

Department of

Architecture & Construction



Garth Jensen, Department Chair

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Department of Architecture and Construction

The Architecture and Construction Industry encompasses a wide range of career options. There are many excellent employment opportunities within this dynamic and growing industry. The Educational programs offered by the Architecture and Construction Department are designed to prepare students to fulfill challenging employment opportunities within the industry.

The department offers two degree programs; an Applied Associates of Science Degree in Architectural Technology (345) and an Integrated Bachelor of Science Degree in Construction Management (605). Both degrees offer a range of options that will allow students to customize their course of study to fulfill future employment ambitions. Both degrees also require a high level of academic and technical abilities and students should have developed good math, science, art, and manual skills prior to enrollment in the program.

Graduation Requirements

To receive either an AAS in Architectural Technology or a BS in Construction Management, a student will need to complete the prescribed course of study with a minimum GPA of 2.25 or higher. No grade less than a C- will be accepted for any major course requirement. Students wishing to complete a BS in Construction Management are required to complete at least two semester long full time internships (Const 398 & Const 498). The internships are usually completed on the students "off track" between their Sophomore/ Junior and Junior/ Senior years. Student who complete an AAS in Architectural Technology are also required to complete an internship.

General Interest Courses. The department also offers woodworking classes or general interest open to the student body and community.

AAS in Architectural Technology

Basic Education Requirements

I. Communication:	II. Computation:	III. Human Relations:	IV. Related Skills:	Religion Requirement:
Take 1 course:	Take 1 course:	Take 1 course:	Take 1 course:	Take 4 Credits
ENG 111 3	MATH 108 3	AGBUS 238 3	COMM 102 3	REL 121 2
ENG 111C 3	MATH 110 3	AMHER 170 3	ENG 311 3	REL 122 2
		ANTH 101 3	ENG 311C 3	REL 221 4
		B 370 3	ENG 312 3	AND
		CHILD 210 3	ENG 312C 3	Take 3 credits:
		GEOG 120 3	ENG 316* 3	REL 100 2
		HIST 120 3	ENG 316C* 3	REL 130 2
		HIST 121 3		REL 211 3
		HIST 201 3		REL 215 2
		HIST 202 3		REL 234 2
		POLSC 110 3		REL 235 2
		POLSC 170 3		REL 261 2
		PSYCH 111 3		REL 264 2
		PSYCH 201 3		REL 301 3
		SOC 111 3		REL 301H 3
		SOC 112 3		REL 302 3
		SOC 323 3		REL 302H 3
		SOC 357 3		REL 324 3
				REL 333 2
				REL 341 2
				REL 342 3
				REL 351 2
				REL 352 2
				REL 360 4
				REL 370 2
				REL 431 2
				REL 471 3
				REL 475 2

Total GE Credits=19

Major Requirements

Take these courses:	Take 6 credits:	Take 1 course:	Program Notes:
ARCH 100 2	<i>(In the requirement listed below, if Const 210 is taken you must also take the lab (Const 212) for a total of 3 credits)</i>	ART 101 3	<i>Const 298R & 398R should be taken during the students off track.</i>
ARCH 102 1		ART 102 2	
ARCH 110 3			* For Basic Skills, English 316 & 316C are the preferred course for this major.
ARCH 160 3		CONST 210 2	Take these courses:
ARCH 210 3		CONST 212 1	GEOL 102 1
ARCH 260 3		CONST 220 3	GEOL 104 3
ARCH 270 3		CONST 230 3	4
ARCH 280 3		CONST 240 3	Or
CONST 120 3		CONST 250 3	Take these courses:
CONST 330 3		CONST 298R 1-2	GEOL 111 3
CONST 360 3	CONST 310 3	GEOL 111L 1	
MATH 111 2	CONST 320 2	4	
32	CONST 340 3	Or	
Take this course:	CONST 390R 0.5	Take these courses:	
CONST 398R 2	HFED 140 3	PH 105 3	
2	HORT 230 3	PH 105L 1	
	ME 115 2	4	
	6		

