Montana State University School of Architecture Assessment Plan

May 31, 2013

The School of Architecture has developed the following Program Learning Outcomes Assessment Plan utilizing the procedure outlined by the Office of the Provost dated October 24, 2011.

Step 1: Program Learning Outcomes

The School of Architecture is accredited by the National Architectural Accrediting Board which provides a series of conditions for accreditation—the most recent conditions were published in 2009. A part of these conditions are 32 Student Performance Criteria (SPC) which are grouped into three realms that include a series of student learning aspirations. The School of Architecture has developed its Program Learning Objectives to align with and include the student learning aspirations from the 2009 NAAB Conditions for Accreditation. We have identified 9 Program Learning Outcomes organized under the 3 realms established by NAAB:

Realm A: Critical Thinking and Representation:
- Students will demonstrate fundamental design skills and communicate graphically in a range of media.
- Students will recognize the assessment of evidence.
- Students will comprehend people, place, and context and will recognize the disparate needs of client, community and society.

Realm B: Integrated Building Practices, Technical Skills and Knowledge:
- Students will create building designs with well-integrated systems and will comprehend constructability.
- Students will incorporate life safety systems and integrate accessibility in building designs
- Students will apply principles of sustainable design.

Realm C: Leadership and Practice:
- Students will know societal and professional responsibilities and comprehend the business of building.
- Students will collaborate and comprehend negotiating with clients and consultants in the design process and will discern the diverse roles of architects and those in related disciplines.
- Students will integrate community service into the practice of architecture.

Alignment of Program Learning Outcome with Student Performance Criteria

To assist with the alignment of the Program Learning Outcomes with the NAAB Student Performance Criteria, we have listed the appropriate NAAB Student Performance Criteria beneath each Program Learning Outcome. This expanded list will assist the School in coordinating the assessment of Program Learning Outcomes with the assessment of Student Performance Criteria during our NAAB site visit (scheduled for 2014).

Realm A: Critical Thinking and Representation:
- Students will demonstrate fundamental design skills and will communicate graphically in a range of media.
  - A. 1. Communication Skills
  - A. 2. Design Thinking Skills
  - A. 3. Visual Communication Skills
  - A. 4. Technical Documentation
  - A. 6. Fundamental Design Skills
  - A. 8. Ordering Systems Skills

- Students will recognize the assessment of evidence.
  - A. 5. Investigative Skills
  - A. 7. Use of Precedents
  - A. 11. Applied Research
- Students will comprehend people, place, and context and will recognize the disparate needs of client, community, and society.
  - A. 7. Use of Precedents
  - A. 9. Historical Traditions and Global Culture
  - A. 10. Cultural Diversity

Realm B: Integrated Building Practices, Technical Skills and Knowledge:
- Students will create building designs with well-integrated systems and comprehend constructability.
  - B. 1. Pre-Design
  - B. 4. Site Design
  - B. 6. Comprehensive Design
  - B. 7 Financial Considerations
  - B. 8 Environmental Systems:
  - B. 9. Structural Systems
  - B. 10. Building Envelope Systems
  - B. 11. Building Service Systems
  - B. 12. Building Materials and Assemblies:

- Students will incorporate life safety systems and integrate accessibility in building designs
  - B. 2. Accessibility
  - B. 5. Life Safety
  - B. 6. Comprehensive Design:
- Students will apply principles of sustainable design.
  - B. 3. Sustainability
  - B. 6. Comprehensive Design:

Realm C: Leadership and Practice:
- Students will know societal and professional responsibilities and comprehend the business of building.
  - C. 2. Human Behavior:
  - C. 3. Client Role in Architecture
  - C. 4. Project Management
  - C. 5. Practice Management
  - C. 6. Leadership
  - C. 7. Legal Responsibilities
  - C. 8. Ethics and Professional Judgment:
- Students will collaborate and comprehend negotiating with clients and consultants in the design process and discern the diverse roles of architects and those in related disciplines.
  - C. 1. Collaboration
  - C. 3. Client Role in Architecture:
  - C. 4. Project Management
  - C. 6. Leadership
  - C. 7. Legal Responsibilities
- Students will integrate community service into the practice of architecture.
  - C.9. Community and Social Responsibility

Step 2: Determine Where Program Learning Outcomes are Addressed in Our Curriculum

Since Student Performance Criteria are aligned with the <u>Program</u> Learning Outcomes we identified which courses from the NAAB SPC matrix address each of the <u>Program</u> Learning Outcomes. The chart below identifies where the <u>Program</u> Learning Outcomes occur in our curriculum and are aligned with the NAAB Student Performance Criteria demonstrated by each course.

