School of Architecture - Montana State University

Bachelor of Arts in Environmental Design

Proposed Curriculum Changes

January 16, 2013

Proposed Change
Increase the credits required for a Bachelor of Arts in Environmental Design undergraduate degree from 120 credits to 126 credits.

Reason for Change
To meet the new minimum credit requirements mandated by the National Architectural Accrediting Board (NAAB). The minimum credit requirement must be in place by January 1, 2015.

Timeframe of Change
This proposed change would take place beginning Fall 2014, coinciding with the start of the 2014-16 Undergraduate Catalog

Background and Explanation
The National Architectural Accrediting Board (NAAB) is the sole agency responsible for accrediting architecture programs throughout the United States. Each architecture program must meet the 2009 Conditions for Accreditation, which went into effect in 2010, in order to maintain their status as an accredited architecture program. There are two primary parts to the 2009 Conditions that include:

- Part One: Institutional Support and Commitment to Continuous Improvement
- Part Two: Education Outcomes and Curriculum

Section 2 Curricular Framework, which is contained under part Two of the 2009 Conditions, contains the following requirement for NAAB accreditation as follows:

“The number of credit hours for each degree is specified below. Every existing accredited program must conform to the following minimum credit hour requirements by January 1, 2015.

- Master of Architecture. Accredited degree programs awarding the M. Arch. Degree must require a minimum of 168 semester credit hours; or the quarter-hour equivalent, of which at least 30 semester credit hours; or the quarter-hour equivalent, must be at the graduate level, in academic coursework in professional studies and electives.”

At the present time, the School of Architecture’s architecture curriculum consists of a four-year 120 credit Bachelor of Arts in Environmental Design degree coupled with a 3-semester 42 credit Master of Architecture degree—a total of 162 credits for the entire architecture curriculum. Our current curriculum
satisfies the requirement for a minimum of 30 credit hours at the graduate program but it does not meet the total 168 total credit hour requirement. Ultimately, our curriculum needed to be increased by 6 credits—in either the undergraduate or graduate degree program—in order to meet the NAAB accreditation conditions and maintain our NAAB accreditation. Maintaining our NAAB accreditation is critical to the ongoing success of our program as most jurisdictions in the United States require an accredited professional degree, such as our Master of Architecture degree, in order to become a licensed architect. There are less than 160 NAAB accredited architecture programs in the United States.

**Process Utilized**

Over the last three years, the School of Architecture has undergone a rigorous curriculum review in order to develop an undergraduate and graduate curriculum that would meet the NAAB 168 credit minimum requirement. This review process included weekly meetings by the school’s curriculum committee, individual interviews of faculty in each subject area by the curriculum committee, discussions at multiple faculty meetings each semester, and all-school forums in order to gain student feedback on the proposals throughout the process. A student representative has been on the curriculum committee throughout this process. Multiple scenarios were developed, debated, and refined. The outcome of this rigorous review process has resulted in the attached proposed curriculum for the Bachelor of Arts in Environmental Design. It was approved *unanimously* by the curriculum committee and by the School of Architecture faculty.

The School investigated a large number of scenarios including adding credits and courses to the undergraduate program, the graduate program as well as a combination of the two. The school looked at curricular areas that would benefit most from additional credits—in particular the areas of building systems, sustainability, research and design. We also looked at leveraging our graduate program to a larger degree since our current graduate program has a high proportion of open elective courses that could be converted to a series of more focused required courses. All of these scenarios were considered and contributed to the pedagogical approach we explored for our expanded curriculum.

Ultimately, it was determined that adding credits to our graduate program would increase the program of study from 11 semesters to 12 semesters resulting in increased tuition costs and time-to-graduation for all of our students. Adding credits to the undergraduate program could be accomplished within the current 8-semester B.A. in Environmental Design degree program and given the flat spot for undergraduate tuition adding 6 credits to a student’s program of study could be accomplished without an increase in tuition costs for students.

Given the emphasis on reducing time-to-graduation rates and the concerns about high levels of student loan debt, along with the pedagogical benefit of two new courses on sustainability and research, it was decided by the faculty that the additional 6 credits should be added to our B.A. in Environmental Design undergraduate degree program. Internal changes would be made to the graduate program but no additional credits would be added to our current 42-credit Master of Architecture degree program. This would bring the total number of undergraduate credits required for the B.A. in Environmental Design
degree to 126 credits and would allow us to meet the minimum credits requirements of NAAB—168 credits total with a minimum of 30 credits taken at the graduate level. A spreadsheet is attached which shows the curriculum proposal developed and approved by the School of Architecture faculty.

This curriculum was unanimously approved by the School of Architecture on November 28, 2012.

The proposed curriculum adds two new courses, one existing course that has not been required for a number of years and relocates a number of courses from a different semester or year. Following is a list of the proposed changes to our existing curriculum:

**New undergraduate required courses**
- ARCH 431 Sustainability in Architecture, 3 credits Added to Fall Semester of fourth year.
- ARCH 452 Research Methods in Architecture, 3 credits Added to Spring Semester of fourth year
  - The 6 credits of these two new courses will increase the total credits required for the B.A. in Environmental Design degree from 120 credits to 126 credits and allow us to meet the NAAB accreditation requirements.

**Existing undergraduate course added back into required curriculum**
- ARCH 457 Architectural design V, 5 credits Added to Spring Semester of fourth year
  - This course is currently an existing course in the undergraduate catalog but has not been required for a number of years. This course will replace 5 credits of architecture electives in our current undergraduate program.
  - This course will be designated as our new senior capstone course and as such the course description from our existing capstone ARCH 456 course will be used for ARCH 457.

**Existing undergraduate course shifted to a different year in the curriculum (and renumbered)**
- ARCH 254 Architectural Design II, 5 credits moves from Fall semester of third year (previously listed as ARCH 354) to Spring semester of second year and is renumbered to ARCH 254.
- ARCH 356 Architectural Design IV, 5 credits moves from Fall semester of fourth year (previously listed as ARCH 456) to Spring semester of third year and is renumbered to ARCH 356.
- ARCH 343 Architectural Structures I, 4 credits, and ARCH 344 Architectural Structures II, 4 credits, shift from Fall and Spring of second year (previously listed as ARCH 243 and 244) to the third year of the program and are renumbered as ARCH 343 and ARCH 344.

**Existing undergraduate course shifted to a different semester but remain in the same year**
- ARCH 253 Architectural Design I, 5 credits moves from Spring semester to Fall semester second year.
- ARCH 355 Architectural Design III, 5 credits moves from Spring semester to Fall semester of third year.
- ARCH 413 Professional Practice, 3 credits moves from Fall semester to Spring semester of fourth year and is renumbered from ARCH 313 to 413 to reflect its location in the fourth year of the program.
Graduate Program
To assist all reviewers of our undergraduate curriculum changes, we have also included the proposed changes to our Master of Architecture (M.Arch) graduate program. The M.Arch program remains at 42 credits but we have substituted two new required graduate courses in place of two graduate elective courses. Following is a summary of the changes proposed at the graduate level. All of these graduate program changes are being submitted to Graduate Council, Faculty Senate, Deans Council and the Office of the Provost for review and approval.

New graduate required courses
- ARCH 526  Contemporary History and Theory, 3 credits
- ARCH 535  Advanced Building Systems Integration, 3 credits
  - These two courses replace 6 existing credits of graduate electives in our graduate program.

New graduate required course replacing an existing required course
- ARCH 560  Independent Project Studio, 6 credits will replace an existing course, ARCH 557 Architectural Design Studio, 6 credits.

