

Course Outcomes Matrix

Course Title: Construction Science Seminar I

Prefix: CONS

Course Number: 1231

Course Description (from the catalog): Informational seminar meeting once a week to allow faculty and construction science majors and minors to discuss opportunities in the construction industry. This course is open to all Majors and Minors.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title:	Construction Science Seminar II
Prefix:	CONS
Course Number:	1241
Course Description (from the catalog):	An advanced seminar meeting once a week directed to the study of research readings, discussions and on-site field work in construction science. This course is open to all Majors and Minors.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title:	Managing Construction Operations
Prefix:	CONS
Course Number:	3533
Course Description (from the catalog):	Managing construction operations from concepts of project selection, estimating, bidding, scheduling, subcontracting practices, cost tracking, project documentation, construction bonds, insurance, payments and the elements of close out. Special emphasis on the development of professional communication skills through student prepared multi-media presentations.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and	T		

alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). (<i>ACCE Standards and Criteria for Accreditation</i>)			
6. Other:			

Course Outcomes Matrix

Course Title: Surveying and Soils

Prefix: CONS

Course Number: 3633

Course Description (from the catalog): Principles of surveying; use of surveying instruments, topographical surveys and traverses; field practice and computations. Basic considerations of site management and soils considerations for construction projects.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		I
6. Other:			

Course Outcomes Matrix

Course Title: Subdivision and Quantification of Work

Prefix: CONS

Course Number: 3733

Course Description (from the catalog): Construction project planning with emphasis on subdivision and quantification of work; quantity take-off using plans and specifications.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	I
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Construction Internship

Prefix: CONS

Course Number: 4403

Course Description (from the catalog): Approved summer internship in the building construction industry.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	I
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
6. Other:			

Course Outcomes Matrix

Course Title:	Residential Construction
Prefix:	CONS
Course Number:	4413
Course Description (from the catalog):	Residential construction processes, scheduling, subcontracting, financing, estimating, project control and current trends in site selection, design and energy efficiency.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Commercial Construction

Prefix: CONS

Course Number: 4423

Course Description (from the catalog): Approved Focus on the project management of commercial construction projects ranging from high rise office buildings to small tilt-wall and pre-engineered buildings; topics include project acquisitions, mobilization, management, and close out.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Industrial Construction

Prefix: CONS

Course Number: 4433

Course Description (from the catalog): Introduction to industrial construction with an emphasis on process and power plant construction from a field office management perspective.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title:	Highway/ Heavy Construction
Prefix:	CONS
Course Number:	4443
Course Description (from the catalog):	Focus on the various aspects of highway/heavy construction; topics include earthmoving and paving equipment and utilization principles, pavement design and placement methods, unit price bidding methods, and a project case study.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title:	Facilities Management
Prefix:	CONS
Course Number:	4453
Course Description (from the catalog):	Focus on the various aspects of facilities management; includes budgeting for operations and management, energy management, change management, design-build changes, in house versus out source maintenance, and contracting options.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
6. Other:			

Course Outcomes Matrix

Course Title: Construction Delivery Systems

Prefix: CONS

Course Number: 4553

Course Description (from the catalog): Methods and management techniques utilized in the building process.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title:	Construction Labor and Safety
Prefix:	CONS
Course Number:	4603
Course Description (from the catalog):	Constitutional and legal basis of labor relations in the construction industry; craft and trade unions; dual and merit shop operations; contractor-union agreements; safety on the job site; OSHA and related regulations.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
6. Other:			

Course Outcomes Matrix

Course Title:	Construction Law and Ethics
Prefix:	CONS
Course Number:	4633
Course Description (from the catalog):	Approved Delineation of contracts used in the construction industry; emphasis on understanding the functions and interrelationships of documents; review of law applied to the industry; application of the contract, and law to case studies; introduction to resources and analytical process used by construction professionals; ethics in the construction industry.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title:	Scheduling and Mobilization
Prefix:	CONS
Course Number:	4753
Course Description (from the catalog):	Project scheduling procedures to include computer applications and resource leveling; project types, office and field planning required to initiate the work; equipment and construction methods selection processes and an examination of contractual mandates specified.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
6. Other:			

Course Outcomes Matrix

Course Title: Construction Project Controls

Prefix: CONS

Course Number: 4773

Course Description (from the catalog): Introduction of students to construction related financial documents; includes schedule of values, labor and operations cost reports, and construction budgets, trace construction dollar flow from time sheet to balance sheet.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Construction Industry Career Options