2009 NAAB Student Performance Criteria and MSU School of Architecture Progam Learning Outcomes — Updated 5/31/2013

Step 2 — Program Learning Objectives, Montana State University Required Courses

Course	Realm A: Critical Thinking and Representation — Students will demonstrate fundamental design skills and communicate graphically in a range of media	Students will recognize the assessment of evidence	Students will comprehend people, place and context and will recognize the disparate needs of client, community and society	Realm B: Integrated Building Practices, Technical Skills and Knowledge — Students will create building designs with well-integrated systems and will comprehend constructability	Students will incorporate life safety systems and integrate accessibility into building designs	Students will apply principles of sustainable design	Realm C: Leadership and Practice — Students will know societal and professional responsibilities and will comprehend constructability	Students will collaborate and comprehend negotiating with clients and consultants in the design process and discern the diverse roles of architects and those in related disciplines	Students will integrate community service into the practice of architecture	Course
ARCH 121IA Intro to Design			A.9				C.2			ARCH 121IA Intro to Design
ARCH 151RA Design Fundamentals I	A.8									ARCH 151RA Design Fundamentals I
ARCH 152 Design Fundamentals II	A.2									ARCH 152 Design Fundamentals II
ARCH 241 Building Construction I				B.12			C.1			ARCH 241 Building Construction I
ARCH 243 Arch Structures I				B.9						ARCH 243 Arch Structures I
ARCH 244 Arch Structures II				B.9						ARCH 244 Arch Structures II
ARCH 253 Architectural Design I	A.6			B.4						ARCH 253 Architectural Design I
ARCH 261 Architectural Graphics I	A.3									ARCH 261 Architectural Graphics I
ARCH 262 Architectural Graphics II	A.3									ARCH 262 Architectural Graphics II
ARCH 313 Professional Practice				B.7			C.3,4,5,6,7	C.3,4,7		ARCH 313 Professional Practice
ARCH 322IA World Architecture I			A.9,10				C.2			ARCH 322IA World Architecture I
ARCH 323IA World Architecture II							C.2			ARCH 323IA World Architecture II
ARCH 331 Environmental Controls I				B.8						ARCH 331 Environmental Controls I
ARCH 331 Environmental Controls II				B.10						ARCH 331 Environmental Controls II
ARCH 340 Building Construction II	A.4									ARCH 340 Building Construction II
ARCH 354 Architectural Design II		A.7	A.7		B.2, 5					ARCH 354 Architectural Design II
ARCH 355 Architectural Design III		A.5		B.1			C.8		C.9	ARCH 355 Architectural Design III
ARCH 363 Architectural Graphics III	A.3									ARCH 363 Architectural Graphics III
ARCH 456 Architectural Design IV	A.1, 2					B.3				ARCH 456 Architectural Design IV
ARCH 557 Architectural Building Studio										ARCH 557 Architectural Building Studio
ARCH 551 Advanced Architectural Studio	A.11									ARCH 551 Advanced Architectural Studio
ARCH 558 Comprehensive Design Studio	A.1			B.6	B.6	B.6				ARCH 558 Comprehensive Design Studio

Step 3: Decide Where you can Gather Evidence of Student Performance

All of the Student Performance Criteria are assessed at a level of Understanding or Ability. We made the assumption that 'Understanding' would be equivalent to 'Developing' (D) and 'Ability' would be equivalent to 'Mastery' (M). As such we will be utilizing assignments from each of the courses marked with a Student Performance Criteria to assess the program learning outcomes.

