecture

AY2015-2016

Key Assessment Findings

Specialized Accreditation Data

Architectural Accreditation: The National Architectural Accreditation Board (NAAB) reviews the school every three to eight years based on the accreditation report. The most recent site visit, in April 2016, resulted in renewal of full accreditation for the maximum term of eight years. NAAB found 5 conditions met with distinction, 41 conditions met and 9 conditions not met. Of those not met, most relate to our facility. This is an extremely favorable outcome.

Professional Licensure: Professional Licensure requests the completion of the Master of Architecture degree.

Certification: A small number of students opt to take certification exams to become LEED® APs (LEED® Accredited Professionals) or CDTs (Certified Documents Technologists). The former is a program of the United States Green Building Council (USGBC) while the latter is conducted by the Construction Specifications Institute (CSI). Passage rates are quite high for those who take the exams.

Comprehensive Exams

The Comprehensive Building Design Studio (CBDS) and Supplement

The school conducts no comprehensive exams *per se*, but completion of CBDS is required.

In CBDS, students are tested on their mastery of subjects learned in their professional studies through performance designing a real project for a real client. The courses are organized in a way intended to simulate the work environment of architectural practitioners, and therefore comes with professional performance expectations. It functions as a capstone for the accredited program – the four-year B.S.Arch program and the first two years of the M.Arch3 program.

The studio focuses on a rigorous semester-long team project that requires development of urban design, architectural design, construction systems, environmental systems, structural systems, and building envelope for a project with a moderately complex program.

The studio component stresses collaboration among members of each student design team and with outside professional consultants. Client interaction is also stressed. Those role-playing the clients come in to discuss the project at the beginning of the semester and come to the major reviews to give student teams feedback.

The supplement course reviews a broad range of undergraduate material from prerequisite courses. For the first half of the course, a mix of faculty and local practitioners lecture on the various topics. In the second half, the practitioners serve as consultants to the individual student teams. At the end, they return to evaluate individual students through oral exams.

Team Project: The Building Design (Studio: ARPL 402/602)

The project is completed in teams much like an architecture project would be completed in a professional environment. In spring 2012, nineteen teams, totaling one hundred one (101) students participated. Three teams partly met expectations in formal design and research, technical design, and communication.

Individual Project: The Detail Design (Studio: ARPL 402/602)

In spring 2015, fifty-nine (59) students completed the design of a set of construction details. Although the building as a whole is designed in teams, each student is required to design, in detail, one part of the building from foundation to roof, from one column to the next, and from the exterior wall to about ten feet inside the building. This way, students can demonstrate their understanding of construction, structural, and infrastructural systems, of the coordination of those systems, and of building envelope. While most students met the requirements, 22% -25% only partly met the expectations.

Individual Examinations (Supplement: ARPL 423/623)

In spring 2015, sixty-four (64) completed the Comprehensive Oral exams. At the end of the studio, before the final presentation, the CBDS faculty administer the oral defenses, one on one with individual students. They assess how much each student understands the various disciplines involved in the project design, as well as the comprehensive whole. We conducted Architectural, Structural, Mechanical, Electrical, and Plumbing Systems oral defenses this year.

**Table of Results
Student Learning Assessment Rubric
School of Architecture and Planning
Comprehensive Building Design Studio + Supplement**

Individual Assessment	Level						Mean	SD	Total N
	Exceeded Expectations (3pts)		Met Expectations (2pts)		Partly Met Expectations (1pt)				
	N	%	N	%	N	%			
1) Research	21	33%	25	39%	18	28%	2.05	0.05	64
2) Formal design	21	33%	25	39%	18	28%	2.05	0.05	64
3) Technical design	18	28%	30	47%	16	25%	2.03	0.12	64
4) Communication	18	28%	30	47%	16	25%	2.03	0.12	64

Team Assessment	Level						Mean	SD	Total N
	Exceeded Expectations (3pts)		Met Expectations (2pts)		Partly Met Expectations (1pt)				
	N	%	N	%	N	%			

	N	%	N	%	N	%			
1) Research	6	38%	7	44%	3	19%	2.19	0.13	16
2) Formal design									
3) Technical design									
4) Communication									

- Notes:
- 1) The mean is the average of all scores across the levels within the trait.
 - 2) The standard deviation (SD) is a measure of the variability of the data set, indicating how "spread out" these data are from the mean value.
 - 3) The total number of projects assessed was 19; the total number of individuals assessed was 98 as one of the original 99 withdrew.

Curricular Improvements

Recent improvements to the CBDS program

CBDS teams of four: Students are now allowed to choose team members. We have found that giving students the responsibility of choosing their team members wisely eliminates in-team squabbles and allows teams to work more efficiently.

Future planned improvements:

Curricular changes: We are currently in the process of integrating all senior architecture coursework with the CBDS project. This allows students to implement learned skills and knowledge immediately into a studio project.

