Indiana State University
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BS in Architectural Engineering Technology Curriculum Map

Courses and Activities Mapped to BS in Architectural Engineering Technology Outcome Set

Courses and Learning Activities	1: Students will employ concepts of architectural theory and design in a design environment.		2: Students will utilize instruments, methods, software, and techniques that are appropriate to produce A/E documents and presentations				3: Students will utilize measuring methods that are appropriate for field, office, or laboratory						4: Students will apply fundamental computational methods and elementary analytical techniques in sub-disciplines Students will apply fundamental computational methods and elementary analytical techniques in sub-disciplines related to architectural engineering		5: Students will perform economic analyses and cost estimates related to design, construction, and maintenance of building systems						6: Students will select appropriate materials and practices for building construction									7: Students will apply principles of building codes, regulations, and ethics in architectural practice			
	1.1 Students will synthesize information and generate concepts and/or responses Students will synthesize information and generate multiple concepts and/or multiple design responses to programmatic requirements.	1.2 Students will demonstrate creative thinking and originality Students will demonstrate creative thinking and originality through presentation of a variety of ideas, approaches, and concepts.	2.1 Students will produce competent contract documents Students will produce competent contract documents including coordinated drawings, schedules, and specifications appropriate to project size and scope, and sufficiently extensive to show how design solutions and interior construction are related.	2.2 Students will deliver presentations concerning project delivery Students will deliver effective presentations concerning complete project delivery.	2.3 Students will write technical business letters and reports Students will write technical business letters and reports using professional English.	2.4 Students will identify detail hierarchies, scale, and content.	3.1 Students will effectively apply the elements and principles of design to two dimensional design solutions.	3.2 Students will effectively apply the elements and principles of design to three dimensional design solutions.	3.3 Students will demonstrate layout and alignment control using surveying equipment.	3.4 Students will use surveying skills to organize and develop a site.	3.5 Students will analyze static forces in structures.	3.6 Students will apply soil mechanics to excavations and foundations.	4.1 Students will analyze heat flow through wall assemblies.	4.2 Students will solve problems using trigonometry as it relates to surveying.	5.1 Students will create quantity takeoffs for residential and commercial projects.	5.2 Students will identify and apply labor and equipment productivity factors.	5.3 Students will identify and estimate direct and indirect job costs.	5.4 Students will use estimating software applications to prepare and submit construction bids.	5.5 Students will explain capital equipment depreciation and how this is used by construction companies.	5.6 Students will estimate project cash flow and identify payment processes and the affects of time value of money.	6.1 Students will demonstrate typical fabrication and installation methods Students will demonstrate typical fabrication and installation methods for specified materials and products.	6.2 Students will demonstrate basic principles of civil engineering in CAD.	6.3 Students will apply the NEC for proper installations of electrical systems.	6.4 Students will demonstrate how the LEED rating system is applied to buildings.	6.5 Students will compare the composition and properties of building materials.	6.6 Students will understand terms, units of measurement, material grade stamps, sizes of materials, and define tolerances 6.6 Students will understand construction terms, units of measurement, material grade stamps, actual and nominal sizes of materials, and define tolerances.	6.7 Students will apply conformance references established by testing laboratories to building construction practices.	6.8 Students will apply the IBC and IRC building code manuals and standards.	7.1 Students will apply appropriate federal, state/provincial, and local codes.	7.2 Students will apply appropriate standards and accessibility guidelines.	7.3 Students will explain why bid shopping is unethical.	7.4 Students will explain why front-end loading is unethical.
CNST 106 Architectural Graphics						I																												
CNST 111 Construction Materials, Methods, and Equipment																I				P					I	I	I							
CNST 201 Construction Contract Documents and Project Delivery																															R	R		
CNST 213 Environmental and Mechanical Systems for Buildings													I																					
CNST 214 Plan Interpretation and Quantity Take-Off						P									I																			
CNST 306 Commercial Design and Construction																								P	R	R	R	P						
CNST 314 Estimating and Bid Preparation															R	R	I	P																
CNST 318 Statics and Strength of Materials											I	I																						
CNST 330 Construction Accounting, Finance, and Safety																					R													
CNST 351 Professional Internship					P																													
CNST 420 Construction Surveying									P	I				P																				
CNST 450 Construction Project Management																		R																
CNST 480 Construction Capstone				P						R							R																	
COMM 101 Introduction to Speech Communication				I																														
CVET 410 Structural Analysis & Reinforced Concrete Design																											I							
ECT 369 Electrical Construction																												P						
ENG 107 Rhetoric and Writing					I																													
IAD 110 Introduction to Interior Architecture Design		I																																
IAD 152 Interior Design Graphics I	P	P	I	I			I	I																										
IAD 310 Construction and Detailing: Commercial			P	I		I	P	P																			P			P		P	P	

Legend: I Introduced | P Practiced | R Reinforced

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