Template
Academic Program
Plan for Assessment of Student Learning Outcomes
The University of New Mexico

A. College, Department and Date

1. College: *School of Architecture and Planning*
2. Department: *Architecture*
3. Date: *Sept 27, 2010*

B. Academic Program of Study*

M. Arch

C. Contact Person(s) for the Assessment Plan

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D. Broad Program Goals & Measurable Student Learning Outcomes

Introduction Conditions Appendix

The Masters of Architecture is a professional program accredited by the National Architecture Accreditation Board (NAAB). An accredited degree is a requirement for licensure in architecture in almost all states.

There are two "paths" to the M. Arch – a 2yr path for students with a Bachelors of Arts in Architecture (BAA), and a 3.5yr path for those with other bachelors degrees. When NAAB accredits the M. Arch degree they also review student learning objectives in the BAA program as these support the 2yr M. Arch path.

During a NAAB accreditation review, professional architecture programs must provide student projects and exercises to show that students have a set of knowledge and skills. NAAB has specified a set of student performance criteria (listed below) that all students are expected to gain understanding of or become skilled at. For the 3.5 yr program for the M. Arch. all of the criteria are addressed within the masters. For the 2.0 yr. program of the M.Arch some of the criteria are addressed in the M.Arch, and some in the B.A.A.. Students who enter the 2 yr program from other B.A.A. programs may be required to take additional courses or may have courses waived.

The attached "summary matrix" shows in which courses we make a summary assessment of each of the criteria. This chart also illustrates which criteria are assessed in the B.A.A. and which in the 2 yr M.Arch.

* Academic Program of Study is defined as an approved course of study leading to a certificate or degree reflected on a UNM transcript. A graduate-level program of study typically includes a capstone experience (e.g. thesis, dissertation, professional paper or project, comprehensive exam, etc.).

Student Performance Criteria
Following are the student performance criteria as adopted by NAAB.
The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria set out below. The knowledge and skills are the minimum for meeting the demands of an internship leading to registration for practice. The school must provide evidence that its graduates have satisfied each criterion through required coursework. If credits are granted for courses taken at other institutions or online, evidence must be provided that the courses are comparable to those offered in the
accredited degree program.

The criteria encompass two levels of accomplishment:
Understanding—The capacity to classify, compare, summarize, explain and/or interpret information.
Ability—Proficiency in using specific information to accomplish a task, correctly selecting the appropriate information, and accurately applying it to the solution of a specific problem, while also distinguishing the effects of its implementation.

The NAAB establishes performance criteria to help accredited degree programs prepare students for the profession while encouraging educational practices suited to the individual degree program. In addition to assessing whether student performance meets the professional criteria, the visiting team will assess performance in relation to the school's stated curricular goals and content. While the NAAB stipulates the student performance criteria that must be met, it specifies neither the educational format nor the form of student work that may serve as evidence of having met these criteria. Programs are encouraged to develop unique learning and teaching strategies, methods, and materials to satisfy these criteria. The NAAB encourages innovative methods for satisfying the criteria, provided the school has a formal evaluation process for assessing student achievement of these criteria and documenting the results.

For the purpose of accreditation, graduating students must demonstrate understanding or ability as defined below in the Student Performance Criteria (SPC):

Student Performance Criteria: The SPC are organized into realms to more easily understand the relationships between individual criteria.

Realm A: Critical Thinking and Representation:
Architects must have the ability to build abstract relationships and understand the impact of ideas based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts. This ability includes facility with the wider range of media used to think about architecture including writing, investigative skills, speaking, drawing and model making. Students' learning aspirations include:

- Being broadly educated.
- Valuing lifelong inquisitiveness.
- Communicating graphically in a range of media.
- Recognizing the assessment of evidence.
- Comprehending people, place, and context.
- Recognizing the disparate needs of client, community, and society

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 designprocess.

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:
Architects are called upon to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to their services. Additionally they must appreciate their role in the implementation of design decisions, and the impact of such decisions on the environment. Students learning aspirations include:

- Creating building designs with well-integrated systems.
- Comprehending constructability.
- Incorporating life safety systems.
- Integrating accessibility.
- Applying principles of sustainable design.