Prefix: CONS

Course Number: 4821

Course Description (from the catalog): Graduating senior seminar for Construction Science majors to provide an introduction to industry options with an emphasis on ownership of a business.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Starting a Construction Business

Prefix: CONS

Course Number: 4831

Course Description (from the catalog): Graduating senior seminar for Construction Science majors to expose students to the basics of setting up a business.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Special Topics

Prefix: CONS

Course Number: 4973

Course Description (from the catalog): The study of specialized fields of construction science as they relate to contemporary issues. Topics vary by semester. Course may be repeated for credit when topic varies.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>			
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
6. Other:			

Course Outcomes Matrix

Course Title: Independent Study

Prefix: CONS

Course Number: 4993

Course Description (from the catalog): Individual reading, research and/or field work in selected topics.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>			
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
6. Other:			

Course Outcomes Matrix

Course Title: Visual Communications

Prefix: ARCH

Course Number: 1233

Course Description (from the catalog): Multimedia techniques in graphics emphasizing orthographic projections, perspective, shade and shadow, and freehand drawing.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>			
6. Other:			

Course Outcomes Matrix

Course Title:	Architecture Design I
Prefix:	ARCH
Course Number:	1253
Course Description (from the catalog):	Study of the basic elements of design in both two and three dimensions.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>			
6. Other:			

Course Outcomes Matrix

Course Title: Introduction to Multimedia

Prefix: ARCH

Course Number: 1273

Course Description (from the catalog): Development of computer literacy with emphasis on document preparation and basic computer graphics.
 **(ARCH 1315)

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
6. Other:			

Course Outcomes Matrix

Course Title: Computer Aided Design

Prefix: ARCH

Course Number: 2223

Course Description (from the catalog): Introduction to the range and potential of computer aided design and electronic media in problem solving and conceptual design.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
6. Other:			

Course Outcomes Matrix

Course Title: History and Theory of Architecture II

Prefix: ARCH

Course Number: 2243

Course Description (from the catalog): Survey of the development of architecture from the Renaissance period to the present. **(ARCH 1302)

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>			
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>			
6. Other:			

Course Outcomes Matrix

Course Title: Construction Materials and Methods I

Prefix: ARCH

Course Number: 2273

Course Description (from the catalog): Introduction to the properties and uses of natural and manufactured building materials and the effect of the nature of materials upon design.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Construction Estimating

Prefix: ARCH

Course Number: 3013

Course Description (from the catalog): Classification of work and quantity survey techniques. Basic estimating applied to simple construction projects. Creation of bills of materials and quantity take-offs

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Construction Materials and Methods II

Prefix: ARCH

Course Number: 3283

Course Description (from the catalog): Emphasis on systems of building structures and on the interrelationships among the components of the systems, the assembly processes and project control.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Structures I

Prefix: ARCH

Course Number: 3293

Course Description (from the catalog): A study of theory of various structural concepts. Emphasis placed on statics and strength of materials. Prerequisite: General Physics (6 semester hours).

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
6. Other:			

Course Outcomes Matrix

Course Title: Environmental Systems I

Prefix: ARCH

Course Number: 3453

Course Description (from the catalog): Fundamentals of environmental systems for buildings with emphasis on heating, cooling and distribution systems.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	I
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor's role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
6. Other:			

Course Outcomes Matrix

Course Title:	Structures II
Prefix:	ARCH
Course Number:	4433
Course Description (from the catalog):	A study of theory, behavior and design of structural systems in steel and timber. Prerequisite: ARCH 3294. <i>(This course was renumbered to 3293 in the Spring 2006 to meet NAAB requirements and was approved by the Prairie View A&M University Academic Council.)</i>

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	I
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
6. Other:			

Course Outcomes Matrix

Course Title: Environmental Systems II

Prefix: ARCH

Course Number: 3463

Course Description (from the catalog): Fundamentals of lighting, electric circuits and wiring design, sound systems and signaling devices. An introduction to the principles of acoustics.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	I
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>	T		
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	I
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
6. Other:			

Course Outcomes Matrix

Course Title: Construction Documents and Codes

Prefix: ARCH

Course Number: 4443

Course Description (from the catalog): The organization, development and preparation of a complete set of working drawings using computer aided design. Prerequisite: ARCH 2223.