Attached to this narrative is a spreadsheet layout of the proposed new curriculum approved by the School of Architecture faculty. We have also included a copy of our existing curriculum (2012-2014)—with red arrows indicating design studios that are shifted to a different semester and black arrows indicating non-studio courses that are shifted to a different semester—in order to assist you with understanding the changes that are being proposed.

If there are questions on any of these items please do not hesitate to contact Professor Ralph Johnson, chair of the School of Architecture Curriculum Committee, 994-4650, or Professor Steve Juroszek, Interim Director of the School of Architecture, 994-3921.
Proposed B.A. in Environmental Design and Master of Architecture Curriculum (2014-2016)
Montana State University - School of Architecture  
Master of Architecture Curriculum - approved by faculty November 28, 2012  
updated January 16, 2013

Bachelor of Arts in Environmental Design - 126 Credits  
Master of Architecture- 42 Graduate Credits

<table>
<thead>
<tr>
<th>First Year- Pre-Environmental Design</th>
<th>Non-Architecture Credits</th>
<th>400 level Credits</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arch 121A  Intro Design</td>
<td>3</td>
<td>ARCH 152 Design Fundamentals II</td>
<td>4</td>
</tr>
<tr>
<td>Arch 151RA  Design Fundamentals I*</td>
<td>4</td>
<td>PHYS 205 College Physics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 150Q PreCalculus</td>
<td>4</td>
<td>Univ. Core (W, US, D, CS, RH, R, In, or R/15)</td>
<td>9</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, RH, R, In, or R/15)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 20 0 31

Second Year- Environmental Design Program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 241 Building Construction I</td>
<td>3 ARCH 254 Arch Design II</td>
</tr>
<tr>
<td>ARCH 253 Architectural Design I</td>
<td>5 ARCH 262 Architectural Graphics II</td>
</tr>
<tr>
<td>ARCH 261 Architectural Graphics I</td>
<td>3 ARCH 323A World Architecture II</td>
</tr>
<tr>
<td>ARCH 322A World Architecture I</td>
<td>3 Univ. Core (W, US, D, CS, RH, R, In, or R/15)</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, RH, R, In, or R/15)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 6 6 31

Third Year- Environmental Design Program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 331 Environmental Controls I</td>
<td>4 ARCH 332 Environmental Controls II</td>
</tr>
<tr>
<td>ARCH 343 Architectural Structures I</td>
<td>4 ARCH 340 Building Construction II</td>
</tr>
<tr>
<td>ARCH 365 Architectural Design III</td>
<td>5 ARCH 344 Architectural Structures II</td>
</tr>
<tr>
<td>ARCH 363 Architectural Graphics III</td>
<td>3 ARCH 366 Architectural Design IV</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 16 17

Fourth Year- Environmental Design Program

<table>
<thead>
<tr>
<th>Fall or Summer Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 450 Community Design Center</td>
<td>5 ARCH 457 Adv. Architectural Studio</td>
</tr>
<tr>
<td>or ARCH 313 Professional Practice</td>
<td></td>
</tr>
<tr>
<td>or ARCH 441 Arch Study Abroad and ARCH 428 Foreign Study History</td>
<td>ARCH 452 Research Methode in Architecture</td>
</tr>
<tr>
<td>or ARCH 458 Arch Design VI and electives</td>
<td>Non-architecture Electives</td>
</tr>
<tr>
<td>or ARCH 498 Internship</td>
<td>and ARCH 431 Sustainability in Architecture</td>
</tr>
<tr>
<td>or Non-architecture Electives</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 12 19 31

Bachelor of Arts in Environmental Design - 126 Credits

Graduate Year- Master of Architecture program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 558 Comprehensive Design Studio</td>
<td>6 ARCH 551 Advanced Architectural Studio</td>
</tr>
<tr>
<td>or ARCH 535 Advanced Building Systems Integration</td>
<td>ARCH 552 Research &amp; Creative Methods</td>
</tr>
<tr>
<td>or ARCH 526 Contemporary History and Theory</td>
<td>Graduate Electives*</td>
</tr>
<tr>
<td>or Graduate Elective*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 15 15

Fall Semester

| ARCH 566 Independent Project Studio | 6 Graduate Electives* |
|                                      | 6 |
|                                      |                   |
|                                      |                   |
|                                      |                   |
|                                      |                   |

Master of Architecture- 42 Graduate Credits

* Students must complete 45 non-architecture credits prior to receiving their Master of Architecture degree. These credits can be completed at the undergraduate or graduate level. Students who have completed 45 non-architecture credits prior to or during the course of their graduate program may substitute 7 credits of architecture graduate electives for non-architecture graduate electives

Legend for colors above

- **Black text for course number on blue background (course number only):** indicates existing course moved to a different semester
- **Red text for course number on blue background (course number only):** indicates existing course moved to a different year
- **Red text for course number on blue background (course number and course name):** indicates a new course

Total all credits 45 168
Existing B.A. in Environmental Design and Master of Architecture Curriculum (2012-2014) with arrows showing relocation of existing courses
Montana State University - School of Architecture

Bachelor of Arts in Environmental Design and Master of Architecture Curriculum

Updated July 23, 2012

Bachelor of Arts in Environmental Design - 120 Undergraduate Credits
Master of Architecture- 42 Graduate Credits

<table>
<thead>
<tr>
<th>First Year- Pre-Environmental Design</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
</tr>
<tr>
<td>Arch 121A (Intro Design)*</td>
<td>3</td>
</tr>
<tr>
<td>Arch 151RA (Design Fundamentals I*)</td>
<td>4</td>
</tr>
<tr>
<td>M 151Q (Precalculus or M171Q Calculus)</td>
<td>4</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, R/H, R/IN, or R/IS)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>ARCH 152 (Design Fundamentals II*)</td>
<td>4</td>
</tr>
<tr>
<td>PHYX 205 (College Physics)</td>
<td>4</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, R/H, R/IN, or R/IS)</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

Second Year- Environmental Design Program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 241 (Bldg Construction I)</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 243 (Architectural Structures I)</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 261 (Architectural Graphics I)</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 322IA (World Architecture I)</td>
<td>3</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, R/H, R/IN, or R/IS)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>ARCH 253 (Architectural Design I)</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 263 (Architectural Graphics II)</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 323IA (World Architecture II)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Third Year- Environmental Design Program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 331 (Environmental Controls I)</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 354 (Arch Design II)</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 363 (Architectural Graphics III)</td>
<td>3</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, R/H, R/IN, or R/IS)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>ARCH 332 (Environmental Controls II)</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 335 (Architectural Design III)</td>
<td>5</td>
</tr>
<tr>
<td>ARCH 340 (Bldg Construction II)</td>
<td>4</td>
</tr>
<tr>
<td>Univ. Core (W, US, D, CS, R/H, R/IN, or R/IS)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Fourth Year- Environmental Design Program

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Studio Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 456 (Architectural Design IV)</td>
<td>7</td>
</tr>
<tr>
<td>ARCH 313 (Professional Practice)</td>
<td>3</td>
</tr>
<tr>
<td>Non-Arch Electives</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Spring or Summer Semester</td>
<td></td>
</tr>
<tr>
<td>ARCH 450 Community Design Center</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>7</td>
</tr>
<tr>
<td>or ARCH 414 Foreign Study and</td>
<td>9</td>
</tr>
<tr>
<td>ARCH 428 Foreign Study History</td>
<td>3</td>
</tr>
<tr>
<td>Apply to Graduate Program once Arch 456 is completed</td>
<td>12</td>
</tr>
<tr>
<td>or ARCH 458 Arch Design VI + electives</td>
<td>12</td>
</tr>
<tr>
<td>or ARCH 498 Internship</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Graduate Year- Master of Architecture

| Summer Semester                     |                 |
| ARCH 551/557 (Adv. Arch Studio)     | 6               |
| ARCH 552 (Architectural Research Methods) | 3           |
| Arch. Graduate Electives**          | 6               |
|                                      | 12             |