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:
Architects need to manage, advocate, and act legally, ethically and critically for the good of the client, society and the public. This includes collaboration, business, and leadership skills. Student learning aspirations include:

- Knowing societal and professional responsibilities.
- Comprehending the business of building.
- Collaborating and negotiating with clients and consultants in the design process.
- Discerning the diverse roles of architects and those in related disciplines.
- Integrating community service into the practice of architecture.
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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.

See attached matrix of NAAB criteria and courses.

E. Assessment of Student Learning Three-Year Plan

All programs are expected to measure some outcomes annually and to measure all priority program outcomes at least once over two consecutive three-year review cycles. Describe below the plan for the next three years of assessment of program-level student learning outcomes.

1. **Student Learning Outcomes**
   [Insert at least 2-5 priority learning outcomes that will be assessed by the unit over the next three years. Each unit will select which of its learning outcomes to assess.]

University of New Mexico Student Learning Goals				
Program SLOs	Knowledge	Skills	Responsibility	Program SLO is conceptually different from university goals.
[alpha.#] [SLO text] *[e.g., A.1 The student will be able to communicate effectively in writing.]*				
Critical Thinking and Representation	X	X		
Integrated Bldg Practices	X	X		
Leadership and Practice	X	X	X	

2. **How will learning outcomes be assessed? And 3. When will learning outcomes be assessed? When and in what forum will the results of the assessment be discussed?**

   The M.Arch is assessed through a self-assessment report and a site visit on a 6 year cycle by NAAB. Additionally the program must prepare an annual report for NAAB on specific issues identified during the assessment. All student performance criteria are assessed on the 6 yr cycle and any may be required to be assessed on the annual cycle.

   During a site visit, student projects which show evidence of learning for each student performance criteria are collected and reviewed by the faculty, then presented to the NAAB site visit committee (composed of professionals, faculty from other schools, a student from another school, and observers). NAAB requires that faculty show at least three projects for

each learning criterion in each required course and that one project received a "high pass" and another a "low pass" according to the grades given by the faculty. Additionally, if there are multiple sections of a course then examples must represent the range of work in all the sections. Within these criteria, each faculty member uses their judgment to select projects. The NAAB review team can ask for additional evidence. The NAAB team then gives a "met" or "not met" and comments for each criterion. They can also note areas of concern and areas exceptionally well met. All "not met" and areas of concern must be reported on in the following annual reports, and discussed in the following accreditation visit.

Between site visits, the director works with faculty individually, in committees, and as a whole to review student learning, the curriculum, and the learning culture (a document required by NAAB). This information is used to develop the annual report.

The self-assessment and annual report are public record. They are discussed and developed by the faculty and the director of the program in committee meetings, and faculty meetings.

Additionally, all graduate students are required to develop a portfolio of their academic work and present it to a committee of the faculty prior to entering their final year. This summative review provides an opportunity for the student and faculty to discuss the student's goals, potential electives or other projects, and any remedial work.

4. What is the unit's process to analyze/interpret assessment data and use results to improve student learning?

This occurs on multiple levels (a) each faculty member reviews their courses, (b) each semester groups of faculty organized by year-level coordinators reflect on learning outcomes and revises assignments, projects and syllabi, (c) the curriculum committee and the faculty as a whole modify the curricula and practices on a continuing basis, (d) the director writes an annual report in consultation with the faculty, and (e) the faculty as a whole respond to NAAB criteria and evaluations every 6 years (supplemented by annual reports), and (e) the Director and others help shape NAAB criteria and processes every 5-10 years during the NAAB "validation" cycle.