Total Major Credits=46

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Summer---- YES

Summer-Fall---- YES

BS in Construction Management

General Education Requirements

I. Reading and Writing: <i>Take 1 course:</i> ENG 111 3 ENG 111C 3 AND <i>Take 1 course:</i> ENG 312 3 ENG 312C 3 ENG 316 3 ENG 316C 3 II. Mathematics: <i>Take 1 course:</i> MATH 108 3 MATH 110 3 III. Basic Skills: <i>Take 1 course:</i> CIT 140 3 COMM 102 3 COMM 150 3 IV. Arts: <i>Take 1 course:</i> HFED 140 3 HORT 230 3 AND <i>Take this course:</i> FA 100 0-1	V. Letters: <i>Take 1 course:</i> CHIN 347 3 ENG 250 3 ENG 251 3 ENG 331 3 ENG 332 3 ENG 333 3 ENG 334 3 ENG 335 3 ENG 351 3 ENG 352 3 ENG 353 3 ENG 354 3 ENG 362 3 ENG 373 3 FR 202 3 GER 202 3 LANG 202 3 PH 314 3 PHIL 110 3 PHIL 201 3 PHIL 202 3 PHIL 313 3 PHIL 314 3 PHIL 315 3 RUSS 340 3 SPAN 202 3 SPAN 302 3	VI. Biological Science: <i>Take 4 credits:</i> AGRON 122 4 AGRON 270 4 BIO 100 3 BIO 102 1 BIO 118 4 BIO 120 4 BIO 130 4 BIO 150 3 BIO 150L 1 BIO 176 4 BIO 200 4 BIO 202 4 BIO 208 4 BIO 221 3 BIO 222 1 BIO 230 4 BIO 250 4 BIO 264 4 BIO 265 4 BIO 268 8 VII. Physical Science: <i>Take these courses:</i> GEOL 102 1 GEOL 104 3 OR GEOL 111 3 GEOL 111L 1 OR PH 105 3 PH 105L 1	VIII. American Institutions: <i>Take 1 course:</i> ECON 111 3 IX. Social Science: <i>Take 1 course:</i> ANTH 101 3 CHILD 210 3 ECON 111 3 ECON 112 3 ED 270 3 GEOG 120 3 HIST 201 3 HIST 202 3 PHIL 203 3 PHIL 204 3 POLSC 110 3 POLSC 170 3 PSYCH 111 3 PSYCH 201 3 SOC 111 3 SOC 112 3	Religion Requirement: (Book of Mormon) <i>Take these courses:</i> REL 121 2 REL 122 2 OR <i>Take this course:</i> REL 221 4 AND (Scripture Based Courses) <i>Take 6 credits:</i> REL 211 3 REL 212 2 REL 301 3 REL 301H 3 REL 302 3 REL 302H 3 REL 324 3 AND (Other Religion Courses) <i>Take 4 credits:</i> REL 100 2 REL 130 2 REL 215 2 REL 234 2 REL 235 2 REL 261 2 REL 264 2 REL 333 2 REL 341 2 REL 342 3 REL 351 2 REL 352 2 REL 360 4 REL 370 2 REL 431 2 REL 471 3 REL 475 2
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Total GE Credits=46

Major Requirements

Take these courses: (Students are required to complete 2 credits each of Const 398 and Const 498R during off track.) ARCH 100* 2 ARCH 102* 1 CONST 120 3 CONST 220 3 CONST 310 3 CONST 320 2 CONST 330 3 CONST 360 3 CONST 398R 1-2 CONST 420 3 CONST 430 3 CONST 440 3 CONST 498R 1-2 MATH 111 2 <hr/> 35	Repeat 4 times: CONST 390R 0.5 <hr/> 2 Take 3 classes: (In the requirement listed below, if Const 210 is taken you must also take the lab (Const 212) for a total of 3 credits) ARCH 110 3 ARCH 280 3 CONST 210*** 2 CONST 212*** 1 CONST 230 3 CONST 240 3 CONST 250 3 <hr/> 9	Program Notes: Students majoring in Construction Management are encouraged to select either the Business Management Minor or two Clusters from a "Recommended Clusters" list, which includes such things as Commercial Construction, Residential Construction, Architecture, and Business Management. Students wishing to "custom-design" Clusters will need to counsel with their Advisors. Take 1 option: Option A: Business Management Minor - 24 credits OR Option B: 1 Business Management Cluster (12 credits) and 1 Construction Management Cluster Elective (12 credits) for a total of 24 credits. * English 316 or 316C are the preferred GE courses for this major. **Architecture 100 & 102 must be taken concurrently. ***Construction 210 & 212 must be taken concurrently.
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Total Major Credits=46