Course Learning Outcomes	Competencies (T, R, I)		
	T competency is taught	R Competency is reinforced	I Competency is utilized/ integrated
1. General Education (Communications, social sciences and humanities): The ability to communicate both orally and in writing, and have an understanding of human behavior. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
2. Math and Science (Mathematics and Physical Science): The ability to apply the principles of mathematics, statistics and computer science. The understanding of the behavior of materials, equipment and methods used in construction combined with knowledge of physics, chemistry, geology and environmental sciences. <i>(ACCE Standards and Criteria for Accreditation)</i>		R	
3. Business and Management: The knowledge to effectively manage the principle resources of the industry: people and money. Understanding the fundamentals of the free-enterprise system to include accounting, finance, business regulations, contract law, labor law, and marketing. <i>(ACCE Standards and Criteria for Accreditation)</i>			
4. Construction Science: An understanding of the contribution of the design process. The ability to communicate with the design professionals and participation in the planning phase of design-build projects. The ability to solve practical communication problems. <i>(ACCE Standards and Criteria for Accreditation)</i>	T	R	
5. Construction: Involvement and understanding of both office and field activities to include effective management of personnel, materials, equipment, costs and time. The understanding of the contractor’s role as a member of a multi-disciplinary team, the assessment of project risk and alternative construction methods (Traditional Design-Bid-Build, Construction Manager and Design-Build). <i>(ACCE Standards and Criteria for Accreditation)</i>	T		1
6. Other:			

Course/Program Learning Outcomes Alignment and Review

Degree Program Outcomes Matrix

		Program Learning Outcomes and Measure							
		1. General Education	2. Math and Science	3. Business and Management	4. Construction Science	5. Construction	6. Other	7.	8.
Course Prefix, Number	Course Title								
CONS 1231	Construction Science Seminar I	T	R	R	R	T			
CONS 1241	Construction Science Seminar II	T	R	R	R	T			
CONS 3533	Managing Construction Operations	T	TR	R	R	T			
CONS 3633	Surveying and Soils	TRI	TR		R	TI			
CONS 3733	Subdivision and Quantification of Work	R	RI	R	TR	T			
CONS 4403	Construction Internship	TR	R	R	RI	TRI			
CONS 4413	Residential Construction	R	R	TR	R	T			
CONS 4423	Commercial Construction	R	R	TR	TR	R			
CONS 4433	Industrial Construction	R	R	TR	TR	T			
CONS 4443	Highway/Heavy Construction	R	R	TR	TR	T			
CONS 4453	Facilities Management	R	R	TR	TR	R			
CONS 4553	Construction Delivery Systems	T	R	TR	TRI	T			
CONS 4603	Construction Labor and Safety	T	R	TRI	R	TRI			
CONS 4633	Construction Law and Ethics	T	R	TRI	R	T			
CONS 4753	Scheduling and Mobilization	T	R	TR	TR	TRI			
CONS 4773	Construction Project Controls	T	R	TR	TR	T			
CONS 4821	Construction Industry Career Options	R		R	TR	T			
CONS 4831	Starting a Construction Business	T	R	TR	TR	T			

CONS 4973	Special Topics				TR	TR			
CONS 4993	Independent Study				TR	TR			
ARCH 1233	Visual Communication	T			T	R			
ARCH 1253	Architecture Design I	T			T	R			
ARCH 1273	Introduction to Multimedia	T			TR	TR			
ARCH 2223	Computer Aided Design	T	TRI	R	TR	R			
ARCH 2243	History and Theory of Architecture II	TR			R				
ARCH 2273	Construction Materials and Methods I	T	TR	TR	TR	T			
ARCH 3013	Construction Estimating	T	TR	TRI	TR	T			
ARCH 3283	Construction Materials and Methods II	T	TR	TR	TR	T			
ARCH 3293	Structures I	R	TR	R	R	TR			
ARCH 3453	Environmental Systems I	RI	TR	R	TRI	TR			
ARCH 3463	Environmental Systems II	RI	TR	T	TRI	TR			
ARCH 4433	Structures II	R	TR	R	R	TR			
ARCH 4443	Construction Documents and Codes	R		R	TR	TI			

T – Competency is taught R – Competency is reinforced

I – Competency is utilized/integrated