* ARCH 121, ARCH 151RA and ARCH 152 are offered in Summer Semester for second degree students and transfer students
** All students in the School of Architecture curriculum must enroll and complete at least one summer graduate design studio
*** Students must complete 45 non-architecture credits prior to receiving their Master of Architecture degree. Students who have completed this requirement in their undergraduate studies may substitute Architecture graduate electives for the Non-Architecture graduate electives

indicates design studio which is relocated to a different semester
indicates non-studio class which is relocated to a different semester
New course proposals and changes to existing courses (2014-2016)
New Undergraduate Course Approval Cover Form
Montana State University

This four-page form collects basic information about the proposed new course, provides information on the approval process, and includes all required approvals. Additional information (see INFO sheet) is also required as part of the New Course Packet.

Proposed New Course Information

Requested Rubric, Course Number, Core Designation (if needed): ARCH 431

Course Title: Sustainability in Architecture
Abbreviated Course Title (≤ 30 chars): Sustainability in Architecture
First Semester to be Offered: Fall 2014
Submitted by: Ralph Johnson
Submitter's Contact Info: Phone, Email: 994-4650 ralphj@montana.edu
Instructor: Ralph Johnson
Department: Architecture
College: Arts and Architecture

New Course Review Process

Instructor completes the New Course Packet, with Core information if a Core designation is requested.

Instructor checks for "equivalent" course in the Mus system and recommends a common or unique course number.

Department: Head's signature indicates that course has been approved by the process used within the Department.

The Chair of the College Curriculum Committee signs to indicate College academic approval.

The College Dean signs to indicate that adequate resources are available to offer the course. Supporting information (Dean's Statement) is typically required.

The New Course Packet (as PDF) is uploaded to the Provost's Office server for distribution to other committees.

Course requests are sent to Curriculum and Program Committee (CPC). Core reviews are sent to appropriate Core subcommittee. Committees work in parallel when possible to speed approval process. Special topics courses (291, 401) skip the CPC review (limited to two years.)

Provost's Office reviews the new course request. New courses are submitted to MUS for Common Course Number (CCN) review. Dean and Department informed upon approval.

Approved new course sent to Registrar for inclusion in the Catalog and Schedule of Classes

APPROVALS

Submitter: [Signature] 1/16/2013
Department Head: [Signature] 1/16/2013
Chair, College Curriculum Comm.: [Signature] 1/16/2013
Dean: [Signature] 1/16/13
Chair, Core Subcommittee [if appl.]:

Assoc. Provost: [Signature] Date

Note: This diagram illustrates the typical flow path, but at any review step there can be a request for additional information or modifications. Careful review in early steps is the best way to speed the overall process. Special topics courses (≥1x1) require fewer signatures, but cannot be offered more than two times without committee review.
INFORMATION NEEDED FOR COMMON COURSE NUMBERING

The process for identifying a common course number for a new course is as follows:

1. Course learning outcomes are prepared for the new course.
2. The person submitting the new course request looks at the CCN website to see if a course with similar outcomes already exists in the MUS system. [www.mus.edu/Qtools/CCN/ccn_default.asp](http://www.mus.edu/Qtools/CCN/ccn_default.asp)
   - If a course exists with at least 80% of the same outcomes, the course is considered “equivalent” to the proposed new course, and the new course should use the existing rubric and course number.
   - If no “equivalent” course is found, the person submitting the new course request should identify a unique course number that has not been used by any other course in the MUS system.
3. The requested rubric and course number are submitted as part of the new course packet.
4. The Provost’s Office submits the learning outcomes and the requested rubric and course number to the MUS to have a course number assigned to the course. (This will typically be the requested course number, but it could be changed.)
5. The assigned common course number is reported back to the person submitting the new course request.

<table>
<thead>
<tr>
<th>Requested Rubric, Course Number, Core Designation (if needed):</th>
<th>ARCH 431</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Title:</td>
<td>Sustainability in Architecture</td>
</tr>
<tr>
<td>Abbrev. Course Title (≤ 30 char):</td>
<td>Sustainability in Architecture</td>
</tr>
<tr>
<td>Credits:</td>
<td>3</td>
</tr>
<tr>
<td>Department Offering Course:</td>
<td>Architecture</td>
</tr>
<tr>
<td>College:</td>
<td>Arts and Architecture</td>
</tr>
<tr>
<td>Is this course “equivalent” to a course in the MUS System?:</td>
<td>☐ Yes ☐ No</td>
</tr>
</tbody>
</table>
| Learning Outcomes for the Course:                           | 1. Students will be able to integrate and link the profession's ethical responsibilities to the broad spectrum of passive and active sustainable design strategies introduced to them in prior required courses.
|                                                               | 2. Students will be able to demonstrate knowledge of contemporary passive and active design techniques intended to minimize the energy footprint of architectural structures and spaces. |
|                                                               | 3. Students will be able to demonstrate knowledge of passive and active design strategies and techniques that sustain natural resources. |
|                                                               | 4. Students will be prepared to provide leadership in the area of sustainability within the architectural profession. |
ARCH 431
Sustainability in Architecture
Sustainability in Architecture
Fall 2014
1095
Architecture
Arts and Architecture

ARCH 332 Environmental Controls II and ARCH 356 Architectural Design IV
Architectural and site strategies for reducing the energy footprint of structures and spaces with an emphasis on the profession’s ethical responsibility and techniques that maximize the potential of active and passive design strategies to sustain our natural resources.
DEAN’S STATEMENT

The reviewing committees are being asked to take a closer look at the resources required for each proposed new course. In many cases new courses will replace existing courses and the new course request is effectively resource neutral, however that is not always the case. For example, a new elective course that would result in distributing an existing student population across a larger number of courses would represent a significant increase in expenditures for the new course, and no increase in total student credit hours. A funding mechanism for such a course would need to be identified. The Dean’s Statement is the place to document how the costs of the proposed new course will be covered.

ARCH 431 Sustainability in Architecture is a new course and would add 3 additional credits to the Bachelor of Arts in Environmental Design undergraduate program. This will result in additional Student Credit Hours generated for the department and university. This course will be offered as an on-line course. Since this course will be part of the required curriculum for Environmental Design, faculty staffing for the course will be accommodated through existing faculty workloads and departmental resources. The School will apply for any on-line course development grants that may be available to all departments for developing on-line courses, but adding this course to the B.A. in Environmental Design curriculum will not require additional college or university resources to deliver this course.
New Undergraduate Course Narrative  
Montana State University  
Updated August 23, 2012

Please provide the following information in narrative format. Substantive responses to all criteria are required. Although not required, a draft syllabus can also be helpful to the committee in understanding the details of the proposed course.

General Course Information
1. Requested Rubric, Course Number, and Core Designation (if any)

> ARCH 431

2. Course Title

> Sustainability in Architecture

3. Provide a general description of the course explaining the need for the course, its goals, and its overall structure. This is the most important part of the application and should offer a good sense of what students will experience by taking this class.

