

# Architectural Engineering, BS



## University of Wyoming, 2016-17

Freshman Fall Semester			Hrs	Min	Grade	Notes
		USP First-Year Seminar	3		C	FY
ARE	1000	VISTA Studio I	1		C	
CHEM	1020	General Chemistry I *	4			PN
ENGL	1010	College Composition and Rhetoric	3		C	C1
MATH	2200	Calculus I **	4		C	Q
Credit hours subtotal:			<b>15</b>			

Freshman Spring Semester			Hrs	Min	Grade	Notes
ARE	1600	Architectural Design Studio I	3		C	
COJO	2010	Public Speaking	3		C	C2; substitutions are available; consult with an academic advisor.
ES	2110	Statics	3		C	
MATH	2205	Calculus II	4		C	
PHYS	1210	Engineering Physics I	4		C	PN
Credit hours subtotal:			<b>17</b>			

Sophomore Fall Semester			Hrs	Min	Grade	Notes
ARE	2000	VISTA Studio II	3		C	
ARE	2600	Architectural Design Studio II	3		C	
ES	2120	Dynamics	3		C	
ES	2410	Mechanics of Materials	3		C	
MATH	2210	Calculus III	4		C	
Credit hours subtotal:			<b>16</b>			

Sophomore Spring Semester			Hrs	Min	Grade	Notes
ARE	2410	Fundamentals of Building Performance	3		C	
ES	2310	Thermodynamics I	3		C	
ES	2330	Fluid Dynamics	3		C	
GEOL	1100	Physical Geology	4			Can substitute GEOL 1500 (Water, Dirt, & Earth's Env) or GEOL 1600 (Global Sustainability: Managing Earth's Resources).
STAT	2050	Fundamentals of Statistics	4			
Credit hours subtotal:			<b>17</b>			

This is a guide for course work in the major; actual course sequence may vary by student. Please refer to the online student degree evaluation, and consult with an academic advisor. • Not all courses are offered every semester and some electives may have prerequisites. Students should review the course descriptions in the *University Catalog* and consult with their academic advisor to plan accordingly.

### University of Wyoming requirements:

Students must have a minimum cumulative GPA of 2.0 to graduate. • Students must complete 42 hours of upper division (3000-level or above) coursework, 30 of which must be from the University of Wyoming. • Courses must be taken for a letter grade unless offered only for S/U. • University Studies Program (USP) Human Culture (H) and Physical & Natural World (PN) courses must be taken outside of the major subject, but can be cross-listed with the major.

### College of Engineering and Applied Science requirements:

Students must have a minimum cumulative GPA of 2.0 in all Engineering courses for graduation. • A grade of C or higher is required for all prerequisite courses. Students must also achieve a grade of C or better in all required mathematics courses.

### Architectural Engineering Program Notes:

Architectural engineering degree candidates must have an average grade point average of 2.0 ( C ) in civil and architectural engineering courses attempted at UW.

\* Requires MATH ACT  $\geq 23$ , MATH SAT  $\geq 600$ , Math Placement Exam  $\geq 3$ , or concurrent enrollment in MATH 1400, 1405, or 1450. (University standard)

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Junior Fall Semester			Hrs	Min Grade	Notes
ARE	3000	VISTA Studio III	3	C	C3
ARE	3200	Structural Analysis I	3	C	
ARE	3600	Architectural Design Studio III	3	C	
ART	3030	History of Architecture	3		H; cross listed with ARE 3030.
ES	2210	Electric Circuit Analysis	3	C	
		Junior Architectural Elective ***	3		
Credit hours subtotal:			<b>18</b>		

Junior Spring Semester			Hrs	Min Grade	Notes
ARE	3210	Civil Engineering Materials	3		
ARE	4600	Architectural Design Studio IV	3		
MATH	2310	Applied Differential Equations I	3	C	
		Architectural Option Elective ****	3		
		Junior Architectural Elective ***	3		
Credit hours subtotal:			<b>15</b>		

Senior Fall Semester			Hrs	Min Grade	Notes
		USP US & Wyoming Constitutions	3		V
		Architectural Option Electives ****	9		
		Math/Science Elective *****	3		
Credit hours subtotal:			<b>15</b>		

Senior Spring Semester			Hrs	Min Grade	Notes
		USP Human Culture	3		H
		Capstone Design Course	3		Choose from ARE 4720 (Structural Systems Design Project) or ARE 4740 (Mechanical Systems Design Project).
		Architectural General Elective *****	3		
		Architectural Major Elective *****	3		
		Architectural Option Elective ****	3		
Credit hours subtotal:			<b>15</b>		

**TOTAL CREDIT HOURS: 128**

### Architectural Engineering Program Notes con't:

\*\* Requires MATH ACT  $\geq 27$ , MATH SAT  $\geq 600$ , Math Placement Exam  $\geq 5$ , or  $\geq C$  in MATH 1405 or 1450. (University standard)

\*\*\* **Junior Electives.** Choose from: ARE 3300 (Building Electrical & Plumbing Systems), ARE 3400 (Heating, Ventilation & Air Conditioning of Buildings), or CE 3600 (Soil Mechanics).

