

ARCHITECTURAL ENGINEERING

Learning Outcomes

Master of Architectural Engineering (M.A.E.)

1. **Know:** Graduates will demonstrate an understanding of core principles, methods, and systems related to their selected sub-field of Architectural Engineering that permits them to appropriately develop project goals, address code requirements, and to list the benefits and challenges of alternative building design or process solutions.
2. **Apply/Create:** Graduates will be able to apply their knowledge of selected sub-fields of Architectural Engineering to assess and evaluate the performance of systems and processes related to the design and/or construction of buildings.
3. **Communicate:** Graduates will demonstrate proficiency in communication through clear and comprehensive written design reports, oral presentations of design solutions, and appropriate documentation of design and construction details.
4. **Think:** Graduates will be able to analyze and synthesize building systems and/or processes to deliver buildings which are sustainable, resilient, economically viable, and which ensure the safety, health, comfort, and productivity of occupants and workers.
5. **Professional Practice:** Graduates will demonstrate an understanding of, and a commitment to academic integrity, lifelong learning, and ethical standards for professional practice within Architectural Engineering.

Master of Engineering (M.Eng.)

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2. **Apply/Create:** Graduates will be able to apply their knowledge of selected sub-fields of Architectural Engineering to assess and evaluate the performance of systems and processes related to the design and/or construction of buildings.
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4. **Think:** Graduates will be able to analyze and synthesize building systems and/or processes to deliver buildings which are sustainable, resilient, economically viable, and which ensure the safety, health, comfort, and productivity of occupants and workers.
5. **Professional Practice:** Graduates will demonstrate an understanding of, and a commitment to academic integrity, lifelong learning, and ethical standards for professional practice within Architectural Engineering.

Master of Science (M.S.)

1. **Know:** Graduates will demonstrate an understanding of advanced core principles and methods by identifying their relationship in the operation of building systems and construction processes, as well as the benefits and challenges involved across a range of available alternative solutions.

2. **Apply/Create:** Graduates will be able to apply their knowledge in their selected sub-field of Architectural Engineering to the design, evaluation, and refinement of engineered systems and processes for buildings.
3. **Communicate:** Graduates will demonstrate proficiency in both oral and written communication by providing clear and comprehensive coverage of the background, literature, methodology, results, discussion, and conclusions related to their thesis research in both the written document and accompanying oral presentation.
4. **Think:** Graduates will be able to analyze and synthesize knowledge within the field of Architectural Engineering to address a complex research problem of practical relevance through their research thesis.
5. **Professional Practice:** Graduates will demonstrate an understanding of, and a commitment to, academic integrity and the standards within research and professional practice within Architectural Engineering.

Doctor of Philosophy (Ph.D.)

1. **Know:** Graduates will demonstrate a high level of understanding of advanced core principles and methods involved in engineered building systems and/or construction processes, as well as modern research methods that are applied in one or more sub-fields of Architectural Engineering.
2. **Apply/Create:** Graduates will be able to apply their knowledge in their selected sub-field of Architectural Engineering to conduct detailed performance analyses of engineered systems and processes for buildings, evaluate published literature, and generate new knowledge or solutions that improve energy usage, constructability, sustainability, resiliency, safety, health, comfort, and/or productivity of occupants and/or construction workers.
3. **Communicate:** Graduates will demonstrate proficiency in both their oral and written communication by providing clear and comprehensive coverage of the background, literature, methodology, results, discussion, and conclusion related to their thesis research in both their written dissertation and the accompanying presentation.
4. **Think:** Graduates will analyze and synthesize knowledge within the field of Architectural Engineering in independently formulating, investigating, and solving a complex research problem related to buildings.
5. **Professional Practice:** Graduates will demonstrate an understanding of, and a commitment to, academic integrity and the standards within research and professional practice within Architectural Engineering through their research conduct and coursework.