> The course will focus on architectural and site strategies for reducing the energy footprint of structures and spaces with an emphasis on the profession’s ethical responsibility and techniques that maximize the potential of active and passive design strategies to sustain our natural resources.

Need – No single course in School of Architecture (SOA) curriculum focuses on this subject. The issues associated with sustainability have become a significant part of the architectural profession in the last 10 years and reflecting this reality the National Architectural Accreditation Board (NAAB), beginning in 2009, identified the subject as a primary required component of the accreditation evaluation process. In the past strategies for addressing sustainability have been taught in various studios and lecture courses within the SOA however no inclusive synthesis opportunity for teaching and learning exists. By creating a course with this singular focus SOA students will be better prepared to not only enter the profession but also assume a leadership role.

Goal – Placed in the fourth year of the student’s education the course has four primary goals:

1. Integrate and link, to the profession’s ethical responsibilities, the breadth of passive and active sustainable design strategies to which students have been introduced previously in their design education.
2. Introduce students to the most contemporary passive and active design techniques intended to minimize the energy footprint of structures and spaces.
3. Advance the students’ knowledge of active and passive design strategies and techniques intended sustain to our natural resources.
4. Prepare students to be leaders in the field of sustainable design within the architectural profession.
Overall structure – The course will be taught on-line to permit students who are off campus engaged in an internship, study abroad, or in our Community Design Center to take the course. The course will be taught as a lecture with topical on-line discussion groups based on assigned readings.

4. Based on what types of student work (e.g., tests, homework assignments, papers, performances, etc.) will grades be determined?

> Learning outcomes will be measured by participation in discussion groups, homework assignments, exams, papers, and projects.

5. Provide a course content outline containing all major topics plus a brief description of the material to be covered under each major topic heading.

> Part I - Sustainability and Architecture
  • Ethical Responsibilities
  • History
  • Metrics
Part II – Natural Resources
  • Carbon footprint
  • Embodied energy
  • Ecological systems
Part II – Passive design systems
  • Passive site strategies, techniques and systems
  • Passive building strategies, techniques and systems
Part III – Active design systems
  • Active site strategies, techniques and systems
  • Active building strategies, techniques and systems

6. List required texts or other required references.

> Ten Shades of Green, Architecture and the Natural World by Peter Buchanan
The Principles of Sustainability by Simon Dresner
Towards Zero Energy Architecture by Mary Guzowski
Sustainable Construction by Charles J. Kibert
Green Studio Handbook by Walter Grondzik

7. What are the estimated enrollment and student credit hour (SCH) production?
   [SCH = (enrollment * credits)]

> Estimated enrollment – 65
   Student credit hour production - 195

8. Will there be an enrollment cap that restricts enrollment below the level of student demand? If so, what is the enrollment cap and why is it necessary?

> No
9. Will course be a “restricted enrollment” course? If so, why is restricted enrollment necessary?

> Yes – Architecture majors only.
Why – Students will need a basic architectural education to understand site/building systems and their relationship to sustainable strategies

10. Describe how the success of the course will be evaluated? (“End-of-semester student evaluations” is not the answer to this question. How will the instructor determine if the learning outcomes are being met, and how will the department determine if the course is fulfilling its intended purpose?)

> The success of learning outcomes as measured against learning objectives will be measured by the instructor in the following manner:
- **Homework** – Reading assignments in preparation of discussion group sessions – Critical reading notes, questions and comments submitted to the instructor prior to discussion and evaluated on demonstrated engagement with reading (Graded P/F)
- **Discussion Group Sessions** – Short summary papers will be required from each student with their conclusions and insight’s identified (Graded P/F)
- **Exams** – Intended to evaluate the students’ mastery of basic facts, systems, technologies, strategies and their application. (Graded A-F)
- **Papers** – Research subjects intended to provide students with a greater depth of understanding than can occur in lectures will be assigned. The research papers will be team projects. Power point summary presentations of research papers will be given to the entire class. (Group graded A-F modified by peer evaluations)
- **Projects** – Application of the learning objectives to design opportunities identified by the instructor intended to synthesize the materials presented in the course. These will be undertaken by teams. (Group graded A-F modified by peer evaluations)

The department will determine if the course is fulfilling its intended purpose in three ways:
1. The course is a prerequisite for the capstone design studio. As part of the Architecture program assessment process the SOA faculty conducts a one day review of courses taught that semester and reviews the student outcomes against learning objectives. This annual evaluation of the capstone projects will demonstrate if mastery of the subject matter taught in this course is evident.
2. The NAAB accreditation team will evaluate the course as part of their accreditation review. From these reviews the department will on a regular basis determine if the course is meeting its learning objectives and thus fulfilling its intended purpose.

11. Is the instructor a member of the regular faculty (i.e., tenured or tenure-track)? If no, please describe the instructor’s qualifications, attach a Vita, and provide a separate letter of support, signed by the department head (or appropriate unit director), addressing the instructor’s qualifications to teach this course.

> Yes – The instructor is Ralph Johnson, Full Professor with tenure.
Level of Offering
12. Has the course been offered previously under 280/291 or 480/491? If so, when? Under what number? What was the enrollment? What level of students took the course?

> No – The course has not been offered previously

13. Justify the level of course offering.

> The course is to be taken the fall or summer of their fourth year following completion of four previous architectural design studios in their second and third years, the completion of two building construction courses, as well as the completion of two environmental controls courses in their third year. These courses are required for the student to have adequate fundamental subject mastery in preparation for this course. In the spring term of their fourth year students take the capstone design studio where it is expected that the students will apply the knowledge gained in this course.

Relationship to other Courses, Curricula, and Departments
14. Does this course build on or interrelate with other courses in your curriculum or related curricula? If so, which ones?

> Yes – See # 13 above. Specific course upon which it is built
  • ARCH 253  Architectural Design I
  • ARCH 241  Building Construction I
  • ARCH 254  Architectural Design II
  • ARCH 331  Environmental Controls I
  • ARCH 355  Architectural Design III
  • ARCH 332  Environmental Controls II
  • ARCH 340  Building Construction II
  • ARCH 356  Architectural Design IV

15. Do the topics in the proposed course duplicate or reiterate those in other courses in this or any other department? If so, how do the coverage and educational experience differ and how is this duplication or reiteration justified? Also, what liaison (which is expected in cases of apparent overlap) has been conducted with other departments? Report reactions, both favorable and unfavorable.

> No – The topics in the proposed course may be similar to others throughout the University, however, in the topics’ integration and application to architecture they do not duplicate or reiterate those in other courses in this or any other department.
16. What programs (departments, colleges) will be impacted by the SCH production of this course? That is, where do you think the SCH in the proposed course are likely to come from? If the expected SCH production of the proposed course is greater than 1000, and the SCH are expected to come from other colleges, what steps have been taken to make the other units aware of the potential loss of SCH? Report reactions, both favorable and unfavorable.

> The School of Architecture (SOA) within the College of Arts and Architecture will be the only department impacted by the SCH production of this course and the SCH will come entirely from the SOA.

17. If this proposed course has a significant interdisciplinary component, please explain briefly. Otherwise, indicate n/a.

> The course has a significant interdisciplinary component by the very nature of the subject matter; however, the interdisciplinary content will be, in general, realized through textual sources.

**Students Served**

18. Does the proposed course serve majors only? Non-majors only? Both majors and non-majors? What other majors might be interested in this course? State areas or disciplines to be served and indicate the specific efforts that will be made to make the course material relevant to all disciplines served.

> Majors only.