\*\*\*\* **Architectural Option Electives.** Choose from the following:

**Structural:** ARE 4200 (Structural Analysis II), ARE 4250 (Structural Steel Design), ARE 4260 (Structural Concrete Design), ARE 4285 (Reinforced Masonry Design), ARE 4295 (Structural Timber Design), CE 4610 (Foundation Engineering), CE 4620 (Soil & Rock Slope Engineering), CE 4630 (Geotechnical Engineering), CE 4970 (Wyo DOT Design Squad Cooperative Experience), CE 5010 (Advanced Mechanics of Materials), CE 5200 (Advance Structural Analysis), CE 5220 (Structural Dynamics), CE 5240 (Structural Systems Design), CE 5260 (Prestressed Concrete Design), CE 5270 (Highway Bridge Engineering), CE 5280 (Behavior of Reinforced Concrete), and CE 5620 (Earth Retaining Structures & Slope Stability).

**Mechanical:** ARE 3360 (Fundamentals of Transport Phenomena), ARE 4330 (Building Electrical Systems), ARE 4390 (Building Safety & Fire Protection), ARE 4430 (HVAC Systems Analysis & Design), ARE 4490 (Modeling & Optimization of Energy Systems), ME 3040 (Thermodynamics II), ME 3170 (Machine Design), ME 4460 (Solar & Geothermal Engineering), and ME 4470 (Wind & Ocean Energy Engineering).

**NOTE:** Some courses have prerequisites not listed in the curriculum. Discuss with an academic advisor.

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## Architectural Engineering Program Notes con't

\*\*\*\*\* **Math/Science Elective.** Choose from: ATSC 2000 (Intro to Meteorology), CHEM 1030 (General Chemistry II), GEOL 1100 (Physical Geology), GEOL 1500 (Water, Dirt & Earth's Environment), GEOL 1600 (Global Sustainability), GEOL 2000 (Geochemical Cycles & the Earth System), GEOL 2080 (General Field Geology), LIFE 1010 (General Biology I), MATH 2250 (Elementary Linear Algebra), MATH 3310 (Applied Differential Equations II), MATH 4230 (Intro to Complex Analysis), MATH 4255 (Mathematical Theory of Probability), MATH 4440 (Intro to Partial Differential Equations), PHYS 1220 (Engineering Physics II), and STAT 4255 (Mathematical Theory of Probability).

\*\*\*\*\* **Architectural General Elective.** In addition to the courses listed in the Architectural Options Electives (structural or mechanical) and the Math/Science Electives, students can choose from: AMST 2400 (Intro to Historic Preservation), CE 2070 (Engineering Surveying), ENR 1000 (Energy & Society), ENR 2000 (Environment & Society), ESS 3480 (Environmental Change), FIN 2010 (Personal Finance & Investments), GEOL 4310 (Advanced Stratigraphy), MGT 1040 (Legal Environment of Business), MGT 2000 (Intro to Business), and MGT 3210 (Management & Organization).

\*\*\*\*\* **Architectural Major Elective.** Either option (structural or mechanical) can choose from: AMST 4900 (Field Studies in Historic Preservation), AMST 5400 (American Built Environment), ARE 4030 (History of Green Building), ARE 4040 (Historic Preservation & Sustainability), ARE 5700 (Architectural Engineering Problems I), CE 3300 (Hydraulic Engineering), CE 3400 (Intro to Environmental Engineering), CE 3500 (Transportation Engineering), CE 3600 (Soil Mechanics I), CE 4820 (Groundwater & Drainage Engineering), CE 4970 (WY DOT Design Squad Cooperative Experience), CE 4975 (Civil & Architectural Engineering Internship), ENR 4600 (Campus Sustainability), FCSC 5101 (Special Topics in Family & Consumer Science), ME 3040 (Thermodynamics II), ME 3170 (Machine Design), ME 4460 (Solar & Geothermal Engineering), and ME 4470 (Wind & Ocean Energy Engineering).