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Summer---- YES

Summer-Fall---- YES

Course Descriptions

Credits*

ARCH 100 Construction Documents

(2:3:0)

Prerequisite: Arch 102 must be taken concurrently
Introduction to blueprint reading and UDS symbology, CSI specifications, construction terminology, codes, and the construction process. Evaluation of working drawings, specifications, and codes. Arch 102 Lab must be taken concurrently with Arch 100. (Fall, Winter, Summer)

ARCH 102 Construction Documents Lab

(1:0:1)

Prerequisite: This class must be taken concurrently with ARCH 100
This class is the lab section for Arch 100 and will give the students the opportunity for hands-on applications using construction documents, specifications, and building codes. (Fall, Winter, Summer)

ARCH 110 Architectural Computer Aided Design

(3:3:3)

Prerequisite: Arch 100 and Arch 102, Const 120 or concurrent enrollment.
This is an introductory course in the use of computer aided design in architecture. Through the use of computer graphics systems and industry standard software, students will learn to draw and develop residential construction documents and building models. Drawings include floor plans, sections, elevations, details, plot plans, and schedules. (Fall, Winter, Summer)

ARCH 160 Architectural Design and Drafting

(3:2:4)

Prerequisite: Arch 100 and Arch 110 (Arch 110 could be taken simultaneously)
Construction document preparation of residential and commercial projects using the design process, sketching, and manual drafting skills. The student will learn basic design, sketching, and drafting skills in order to produce residential and commercial construction documents. (Winter, Summer)

ARCH 210 Advanced Architectural Computer Aided Design

(3:2:4)

Prerequisite: Arch 100, Arch 102, Arch 110, Arch 160
This is an advanced course in the use of computer aided design in architecture. Through the use of computer graphics systems and industry standard software (AutoCAD and Architectural Desktop) students will learn to develop and refine a complete set of construction documents. This course will also examine various construction materials and methods and their relationship to specific design intentions. The course will begin with the initial functional/conceptual diagram and examine its refinement through building codes, structural principles, material properties, and system integration.

Learning is project focused with the various software commands and features being taught as needed to complete the assigned projects. Students will work both individually and in groups. (Fall, Winter)

ARCH 260 Rendering and Perspective

(3:3:3)

Prerequisite: Arch 100, Arch 102, Arch 160
Rendering and perspective is a course dealing with basic perspective fundamentals required for freehand perspective drawing. It also includes the technical principles of perspective required to layout precise perspective constructions. The course will help build basic light, color, and rendering vocabulary required for quality drawing presentations. (Fall, Winter)

ARCH 270 Specifications

(3:3:0)

Prerequisite: Arch 100, Arch 102, Arch 160, Const 120, Sophomore status
This course will provide in-depth information about the preparation and content of documents within a project manual. It will define and explain different types of contracts and specifications. How to write specifications will be taught and practiced during the course of the class. It will include, but not limited to, subjects like coordinating drawings and specifications, bidding requirements, construction contracts, methods of specifying, substitutions, and warranties. This information is required to take and pass the Construction Document Technology (CDT) certification test. (Fall, Winter)

ARCH 280 Building Information Modeling(BIM)

(3:2:4)

Prerequisite: Arch 110, Const 120, and Const 330
This is an advanced architectural CAD course using current Building Information Modeling (BIM) software integrating 3D graphics and building component databases. Each building component is represented by smart objects that know how to relate to one another and can contain extensive information about their characteristics. In this course you will learn to use this software to model buildings and to extract information for estimating and facility management purposes. In addition, 2D construction documents, static perspective views and renderings will be extracted from the model. (Fall, Winter)

CONST 100 Basic Woodworking

(3:2:2)

Fee: \$40.00
Basic woodworking is a study of woodworking skills for both the novice and more advanced woodworker. The course will study project planning and design, wood and wood products, safe operation of hand and power tools, and joinery techniques. (As schedule allows)

CONST 110 Home Maintenance

(2:2:2)

Fee: \$10.00
Prerequisite: For non-majors only
A basic consumer course to help future homeowners understand how the basic structural, mechanical, and electrical systems work in a home. Students will gain a better understanding of modern home ownership and home maintenance through classroom and laboratory experience. (As schedule allows)

CONST 120 Framing Systems

(3:2:2)