**Resources**

19. What additional resources (e.g., additional instructional FTE, required technologies), if any, will be required to offer this course? Are there any resource issues for the students who will take the course (e.g., required technologies, travel, on-line access requirements)? Will there be an additional fee charged to students taking this course? Please explain.

> No additional resources are required to offer the course. Students will be required to meet on-line access requirements. No additional fees will be charged to students taking this course

20. What existing information resources – print (books, journals, documents), audiovisual (videos, DVDs, CDs or other), and/or electronic (e-books, databases, electronic journals and web sites) – provided by the MSU Libraries will be used by students in this course? Provide examples as well as descriptive information. If additional information resources are necessary, please discuss those acquisitions with the library (x6549 Collection Development) at least three months prior to the beginning of the semester in which this course will be taught.

> Since students taking the course will be off campus the course will not rely on MSU Library information resources. Adequate MSU Library information resources exist for faculty use in teaching the course.

**Other Supporting Material**

21. Include any additional information you feel is needed to support this request.

> N/A
New Undergraduate Course Approval Cover Form
Montana State University

This four-page form collects basic information about the proposed new course, provides information on the approval process, and includes all required approvals. Additional information (see INFO sheet) is also required as part of the New Course Packet.

Proposed New Course Information

Requested Rubric, Course Number, Core Designation (if needed): ARCH 452

Course Title: Research Methods in Architecture
Abbreviated Course Title (≤30 chars): Research Methods in Arch
First Semester to be Offered: Spring 2014
Submitted by: Fatih Rifki
Submitter's Contact Info: Phone, Email: 994-4290 rifki@montana.edu
Instructor: Fatih Rifki
Department: Architecture
College: Arts and Architecture

New Course Review Process

Instructor completes the New Course Packet, with Core information if a Core designation is requested.
Instructor checks for "equivalent" course in the MUS system and recommends a common or unique course number.
Department Head's signature indicates that course has been approved by the process used within the Department.
The Chair of the College Curriculum Committee signs to indicate College academic approval.
The College Dean signs to indicate that adequate resources are available to offer the course. Supporting information (Dean's Statement) is typically required.
The New Course Packet (as PDF) is uploaded to the Provost's Office server for distribution to other committees.
Course requests are sent to Curriculum and Program Committee (CPC). Core reviews are sent to appropriate Core subcommittee. Committees work in parallel when possible to speed approval process. Special topics courses (291, 491) skip the CPC review (limited to two years.)
Provost's Office reviews the new course request. New courses are submitted to MUS for Common Course Number (CCN) review. Dean and Department informed upon approval.
Approved new course sent to Registrar for inclusion in the Catalog and Schedule of Classes

APPROVALS

Submitter: [Signature] 1/10/13
Department Head: [Signature] 1/16/13
Chair, College Curriculum Comm.: [Signature] 1/16/13
Dean*: [Signature] 1/13/13
Chair, Core Subcommittee (if app.): [Signature] [Date]
Chair, CPC: [Signature] [Date]
Assoc. Provost*: [Signature] [Date]

Note: This diagram illustrates the typical flow path, but at any review step there can be a request for additional information or modifications. Careful review in early steps is the best way to speed the overall process. * Special topics courses (x91) require fewer signatures, but cannot be offered more than two times without committee review.
INFORMATION NEEDED FOR COMMON COURSE NUMBERING

The process for identifying a common course number for a new course is as follows:

1. Course learning outcomes are prepared for the new course.
2. The person submitting the new course request looks at the CCN website to see if a course with similar outcomes already exists in the MUS system.
   
   www.mus.edu/Qtools/CCN/ccn_default.asp

   • If a course exists with at least 80% of the same outcomes, the course is considered “equivalent” to the proposed new course, and the new course should use the existing rubric and course number.
   
   • If no “equivalent” course is found, the person submitting the new course request should identify a unique course number that has not been used by any other course in the MUS system.
3. The requested rubric and course number are submitted as part of the new course packet.
4. The Provost’s Office submits the learning outcomes and the requested rubric and course number to the MUS to have a course number assigned to the course. (This will typically be the requested course number, but it could be changed.)
5. The assigned common course number is reported back to the person submitting the new course request.

<table>
<thead>
<tr>
<th>Requested Rubric, Course Number, Core Designation (if needed):</th>
<th>ARCH 452</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Title: Research Methods in Architecture</td>
<td></td>
</tr>
<tr>
<td>Abbrev. Course Title (≤ 30 char): Research Methods in Arch</td>
<td></td>
</tr>
<tr>
<td>Credits: 3</td>
<td></td>
</tr>
<tr>
<td>Department Offering Course: Architecture</td>
<td></td>
</tr>
<tr>
<td>College: Arts and Architecture</td>
<td></td>
</tr>
</tbody>
</table>

Is this course “equivalent” to a course in the MUS System?: ☑ No

<table>
<thead>
<tr>
<th>Learning Outcomes for the Course:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students will acquire knowledge of the philosophical and theoretical foundations on which the practice of research is based in both humanities and sciences.</td>
</tr>
<tr>
<td>2. Students will acquire the skills required to utilize digital data sources and internet/new media research as part of an architectural research process.</td>
</tr>
<tr>
<td>3. Students will acquire the skills required to utilize graphic analysis and visualization synthesis as part of an architectural research process.</td>
</tr>
<tr>
<td>4. Students will demonstrate the ability to utilize research outcomes to shape the architectural design decision making process.</td>
</tr>
</tbody>
</table>
ARCH 452
Research Methods in Architecture
Research Methods in Arch
Spring 2014
2045
Architecture
Arts and Architecture

Is the requested course number available? (x4155 to check): ☑ Yes ☐ No

Frequency of course offering:
☑ Annually
☐ Alternate Years, starting

Semester(s) offered (check all that apply):
☐ Summer
☐ Fall
☑ Spring

Summer Options (check all that apply):
☐ First 6 weeks
☐ Second 6 weeks
☐ 12 weeks

Credits by mode of instruction:
Lecture: 3
Seminar: 
Independent Study: 
Lab/Studio: 
Recitation/Discussion: 
TOTAL CREDITS: 3

Primary Mode(s) of Delivery:
☑ Face-to-face
☐ Web-Enhanced (small on-line comp.)
☑ On-Line Only
☐ Blended (significant on-line portion)

Time and Location — Call the Registrar’s Office at x4155
to find a time and location for the course.

Assigned Day(s):
☑ M ☐ Tu ☑ W ☐ Th ☑ F ☐ Sa ☐ Su

Assigned Time(s):
1310 -1400

Assigned Building:
CHVR

Assigned Room:
214
Capacity (room capacity, or enrollment “cap”):
65

Co- and Pre-Requisites — Courses numbered 200 and above
are normally expected to have prerequisites. When listing
multiple prerequisites, please separate courses with “and”
if both are required, or “or” if only one is required.

Prerequisite(s):

Co-Requisite(s):

Course Description — Provide a course description of 40
words or less for the MSU Catalog.

Students are introduced to systematic architectural
inquiry, its purpose in architectural design, the different
approaches to conducting architectural research, and
the major components of architectural research.
DEAN’S STATEMENT

The reviewing committees are being asked to take a closer look at the resources required for each proposed new course. In many cases new courses will replace existing courses and the new course request is effectively resource neutral, however that is not always the case. For example, a new elective course that would result in distributing an existing student population across a larger number of courses would represent a significant increase in expenditures for the new course, and no increase in total student credit hours. A funding mechanism for such a course would need to be identified. The Dean’s Statement is the place to document how the costs of the proposed new course will be covered.