B.A. Arch M.A. Arch
Learning Outcomes
Curriculum Map

DRAFT 9/20/10 MCC

Course	Realm A: Crit. Thinking and Represent											Realm B: Intergrated Building Practices											Realm C: Leadership & Practice								
	Communication	Design thinking	Visual Comm.	Tech. Document	Investigative	Fundamental Design	Precedents	Ordering Systems	Hist. Trad. & G. Culture	Cultural Diversity	Applied Research	Pre-Design	Accessibility	Sustainability	Site Design	Life Safety	Comprehensive	Financial	Environ. Systems	Structural Systems	Building Envelop	Building Service	Materials	Collaboration	Human Behavior	Client Role	Project Management	Practice Management	Leadership	Legal	Ethics	Responsibility
Undergrad																															
101 Design Fund						X	X	X																							
111 Graphics			X																												
121 Intro		X	X																												
201 Site Studio	X	X	X												E																X
202 Urban Studio	X	X	X												X																X
211 Comm			X																												
221 Arch Context									X	X																					
241 Sustain 1														X																	
301 Private Realm	X	X	X			E	E	E																							
302 Public Realm	X	X	X			E	E	E																							
311 Comm 2	X			E																			E								
321 World Arch 1									X	X																					
322 World Arch 2									E	E																					
331 Construction																							X								
332 Structures 1																				X											
342 Hum. Fac/ Prog												E	E			E								E							
401 Civic Studio	E	E	E																					E							
402 Topics Studio	E	E	E																												
431 Structures 2																				E											
432 Building Sys														E		E			E			E									
441 Sust II														E					E												
442 Policy/Culture										E								E						E					E		E	E
451 Research											E																					
452 Pract/Theory																										E			E		E	E
2 Year																															
601 Techtonics Studio	X	E	X	E	E			E	E				E	E	E	E	E		E	E											
602 Topics Studio	X	X	X							E																					
604 Research Studio	X	X	X		E		E				E	E	E	E	E	E									E						
605 M. Studio	E	E	E																									E			
522 Modern									E	E																		X			
631 Systems 1																			E		E	E	E								
632 Systems 2																			X		X	X	X								
551 Research											E													E							
651 Prof Pract.																		E								E	E	E	E	E	E	E

E = Place where we collect evidence for NAAB

X= SLO is substantially addressed but we do not present evidence from here

B.A. Arch M.A. Arch
Learning Outcomes
Curriculum Map

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Course	Realm A: Crit. Thinking and Represent											Realm B: Intergrated Building Practices											Realm C: Leadership & Practice								
	Communication	Design thinking	Visual Comm.	Tech. Document	Investigative	Fundamental Design	Precedents	Ordering Systems	Hist. Trad. & G. Culture	Cultural Diversity	Applied Research	Pre-Design	Accessibility	Sustainability	Site Design	Life Safety	Comprehensive	Financial	Environ. Systems	Structural Systems	Building Envelop	Building Service	Materials	Collaboration	Human Behavior	Client Role	Project Management	Practice Management	Leadership	Legal	Ethics	Responsibility
3.5 Year																															
503 Site/Private	X	X	X			E	X	X					X		X																
504 Urban/ Public	X	X	X			E	X	E							X				X	X				E							
505 Civic studio	X	E	X	E	E			E					E	E	E	E	E		E	E											
602 Topics Studio	X	X	X																												
603 Global Studio	X	X	X						X	E																					
604 Research Studio	X	X	X		E		E				E	E	E	E	E	E									E						
605 M. Studio	E	E	E																									E			
515 Digital Rep			E																												
516 3D modeling			X																												
517 Text	E																														
521 Arch. Analysis	X	X	X				X																								
522 Mod/Cont									X	X																					
523 World Arch 1									X	X																					
524 World Arch 2									E	E																					
531 Constuction				E																			E								
532 Struct 1																				X											
533 Struct 2																				E											
534 Bldg Sys														E		E			E			E									
631 Systems 1																			E		E	E	E								
632 Systems 2																			X		X	X	X								
541 Human Factors												E	E			E									E						
542 Sust 2														E																	
LA 566 Site															E																
Global Seminar										E																					
551 Research											E													E							
651 Prof Pract.																		E								E	E	E	E	E	E	E

E = Place where we collect evidence for NAAB

X= SLO is substantially addressed but we do not collect evidence here