Prerequisite: An in-depth understanding of construction documents or concurrent enrollment in Arch 100 is necessary.
A study of construction materials and methods of constructing structures. Classroom, lab experiences and construction site tours give students an understanding of building frame parts, procedures and applications of materials. Construction tool safety, codes, blueprint reading and application, conventional and innovative framing technology for residential and commercial construction will be emphasized. (Fall, Winter, Summer)

CONST 200 Advanced Woodworking

(3:2:4)

Prerequisite: Const 100
Advanced woodworking is a study of practices, materials, methods, and techniques used in the design and construction of fine wood furniture. Emphasis will be placed on materials and fine joinery techniques. (As schedule allows)

CONST 210 Finishing Systems (2:2:0)

Prerequisite: Const 120, Arch 100, Arch 102. Must be taken concurrently with Const 212 (lab)

A study of construction materials and methods of exterior and interior building finishing systems. Classroom and lab experiences give students an understanding of finishing procedures and applications of materials. Construction materials, terminology, codes, blueprint reading, installation methods, and material quantity takeoffs will be emphasized.
(Fall, Summer (even years))

CONST 212 Finishing Systems Lab (1:0:2)

Prerequisite: This course must be taken concurrently with Const 210, Arch 100, Arch 102

This course will provide the opportunity for hands-on application using methods and materials discussed in Const 210.
(Fall, Summer (even years))

CONST 220 Concrete and Masonry Construction (3:2:3)

Prerequisite: Arch 100, Arch 102

A study of concrete construction technology including footings, foundations, cement types, admixtures, mixing, forming, reinforcing, placement, curing, testing, hot and cold weather applications. Materials and methods used in modern masonry construction. Applicable building codes will be reviewed.
(Fall, Winter, Summer)

CONST 230 Mechanical Environmental Systems (3:2:2)

Prerequisite: Arch 100, Arch 102

Materials design, installation, and applications of building service systems, including supply systems, waste removal systems; heating ventilation, air conditioning; heating loads, air distribution, equipment selection; energy efficient, and solar construction; building codes.
(Fall, Winter, Summer)

CONST 250 Steel Structural Systems (3:2:2)

A study of steel construction technology including steel frame construction of light gauge and heavy structural and tube steels. Classroom and lab experiences will include construction methods, materials, connection design, prints, symbols, tools and equipment, joining methods, welding processes and skills, coded, specifications, quality, safety and nomenclature.
(Fall, Winter)

CONST 290 Special Problems (1-4:0:0)

Prerequisite: Approved after consultation with Instructor in charge.

Selected problem solving in a variety of construction and architectural areas. May involve special assignment, laboratory, and on-the-job experience.

CONST 298R Internship (1-2:0:0)

Prerequisite: For Students with less than 60 credit hours

An internship is a cooperative program between BYU-Idaho Architecture and Construction Department and approved Experience Providers (employers). Professional internships correlate actual work experience in the building construction industry and the architecture and construction coursework. Internships approved by the department internship coordinator provide students with knowledge of career opportunities and actual work experience in preparation for employment after graduation. The ideal internship would take place during the student's off-track semester and requires 240 hours of quality work experience for each credit earned. A maximum of two credit hours are available for each of the three internship courses.

Two elective credits, course not required for major. General work experience in building construction or a related field. Typically taken between the freshman and sophomore years or for those students with less than 60 credit hours.
(Fall, Winter, Summer)

CONST 310 Construction Management (3:2:0)

Prerequisite: Arch 100, Arch 102

An introduction to organizing, controlling, and directing operations of construction companies including business ownership and management, company organization, business methods, bonds, insurance, safety, building and land use regulations, and labor relations.
(Fall, Winter, Summer)

CONST 320 Construction Safety (2:2:0)

Prerequisite: Arch 100, Arch 102

This course introduces students to OSHA policies, procedures, and standards, as well as construction safety and health principles. Topics include scope and application of OSHA construction standards. Special emphasis will be placed on the most common safety hazards in the construction industry. Upon successful course completion, the student will receive an OSHA construction safety and health 30-hour course certification card.
(Fall, Winter, Summer)

CONST 330 Construction Estimating (3:3:3)

Prerequisite: Const 120, Arch 100

The purpose of Const 330 (Construction Estimating) is to introduce the student to the principles of construction cost estimates, including organizing and planning an estimate, developing material and labor databases, preparing accurate quantity takeoffs, and developing an understanding of overhead and profit.
(Fall, Winter, Summer)

CONST 340 Fundamentals of Land Surveying (3:2:4)