ARCH 452 Research Methods in Architecture is a new required course and would add 3 additional credits to the Bachelor of Arts in Environmental Design undergraduate program. This will result in additional Student Credit Hours generated for the department, the college and the university. Since this course will be part of the required curriculum for Environmental Design, faculty staffing for the course will be accommodated through existing faculty workloads and departmental resources. Adding this course to the B.A. in Environmental Design curriculum will not require additional college or university resources.
Please provide the following information in narrative format. Substantive responses to all criteria are required. Although not required, a draft syllabus can also be helpful to the committee in understanding the details of the proposed course.

**General Course Information**

1. Requested Rubric, Course Number, and Core Designation (if any)

ARCH 452

2. Course Title

*Research Methods in Architecture*

3. Provide a general description of the course explaining the need for the course, its goals, and its overall structure. *This is the most important part of the application and should offer a good sense of what students will experience by taking this class.*

This course is focused on the basic knowledge and skills required to conduct research in architecture. It covers the Foundations of Research (Philosophy and Theory) as well as the Domain of Research (Strategies and Tactics).

**Need** – No single course in School of Architecture (SOA) curriculum focuses on Research, which has recently become a significant part of the architectural profession. Ability to conduct research is now a required component of the Student Performance Criteria required for accreditation of the professional degree by the National Architectural Accreditation Board (NAAB). In the past strategies for addressing research have been taught in various studios and lecture courses within the SOA, however no inclusive synthesis opportunity for teaching and learning exists. By creating a course with this singular focus, SOA students will be better prepared to not only enter the profession but assume a leadership role.

**Goal** – Placed in the fourth year of the student’s education the course has three primary goals:

1. Introduce students to the philosophical and theoretical foundations on which the practice of research is based in both humanities and sciences.

2. By way of exposing students to traditional as well as recent research methodologies prevalent in the discipline of architecture. This course will initiate acquisition of skills required to utilize digital data sources, internet/new media research, graphic analysis, and visualization synthesis.
3. Through involvement in small-scale research exercises, equip students to understand how research outcomes are used in design decision making to facilitate being an effective consumer of research efforts.

Overall structure – The course will be taught in the traditional lecture-format but also involve small group discussions and team exercises.

4. Based on what types of student work (e.g., tests, homework assignments, papers, performances, etc.) will grades be determined?

Learning outcomes will be measured by participation in discussion groups, homework assignments, exams, papers, and projects.

5. Provide a course content outline containing all major topics plus a brief description of the material to be covered under each major topic heading.

Part 1. Context
Broad issues common to research design are covered. Examples include: the scientific and logical struggles in the history of architectural research, situating architectural research within the context of the current academic research context, general knowledge production and how it is applied to architectural research, and theoretical frameworks of architectural thinking

Part II. Methodologies
Defining and refining research; examining specific approaches to architectural research and the corresponding methods techniques. In these sessions, the assigned readings will include both general analyses of the research approach and specific examples of actual research studies utilizing that approach. The different ways of gathering data using research methods and relevant techniques will be introduced as well as basic analytical techniques.

Part III. Application
Students will present their research project developed throughout the semester.

6. List required texts or other required references.

Architectural Research Methods, by L. Groat and D. Wang
Practical Research: Planning and Design by Paul Leedy and Jeanne Ellis Ormond
Inquiry by Design by John Zeisel

7. What are the estimated enrollment and student credit hour (SCH) production? 
[SCH = (enrollment * credits)]

Estimated enrollment – 65
Student credit hour production - 195

8. Will there be an enrollment cap that restricts enrollment below the level of student demand? If so, what is the enrollment cap and why is it necessary?

No.
9. Will course be a “restricted enrollment” course? If so, why is restricted enrollment necessary?

Yes – Architecture majors only.
Why – Students will need a basic architectural education.

10. Describe how the success of the course will be evaluated? (“End-of-semester student evaluations” is not the answer to this question. How will the instructor determine if the learning outcomes are being met, and how will the department determine if the course is fulfilling its intended purpose?)

The success of learning outcomes as measured against learning objectives will be measured by the instructor in the following manner:

- Homework – Reading assignments in preparation of discussion group sessions – Critical reading notes, questions and comments submitted to the instructor prior to discussion and evaluated on demonstrated engagement with reading (Graded P/F)
- Discussion Group Sessions – Short summary papers will be required from each student with their conclusions and insight’s identified (Graded P/F)
- Papers – Research subjects intended to provide students with a greater depth of understanding than can occur in lectures will be assigned. The research papers will be team projects. Power point summary presentations of research papers will be given to the entire class. (Group graded A-F modified by peer evaluations)
- Projects – Application of the learning objectives to design opportunities identified by the instructor intended to synthesize the materials presented in the course. These will be undertaken by teams. (Group graded A-F modified by peer evaluations)

The department will determine if the course is fulfilling its intended purpose in two ways:

1. As part of the Architecture program assessment process the SOA faculty conducts a one day review of courses taught that semester and reviews the student outcomes against learning objectives.
2. The NAAB accreditation team will evaluate the course as part of their accreditation review. From these reviews the department will on a regular basis determine if the course is meeting its learning objectives and thus fulfilling its intended purpose.

11. Is the instructor a member of the regular faculty (i.e., tenured or tenure-track)? If no, please describe the instructor’s qualifications, attach a Vita, and provide a separate letter of support, signed by the department head (or appropriate unit director), addressing the instructor’s qualifications to teach this course.

Yes, the instructor is Fatih Rifki, Full Professor with tenure.

Level of Offering

12. Has the course been offered previously under 280/291 or 480/491? If so, when? Under what number? What was the enrollment? What level of students took the course?

No – The course has not been offered previously
13. Justify the level of course offering.

The course is to be taken in the Spring semester of the fourth year of the Environmental Design program following the completion of four previous architectural design studios in their second and third years, the completion of their second building construction course, as well as the completion of two environmental controls courses in their third year and a sustainability course in their fourth year. These courses are required for the student to have adequate fundamental subject mastery in preparation for this course as a co-requisite.

**Relationship to other Courses, Curricula, and Departments**

14. Does this course build on or interrelate with other courses in your curriculum or related curricula? If so, which ones?

Yes – See # 13 above. Specific course upon which it is built
- ARCH 253 Architectural Design I
- ARCH 254 Architectural Design II
- ARCH 322IA Architectural History I
- ARCH 323IA Architectural History II
- ARCH 355 Architectural Design III
- ARCH 340 Building Construction II
- ARCH 356 Architectural Design I
- ARCH 431 Sustainability in Architecture

15. Do the topics in the proposed course duplicate or reiterate those in other courses in this or any other department? If so, how do the coverage and educational experience differ and how is this duplication or reiteration justified? Also, what liaison (which is expected in cases of apparent overlap) has been conducted with other departments? Report reactions, both favorable and unfavorable.

No – The topics in the proposed course may be similar to others throughout the University, however, the topics’ integration, application and deliverables are specific to the discipline of Architecture and do not duplicate or reiterate those in other courses in this or any other department.

16. What programs (departments, colleges) will be impacted by the SCH production of this course? That is, where do you think the SCH in the proposed course are likely to come from? If the expected SCH production of the proposed course is greater than 1000, and the SCH are expected to come from other colleges, what steps have been taken to make the other units aware of the potential loss of SCH? Report reactions, both favorable and unfavorable.