**Student Learning Assessment Rubrics
School of Architecture and Planning
B.S. Program in Architecture**

Rubrics for the Comprehensive Building Design Studio and Supplement

Individual Assessment: Detail Design

Trait	Exceeded Expectations (3 pts)	Fully Met Expectations (2 pts)	Partly Met Expectations (1 pt)
1/4" Scale Model of Wall Section and Building Bay	Student's model has all major and many minor components; shows good coordination and understanding of architectural, structural and mechanical systems from parapet to foundation. Design is well developed and related to the general design concept and is customized beyond details found in reference books, with good attention to detail and modulation of section, and is inventive and well-proportioned.	Student model has all major components, shows basic coordination and understanding of architectural, structural and mechanical systems from parapet to foundation. Design is developed beyond what elevations show or what is found in reference books, with some attention to detail and modulation of section, and shows some creative thinking.	Student model is missing critical components; shows only partial coordination and an unclear understanding of architectural, structural and mechanical systems from parapet to foundation. Design shows little development beyond what elevations show or what can be found in reference books, pays little attention to detail or modulation of section, and shows little creative thinking.
3-Dimensional Assembly Drawing of Wall System and Building Bay	Student's 3-D animation clearly and inventively illustrates the assembly of the building, how the structure is constructed from the foundation up to the roof, and how the skin is composed and attached. Clearly coordinates the MEP systems with the structure and envelope.	Student's 3-D animation basically illustrates the assembly of the building, how the structure is constructed from the foundation up to the roof, and how the skin is composed and attached. Basically coordinates the MEP systems with the structure and envelope.	Student's 3-D animation poorly illustrates the assembly of the building, is confused regarding how the structure is constructed from the foundation up to the roof, and how the skin is composed and attached. Indicates confusion regarding coordination of the MEP systems with the structure and envelope.
Wall and Building Section with Coordination	Student section is graphically compelling, and shows a thorough understanding of components, joints, and assemblies. Notes and dimensions are thorough, logical, accurate, and clear. Enlarged details identify all materials with no major errors in assembly configuration. Design matches and builds upon the design intent of the building as a whole. Details include at least the wall condition at the roof edge, at a head and sill, at an intermediate floor, at grade, and at footing.	Student's section is graphically clear, shows basic understanding of components, joints, and assemblies. Notes and accurate dimensions are included for most elements. Enlarged details identify materials with few errors in assembly configuration, and match the design intent of the building as a whole. Details include at least the wall condition at the roof edge, at an intermediate floor, at an opening, and at grade.	Student's section shows only partial understanding of components, joints and assemblies, or has missing and/or inaccurate notes and dimensions for some major elements. Enlarged details identify materials and assembly configuration, but relate little to the design intent of the building as a whole. Details include at least the wall condition at the roof edge, at an intermediate floor, and at grade.

**Student Learning Assessment Rubrics
School of Architecture and Planning
B.S. Program in Architecture**

Rubrics for the Comprehensive Building Design Studio and Supplement

Individual Assessment: Examinations

Trait	Exceeded Expectations (3 pts)	Fully Met Expectations (2 pts)	Partly Met Expectations (1 pt)
Structural Systems: Oral Defense	Student thoroughly understands the principles of withstanding gravity and lateral forces and is insightful regarding the team's selection of its chosen structural system.	Student can explain the basic principles of withstanding gravity and lateral forces and understands the team's reasons for choosing its structural system.	Student is confused regarding the principles of withstanding gravity and lateral forces and has difficulty explaining why the team chose its structural system.
Mechanical, Electrical, and Plumbing Systems: Oral Defense	Student thoroughly understands the basic principles and appropriate application and performance of environmental systems for acoustics, lighting, climate modification, and energy use, integrated with the building envelope.	Student can explain the basic principles and appropriate application and performance of environmental systems for acoustics, lighting, climate modification, and energy use, integrated with the building envelope.	Student has difficulty explaining the basic principles and appropriate application and performance of environmental systems for acoustics, lighting, climate modification, and energy use, integrated with the building envelope.
Written Exam	Student explains the building design and urban design concept well and thoroughly understands how the concept follows through to the project design, how the site and building can accommodate individuals with varying physical abilities, how the principles of sustainability are used in making architecture decisions, how the basic principles of life-safety systems are applied (with an emphasis on egress), the basic principles and appropriate application and performance of building envelope materials and assemblies, how his project's exterior wall assembly works, and how the lighting strategy relates to the overall concept and to specific needs in specific areas.	Student explains the building design and urban design concept and understands how the concept follows through to the project design, how the site and building can accommodate individuals with varying physical abilities, how the principles of sustainability are used in making architecture decisions, how the basic principles of life-safety systems are applied (with an emphasis on egress), the basic principles and appropriate application and performance of building envelope materials and assemblies, how his project's exterior wall assembly works, and how the lighting strategy relates to the overall concept and to specific needs in specific areas.	Student cannot explain the building design and urban design concept and does not understand how the concept follows through to the project design, how the site and building can accommodate individuals with varying physical abilities, how the principles of sustainability are used in making architecture decisions, how the basic principles of life-safety systems are applied (with an emphasis on egress), the basic principles and appropriate application and performance of building envelope materials and assemblies, how his project's exterior wall assembly works, or how the lighting strategy relates to the overall concept and to specific needs in specific areas.