2009 NAAB Student Performance Criteria and MSU School of Architecture Program Learning Outcomes — Updated 5/31/2013

Step 3 — Program Learning Objectives, Montana State University Required Courses

Course	Realm A: Critical Thinking and Representation — Students will demonstrate fundamental design skills and communicate graphically in a range of media	Students will recognize the assessment of evidence	Students will comprehend people, place and context and will recognize the disparate needs of client, community and society	Realm B: Integrated Building Practices, Technical Skills and Knowledge — Students will create building designs with well-integrated systems and will comprehend constructability	Students will incorporate life safety systems and integrate accessibility into building designs	Students will apply principles of sustainable design	Realm C: Leadership and Practice — Students will know societal and professional responsibilities and will comprehend constructability	Students will collaborate and comprehend negotiating with clients and consultants in the design process and discern the diverse roles of architects and those in related disciplines	Students will integrate community service into the practice of architecture
ARCH 121IA Intro to Design			D				D		
ARCH 151RA Design Fundamentals I	D								
ARCH 152 Design Fundamentals II	M								
ARCH 241 Building Construction I				D			M		
ARCH 243 Arch Structures I				D					
ARCH 244 Arch Structures II				D					
ARCH 253 Architectural Design I	M			M					
ARCH 261 Architectural Graphics I	M								
ARCH 262 Architectural Graphics II	M								
ARCH 313 Professional Practice				D			D	D	
ARCH 322IA World Architecture I		D					D		
ARCH 323IA World Architecture II							D		
ARCH 331 Environmental Controls I				D					
ARCH 331 Environmental Controls II				D					
ARCH 340 Building Construction II	M								
ARCH 354 Architectural Design II		M	M	M					
ARCH 355 Architectural Design III		M		M			D		D
ARCH 363 Architectural Graphics III	M								
ARCH 456 Architectural Design IV	M					M			
ARCH 557 Architectural Building Studio									
ARCH 551 Advanced Architectural Studio	D								
ARCH 558 Comprehensive Design Studio	M			M	M	M			

Understanding = Developing (D); Ability = Mastery (M)

Our courses can be grouped into the following categories and the types of assignments that will be assessed are listed beneath each course category:

- **ARCH X1X** course rubrics are assigned to professional practice courses
  - Selected questions from mid-term and final examination (both essay and multiple choice) will be identified and assessed

- **ARCH X2X** course rubrics are assigned to architectural history and theory courses
  - Selected questions from mid-term and final examination (both essay and multiple choice) will be identified and assessed

- **ARCH X3X** course rubrics are assigned to environmental controls system courses
  - Selected questions from mid-term and final examination will be identified and assessed

- **ARCH X4X** course rubrics are assigned to building structures and building construction courses
  - Selected questions from mid-term and final examination/project will be identified and assessed

- **ARCH X5X** course rubrics are assigned to architectural design studio courses
  - Portfolio submissions for second year admission to assess ARCH 151 and 152
  - Portfolio submissions for graduate admission to assess ARCH 253, 354, 355, and 456

- **ARCH X6X** course rubrics are assigned to architectural graphics courses
  - Portfolio submissions for graduate admissions to assess ARCH 261, 262 and 363

We will work with the faculty of those courses to identify the questions that will be an effective way of measuring this. We have developed an initial rubric scoring sheet for the second year admissions and graduate admissions portfolio review, which has been in use for the last two academic years. In addition, an initial assessment rubric and identification of questions for ARCH 323IA was developed by Assistant Professor David Fortin.

Step 4: Set an Expected Performance Threshold for each Outcome

In the upcoming 2014 National Architectural Accrediting Board site visit, the visiting team will be assessing each of our courses relative to the Student Performance Criteria. NAAB will use a rating of 'Criteria Not Met', 'Criteria Met' and 'Criteria Well Met'. The standard of 'Criteria Met' is the minimum expected performance established by NAAB for each Student Performance Criteria.

For our program learning outcomes, the School has established the following standards for the review of course assignments, examination questions or portfolios: 'Does Not Demonstrate Ability', 'Demonstrates Ability', 'Demonstrates Excellence'. The School agreed to a threshold of at least 80% of students will be rated as "Demonstrates Ability" or higher in every category of the scoring rubric.

Step 5a Create a Schedule for Assessing each Outcome

Following is a chart that identities when each Program Learning Outcome is to be assessed. It is intended for this to happen on a three-year cycle leading to the following schedule of assessment.

MSU School of Architecture Assessment Process — Updated 5/31/2013

Step 5A — Program Learning Objectives, Montana State University Required Courses Asessment Schedule

	Realm A: Critical Thinking and Representation			Realm B: Integrated Building Practices, Technical Skills and Knowledge				Realm C: Leadership and Practice			Program Learning Objectives Assesment Schedule
	Students will demonstrate fundamental design skills an communicate graphically in a range of media	Students will recognize the assessment of evidence	Students will comprehed people, place and context and will recognize the disparate needs of client, community and society	Students will create building designs with well-integrated systems and will comprehend constructability	Students will incorporate life safety systems and integrate accessibility into building designs	Students will apply principles of sustainable design		Students will know societa and professional responsibilities and will comprehend constructability	Students will collaborate and comprehend negotiating with clients and consultants in the design process and discern the diverse roles of architects and those in related disciplines	Students will integrate community service into the practice of architecture	
2012-2013	X			x							2012-2013 (undergraduate X5X course rubrics)
2013-2014			X					x	x		2013-2014 (X1X, X2X, X6x course rubrics)
2014-2015		X			x	x				x	2014-2015 (X3X, X4X course rubrics)
2015-2016	X			x							2015-2016 (X5X course rubrics)
2016-2017			X					x	x		2016-2017 (X1X, X2X, X6x course rubrics)
2017-2018		X			x	x				x	2017-2018 (X3X, X4X course rubrics)

Step 5b Create a Schedule for Reviewing Assessment Plan Elements.

