

Student Learning Outcomes Library

Office of Assessment & Accreditation

Indiana State University

M.S. Architectural Engineering Technology

Spring 2019

Outcome	Related Foundational Studies or Graduate Goal
Objective 1: Students will employ concepts of architectural theory and design in a design environment.	
SLO 1.1: Students will synthesize information and generate multiple concepts and/or multiple design responses to programmatic requirements.	
SLO 1.2: Students will demonstrate creative thinking and originality through presentation of a variety of ideas, approaches, and concepts.	
Objective 2: Students will utilize instruments, methods, software, and techniques that are appropriate to produce A/E documents and presentations.	
SLO 2.1: Students will produce competent contract documents.	
SLO 2.2: Students will deliver effective presentations concerning complete project delivery.	
SLO 2.3: Students will write technical business letters and reports using professional English.	
SLO 2.4: Students will identify detail hierarchies, scale, and content.	
Objective 3: Students will utilize measuring methods that are appropriate for field, office, or laboratory.	
SLO 3.1: Students will effectively apply the elements and principles of design to two-dimensional design solutions.	
SLO 3.2: Students will effectively apply the elements and principles of design to three-dimensional design solutions.	
SLO 3.3: Students will demonstrate layout and alignment control using surveying equipment.	
SLO 3.4: Students will use surveying skills to organize and develop a site.	
SLO 3.5: Students will analyze static forces in structures.	
SLO 3.6: Students will apply soil mechanics to excavations and foundations.	

Objective 4: Students will apply fundamental computational methods and elementary analytical techniques in sub-disciplines related to architectural engineering.	
SLO 4.1: Students will analyze heat flow through wall assemblies.	
SLO 4.2: Students will solve problems using trigonometry as it relates to surveying.	
Objective 5: Students will perform economic analyses and cost estimates related to design, construction, and maintenance of building systems.	
SLO 5.1: Students will create quantity takeoffs for residential and commercial projects.	
SLO 5.2: Students will identify and estimate direct and indirect job costs.	
SLO 5.3: Students will use estimating software applications to prepare and submit construction bids.	
SLO 5.4: Students will estimate project cash flow and identify payment processes and the effects of time value of money.	
Objective 6: Students will select appropriate materials and practices for building construction.	
SLO 6.1: Students will demonstrate typical fabrication and installation methods for specified materials and products.	
SLO 6.2: Students will demonstrate basic principles of BIM.	
SLO 6.3: Students will apply the NEC for proper installations of electrical systems.	
SLO 6.4: Students will demonstrate how the LEED rating system is applied to buildings.	
SLO 6.5: Students will compare the composition and properties of building materials.	
SLO 6.6: Students will understand construction terms, units of measurement, material grade stamps, actual and nominal sizes of materials, and define tolerances.	
SLO 6.7: Students will apply conformance references established by testing laboratories to building construction practices.	
SLO 6.8: Students will apply IBC and IRC building code manuals and standards.	
Objective 7: Students will apply principles of building codes, regulations, and ethics in architectural practice.	
SLO 7.1: Students will apply appropriate federal, state/provincial, and local codes.	
SLO 7.2: Students will apply appropriate standards and accessibility guidelines.	
SLO 7.3: Students will explain why bid shopping is unethical.	
SLO 7.4: Students will explain why front-end loading is unethical.	

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Foundational Studies Learning Goals

- FS1. Solve problems.
- FS2. Evaluate ideas.
- FS3. Learn and apply knowledge and skills.
- FS4. Demonstrate appreciation for the arts.
- FS5. Embrace civic duty.
- FS6. Understand diversity.
- FS7. Act as a global citizen.
- FS8. Behave ethically.
- FS9. Cultivate wellness.
- FS10. Communicate effectively.

Graduate Student Learning Goals

- G1. Demonstrate professional communication proficiencies.
- G2. Engage in and meaningfully contribute to diverse and complex communities and professional environments.
- G3. Recognize and act on professional and ethical challenges that arise in their field or discipline.
- G4. Achieve mastery of the knowledge required in their discipline or profession.
- G5. Achieve mastery of the skills (including using appropriate tools) required in their discipline or profession.