The School of Architecture (SOA) within the College of Arts and Architecture will be the only department impacted by the SCH production of this course and the SCH will come entirely from the SOA.
17. If this proposed course has a significant interdisciplinary component, please explain briefly. Otherwise, indicate n/a.

n/a

Students Served
18. Does the proposed course serve majors only? Non-majors only? Both majors and non-majors? What other majors might be interested in this course? State areas or disciplines to be served and indicate the specific efforts that will be made to make the course material relevant to all disciplines served.

Majors only.

Resources
19. What additional resources (e.g., additional instructional FTE, required technologies), if any, will be required to offer this course? Are there any resource issues for the students who will take the course (e.g., required technologies, travel, on-line access requirements)? Will there be an additional fee charged to students taking this course? Please explain.

No additional resources are required to offer the course.
No additional fees will be charged to students taking this course.

20. What existing information resources – print (books, journals, documents), audiovisual (videos, DVDs, CDs or other), and/or electronic (e-books, databases, electronic journals and web sites) – provided by the MSU Libraries will be used by students in this course? Provide examples as well as descriptive information. If additional information resources are necessary, please discuss those acquisitions with the library (x6549 Collection Development) at least three months prior to the beginning of the semester in which this course will be taught.

Adequate MSU Library information resources exist for faculty use in teaching the course and for student use.

Other Supporting Material
21. Include any additional information you feel is needed to support this request.

N/A
Undergraduate Course Change
Montana State University

Architecture
Department
Arts and Architecture
College
ARCH 253
Rubric
Course Number
Fall 2014
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Architectural Design I
Course Title (for catalog)

Architectural Design I
Course Title (for schedule – maximum of 22 characters)

Frequency Offered:  □ Annual  □ Alternate Years  □ if alternate, starting
year: ______

Seminesters(s) Offered:  □ Summer  □ Fall  □ Spring

Credits by Mode of Instruction:  Lecture: 8  Seminar: 1
Independent Study: ______  Lab/Studio: 4  Recitation/Discussion: ______

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by “and”) or if only one is required (separated by “or”):

_____  

Corequisite Courses:

_____  

Course Description (40 word limit): If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

Person Initiating this Request:  Sj
  e-mail: stevej@montana.edu  |  Phone: 3921

Approval
You only need to obtain the 2 which are indicated with an asterisk (*)

Department Head 2012
Date

Dean of Assistant Dean 2013
Date

Chair, University Committee 2013
Date

Academic Vice Provost 2013
Date
ARCH 253 ARCHITECTURAL DESIGN I
§ 5 cr. LEC 1 STU 4
PREREQUISITE: ARCH 152, ARCH-261. Formal admission into the environmental design program.
COREQUISITE: ARCH-262.
-- Small-scale design projects requiring integration of spatial, visual concepts, emphasizing relationship of architecture to its context with principles of order, constituents of form, light, structural awareness, nature of materials, architectural coherency. Includes inclusive orthographic graphics design drawing conventions.
Undergraduate Course Change
Montana State University
"PLEASE HIGHLIGHT CHANGES"

Architecture
Department

Arts and Architecture
College

ARCH 254
Rubric
Course Number

Fall 2014
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Architectural Design II
Course Title (for catalog)

Architectural Design II
Course Title (for schedule – maximum of 22 characters)

Frequency Offered: □ Annual □ Alternate Years □ if alternate, starting year:

Semesters(s) Offered: □ Summer □ Fall □ Spring

Credits by Mode of Instruction:
Lecture: 1
Independent Study: 
Recitation/Discussion: 
Seminar: 
Lab/Studio: 4

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by “and”) or if only one is required (separated by “or”):

Co-requisite Courses:
remove current co requisites ARCH 241 and ARCH 363

Course Description (40 word limit): If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

Person Initiating this Request: sj
e-mail: stevej@montana.edu

Phone: 3921

Approval

You only need to obtain the 2 which are indicated with an asterisk(*)

Department Head

Date

College Dean or Assistant Dean

Date

Academic Vice Provost

Date
ARCH 254-254 ARCHITECTURAL DESIGN II
F 5 cr. LEC 1 STU 4
PREREQUISITE: ARCH 253.
COREQUISITE: ARCH-241 and ARCH-363.
-- Small-to medium-size projects extending the development of the design process to site and adjacency analysis, diagramming, fundamental relationship to landscape and context. Topics include hybrid uses of hand and digital graphic communication including 2D and 3D drawing, and modeling. Field trip required.
Undergraduate Course Change
Montana State University

Architecture
Department
Arts and Architecture
College
ARCH 243
Rubric
Course Number
Fall 2014
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Architectural Structures I
Course Title (for catalog)

Architectural Structures I
Course Title (for schedule – maximum of 22 characters)

Frequency Offered:
☐ Annual
☐ Alternate Years
☐ if alternate, starting year:

Semesters(s) Offered:
☐ Summer
☐ Fall
☐ Spring

Credits by Mode of Instruction:
Lecture: 1
Independent Study: ______
Recitation/Discussion: ______
Seminar: ______
Lab/Studio: 4

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by “and”) or if only one is required (separated by “or”):
PHSX 205, M 151Q or M 171Q, formal admission into environmental design program

Co requisite Courses:

Course Description (40 word limit): If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

Person Initiating this Request: sj
E-mail: slevej@montana.edu
Phone: 3921

Approval
You only need to obtain the 2 which are indicated with an asterisk(*)

Department Head
Date: 1/16/13

College Dean or Assistant Dean
Date: 1/15/13

Chair, Undergraduate Studies Committee
Date

Academic Vice Provost
Date
ARCH 243 343 ARCHITECTURAL STRUCTURES I
F 4 cr. LEC 3 RCT 1
PREREQUISITE: PHSX 205, M 151Q or M 171Q, formal admission into environmental design program.
COREQUISITE: ARCH 261.

-- Introduction to structural design/analysis of horizontal and vertical members as applied to architectural works; basic statics, moment and shear of rigid bodies and architectural forms; strength concepts using stress and strain assessment; application of analytical and intuitive structural concepts in a design context.
Undergraduate Course Change
Montana State University
“PLEASE HIGHLIGHT CHANGES”

Architecture
Department
Arts and Architecture
College
ARCH
Rubric
244-344
Course Number
Fall 2014
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Architectural Structures II
Course Title (for catalog)

Architectural Structures II
Course Title (for schedule – maximum of 22 characters)

Frequency Offered:  ⚜ Annual  ☐ Alternate Years  ☐ if alternate, starting year:

Semesters(s) Offered:  ☐ Summer  ☐ Fall  ☑ Spring

Credits by Mode of Instruction:
Lecture: 1
Independent Study: _____
Recitation/Discussion: _____
Seminar: _____
Lab/Studio: 4

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by “and”) or if only one is required (separated by “or”):
PHSX 205, M 151Q or M 171Q, formal admission into environmental design program ARCH 343

Co requisite Courses:

Course Description (40 word limit): If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

Person Initiating this Request: sj
E-mail: stevej@montana.edu

Phone: 3921

Approval
You only need to obtain the 2 which are indicated with an asterisk(*)

Monte J. Date
Department Head

Hershey Carroll 11/21/13
College Dean of Assistant Dean

Dan W. Date
Chair, Undergraduate Studies Committee

Academic Vice Provost

Date
ARCH 244-344 ARCHITECTURAL STRUCTURES II

4 cr. LEC 3 RCT 1
PREREQUISITE: ARCH 243-343, M 151Q or M 171Q.