Each component of the assessment plan will be reviewed at the start of and revised as appropriate at the start of each three-year cycle of the program learning assessment outcomes. The next cycle will begin in Fall 2015. This review will take place at the start of Fall Semester of that academic year (the next three-year cycle would begin in Fall 2018). The chart below shows the review schedule for reviewing assessment plan elements.

MSU School of Architecture Assessment Process   Updated 5/31/2013

Step 5b — Assessment Plan Elements

Program Learning Objectives — Montana State University — Assessment Plan Elements

	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	
Outcomes	X			X			Outcomes
Rubrics		X			X		Rubrics
Matrix			X			X	Matrix
Schedule			X			X	Schedule

Step 5c Create Schedule for Reviewing the Courses in the Curriculum/Outcomes Matrix

The chart below shows the review schedule for reviewing the courses within the curriculum.

MSU School of Architecture Assessment Process — Updated 5/31/2013

Step 5c — Schedule of Course Reviews

Program Learning Objectives — Montana State University — Schedule of Course Review

Course	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Course
ARCH 121IA Intro to Design		X			X		ARCH 121IA Intro to Design
ARCH 151RA Design Fundamentals I	X			X			ARCH 151RA Design Fundamentals I
ARCH 152 Design Fundamentals II	X			X			ARCH 152 Design Fundamentals II
ARCH 241 Building Construction I			X			X	ARCH 241 Building Construction I
ARCH 243 Arch Structures I			X			X	ARCH 243 Arch Structures I
ARCH 244 Arch Structures II			X			X	ARCH 244 Arch Structures II
ARCH 253 Architectural Design I	X			X			ARCH 253 Architectural Design I
ARCH 261 Architectural Graphics I		X			X		ARCH 261 Architectural Graphics I
ARCH 262 Architectural Graphics II		X			X		ARCH 262 Architectural Graphics II
ARCH 313 Professional Practice		X			X		ARCH 313 Professional Practice
ARCH 322IA World Architecture I		X			X		ARCH 322IA World Architecture I
ARCH 323IA World Architecture II		X			X		ARCH 323IA World Architecture II
ARCH 331 Environmental Controls I			X			X	ARCH 331 Environmental Controls I
ARCH 331 Environmental Controls II			X			X	ARCH 331 Environmental Controls II
ARCH 340 Building Construction II			X			X	ARCH 340 Building Construction II
ARCH 354 Architectural Design II	X			X			ARCH 354 Architectural Design II
ARCH 355 Architectural Design III	X			X			ARCH 355 Architectural Design III
ARCH 363 Architectural Graphics III		X			X		ARCH 363 Architectural Graphics III
ARCH 456 Architectural Design IV	X			X			ARCH 456 Architectural Design IV
ARCH 557 Architectural Building Studio	X			X			ARCH 557 Architectural Building Studio
ARCH 551 Advanced Architectural Studio	X			X			ARCH 551 Advanced Architectural Studio
ARCH 558 Comprehensive Design Studio	X			X			ARCH 558 Comprehensive Design Studio

Step 6 Process for Assessing the Data

1. Projects or assignments are collected from identified courses.
2. Random samples of these collected assignments are scored by a minimum of two faculty members using the prepared scoring rubrics. Faculty will not score assignments from their own courses.
3. The assessment coordinator tabulates the scores. Areas where the acceptable performance threshold has not been met will be highlighted.
4. The scores are presented to the faculty for assessment.
5. The faculty will review the assessment results, and decide how to respond.
    a. If an acceptable performance threshold has not been met, a faculty response is required and this response may consist of
        i. Gather additional data from a larger sample to confirm or revise assessment results
        ii. Gather data in the following year
        iii. Refute the result
        iv. Change an aspect of the curriculum to address the problem.
        v. Change the acceptable performance threshold
        vi. Choose a different assignment to assess the outcome.
    b. Faculty can respond to assessment results even if the acceptable performance threshold has been met.
    c. If performances thresholds are being met, faculty do not have to make changes.
6. A summary of the year's assessment activities and faculty decisions are reported to the Provost's Office in the School of Architecture's Annual Assessment Activities report.

Step 7 Submit your Assessment Plan

Assessment plan and annual reports will be submitted to the Provost's Office (Ron Larson and copy Diane Heck)