Prerequisite: Math 111

Theory and use of instruments dealing with measurements pertaining to plane surveying. Application of surveying methods of practical problems.
(Fall)

CONST 360 Statics & Strength of Materials (3:3:0)

Prerequisite: Arch 100, Arch 102, Math 111, Const 120

The course provides an introduction to force systems in static equilibrium and an elemental understanding of strength of material, or the relationship between applied loads and the internal forces and deformations induced in the structural element. Major topics that are covered in the course include forces, moments, couples, free body diagrams, trusses, frames, centroids, stress, strain, deformation and load, shear and moment diagrams.
(Fall, Winter, Summer)

CONST 390R Construction Seminar (0:5:1:0)

Prerequisite: Completed 45 hours coursework. Sophomore status
Const 390R is a junior/senior level lecture series which will introduce students to relevant topics and leaders within the construction industry. Possible topics to be covered include: estimating, scheduling, safety, team building, sales, and marketing. Additional topics such as developing internship and employment opportunities, interviewing, resume and letter writing, and salary negotiations, will also be covered.
(Fall, Winter, Summer)

CONST 398R Junior Internship

(1-2:0:0)

Prerequisite: For students with less than 90 credit hours.

An internship is a cooperative program between BYU-Idaho Architecture and Construction Department and approved Experience Providers (employers). Professional internships correlate actual work experience in the building construction industry and the architecture and construction coursework. Internships approved by the department internship coordinator provide students with knowledge of career opportunities and actual work experience in preparation for employment after graduation. The ideal internship would take place during the student's off-track semester and requires 240 hours of quality work experience for each credit earned. A maximum of two credit hours are available for each of the three internship courses.

Two credits, course required for construction management major. Construction intern with expanded experiences and management opportunity. Typically taken between the sophomore and junior years or for those students with less than 90 credit hours.
(Fall, Winter, Summer)

CONST 400 Advanced Estimating

(3:3:3)

Prerequisite: Arch 100, Const 330

The purpose of Const 400 Advanced Estimating is to help students contemplating a career as an estimator to further gain knowledge and skills required to estimate in building construction. An in-depth analysis of estimating methods, fundamental skills, the estimator's responsibilities and computer software applications for construction cost estimates, are covered. Evolving estimating methods will also be introduced.

(Fall, Winter, Summer)

CONST 420 Construction Scheduling

(3:3:3)

Prerequisite: Arch 100, Arch 102, Const 310, Const 330

This course is an introduction to concepts of construction project scheduling including: planning and developing efficient construction schedules, methods of preparing construction schedules, and using schedules to efficiently manage job resources and control costs.

(Fall, Summer)

CONST 430 Construction Law

(3:3:0)

Prerequisite: Arch 100, Arch 102, Const 310, Const 330

The purpose of this course is to provide an introduction to contract law and the legal requirements and regulations associated with the operation of a construction company.

(Fall, Winter, Summer (even years))

CONST 440 Construction Project Management

(3:3:0)

Prerequisite: Arch 100, Arch 102, Const 310, Const 420 or concurrent registration

Construction Project Management is an introduction to onsite management and control of construction projects including overall project management, the management of people, materials and time, and the management of financial resources.

(Fall, Winter, Summer)

CONST 460 Residential Construction Practices

(2:2:0)

Prerequisite: Arch 100, Arch 102, Const 120, Const 220, and Const 330.

An overview of construction management practices in residential construction. Focuses on construction and contracting methods, productivity, work activity sequencing, and company organizations. Leadership and communication skills, construction ethics will also be covered.

(Fall, Summer)

CONST 498 Construction Internship

(1-2:0:0)

Prerequisite: Final internship prior to employment

An internship is a cooperative program between BYU-Idaho Architecture and Construction Department and approved Experience Providers (employers). Professional internships correlate actual work experience in the building construction industry and the architecture and construction coursework. Internships approved by the department internship coordinator provide students with knowledge of career opportunities and actual work experience in preparation for employment after graduation. The ideal internship would take place during the student's off-track semester and requires 240 hours of quality work experience for each credit earned. A maximum of two credit hours are available for each of the three internship courses.

Two credit course required for construction management major. Construction intern experience combining classroom and on-the-job knowledge from past experiences. Intended to be the final internship prior to employment. Focus should be given to those experience providers and professional interests that the student would consider for employment following graduation.

(Fall, Winter, Summer)