Understanding of design for structural elements in wood, steel, masonry, and concrete. Lateral considerations and calculations including wind, soil and seismic loads. Understanding of structural systems; building systems; diaphragms; connections; structural engineer-architect communications.
Undergraduate Course Change
Montana State University

"PLEASE HIGHLIGHT CHANGES"

Architecture
Department
Arts and Architecture
College
ARCH 355
Rubric
Course Number
Fall 2014
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Architectural Design III
Course Title (for catalog)

Architectural Design III
Course Title (for schedule – maximum of 22 characters)

Frequency Offered: ☑ Annual       ☐ Alternate Years       ☐ if alternate, starting year:

Semesters(s) Offered: ☐ Summer       ☒ Fall       ☐ Spring

Credits by Mode of Instruction:
Lecture: 1
Independent Study: ______
Recitation/Discussion: ______
Seminar:______
Lab/Studio: 4

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by "and") or if only one is required (separated by "or"): ARCH 254

Co requisite Courses:

Course Description (40 word limit): If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

Person Initiating this Request: sj
e-mail: slevsi@montana.edu

Phone: 3921

---

Approval
You only need to obtain the 2 which are indicated with an asterisk(*)

Department Head
1/6/13

College Dean or Assistant Dean
11/5/13

Chair, Undergraduate Studies Committee

Academic Vice Provost
ARCH 355 ARCHITECTURAL DESIGN III
5-5 cr. LEC 1 STU 4
PREREQUISITE: ARCH 354, 254
COREQUISITE: ARCH 332.

-- Further exploration of ecologically-sound design with emphasis on the integration of structures, building envelope service systems, and building materials, including design for life safety and accessibility. Building scale and program complexity increases, utilizing long-span structural systems. Notebook computer required. Field trip required
### Undergraduate Course Change
**Montana State University**
**PLEASE HIGHLIGHT CHANGES**

<table>
<thead>
<tr>
<th>Department</th>
<th>Architecture</th>
<th>Arts and Architecture</th>
<th>ARCH</th>
<th>456-356</th>
<th>Fall 2014</th>
<th>College</th>
<th>Rubric</th>
<th>Course Number</th>
<th>Effective Semester</th>
</tr>
</thead>
</table>

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

**Architectural Design IV**

**Course Title (for catalog)**

**Architectural Design IV**

**Course Title (for schedule – maximum of 22 characters)**

Frequency Offered:  
- [ ] Annual  
- [ ] Alternate Years  
- [ ] if alternate, starting year:

Semesters(s) Offered:  
- [ ] Summer  
- [ ] Fall  
- [ ] Spring

Credits by Mode of Instruction:  
- Lecture: 1  
- Independent Study:  
- Seminar:  
- Lab/Studio: 4  
- Recitation/Discussion: 

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by "and") or if only one is required (separated by "or"):  
ARCH 355

Co requisite Courses:

Course Description (40 word limit):  
If there is a change in the course description, please attach the typed/edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow). **See attached**

Person Initiating this Request: si  
E-mail: stevei@montana.edu  

| Phone: 3921 |

---

**Approval**

*You only need to obtain the 2 which are indicated with an asterisk(*)

Department Head:  
Date: 1/16/13

[Signature]

[Chair, Undergraduate Studies Committee]  
Date

[Signature]

Course Dean of Assistant Dean:  
Date: 1/15/13

[Signature]

Academic Vice Provost:  
Date

[Signature]
ARCH 456 356 ARCHITECTURAL DESIGN IV
5 5 cr. LEC 1 STU 4
PREREQUISITE: ARCH 355
COREQUISITE: ARCH 313

-- Senior capstone course. Architectural design integrating building, landscape, and urban context using multi-story projects of medium scale and complexity with particular focus on mixed-use. Integrated topics include programming, structural and mechanical integration, ecologically sound design, building envelope systems and building codes.

Advanced architectural design projects integrating site analysis, programming, building systems, and contemporary design theory. Emphasis placed on the inclusive synthesis of conceptual processes, analysis, preliminary design investigation, and design development. Notebook computer required.
Undergraduate Course Change
Montana State University

"PLEASE HIGHLIGHT CHANGES"

Architecture
Department
College
Rubric
Course Number
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Professional Practice
Course Title (for catalog)

Professional Practice
Course Title (for schedule — maximum of 22 characters)

Frequency Offered:  □Annual  □Alternate Years  □If alternate, starting year:

Semesters(s) Offered:  □Summer  □Fall  □Spring

Credits by Mode of Instruction:  Lecture: 1  Seminar:______
Independent Study:  ______  Lab/Studio: 4
Recitation/Discussion:  ______

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by "and") or if only one is required (separated by "or"): ARCH 356

Co requisite Courses:

Course Description (40 word limit): If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

Person Initiating this Request: sj e-mail: stevej@montana.edu

Phone: 3921

Approval
You only need to obtain the 2 which are indicated with an asterisk(*)

Department Head  1/16/13  Academic Vice Provost:  1/15/13
Chair, Undergraduate Studies Committee  Date  Academic Vice Provost  Date
ARCH 313 413 PROFESSIONAL PRACTICE

F S 3 cr. LEC 2 STU 1

COREQUISITE: ARCH 456

Architecture as a process by which social, economic, and environmental ideas are realized. Topics include: marketing, business planning, project management, legal issues, delivery methods, technology, regulation, ethics, accessibility, interdisciplinary relations, community relations, client relations, and trends of practice. Notebook computer required.
Undergraduate Course Change
Montana State University
P LEASE HIGHLIGHT CHANGES

Architecture
Arts and Architecture
ARCH 457
Fall 2014
Department
College
Rubric
Course Number
Effective Semester

In the spaces below, please indicate only the changes from the current on-line catalog. Please attach a separate sheet indicating the reasons for any substantive (i.e., non-editorial) changes and clarifying anything that might be unclear from this cover sheet.

Architectural Design V
Course Title (for catalog)

Architectural Design V
Course Title (for schedule – maximum of 22 characters)

Frequency Offered:  ☒ Annual  ☐ Alternate Years  ☐ if alternate, starting year:

Semesters(s) Offered:  ☐ Summer  ☐ Fall  ☒ Spring

Credits by Mode of Instruction:  Lecture: 1  Seminar:
Independent Study:  Lab/Studio: 4
Recitation/Discussion:

Total Credits: 5

Prerequisite course(s) (When listing multiple prerequisites, please be clear about whether the courses are all required (separated by “and”) or if only one is required (separated by “or”):
ARCH 355

Co requisite Courses:

Course Description (40 word limit):  If there is a change in the course description, please attach the typed edited copy in which deletions are shown with a strikethrough (or highlighted in red) and additions are in bold (or highlighted in yellow).

See attached

Person Initiating this Request:  Steve
E-mail: steve@montana.edu

Phone: 3921

Approval
You only need to obtain the 2 which are indicated with an asterisk(*)

Department Head  1/16/13  College Dean or Assistant Dean  1/16/13
Date  Date
Chair, Undergraduate Studies Committee  Date  Academic Vice Provost  Date
ARCH 457 ARCHITECTURAL DESIGN V
On-Demand S 5 cr. LEC 1 STU 4
PREREQUISITE: ARCH 356.

—Advanced architectural design projects integrating site analysis, programming, building systems, and contemporary design theory. Emphasis placed on the inclusive synthesis of conceptual processes, analysis, preliminary design investigation, and design development. Notebook computer required.

-- Senior capstone course. Architectural design integrating building, landscape, and urban context using multi-story projects of medium scale and complexity with particular focus on mixed-use. Integrated topics include programming, structural and mechanical integration, ecologically-sound design, building envelope systems and building codes.