Program Distribution Requirements for the Architectural Engineering Major

The program is designed according to the ABET criteria for Architectural Engineering accreditation (see Appendix 1). The four basic architectural engineering curriculum areas are building structures, building mechanical systems, building electrical systems and construction/construction management. The following are the program distribution requirements.

**REQUIREMENTS**

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<th>REQUIREMENTS</th>
<th>MINIMUM UNITS</th>
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<td>1. Mathematics and Basic Science (Note 1)</td>
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<td>2. Architectural Engineering Complements (Note 2)</td>
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<td>3. Engineering Science and Design (Notes 3, 4, 5)</td>
<td>5 1/3</td>
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**NOTES:**

1. Mathematics must include differential and integral calculus, differential equations, probability, and statistics. Science must include 2/3 unit in calculus-based physics (either the PH1110 or PH1111 series), 1/3 unit in chemistry, 1/3 unit in thermodynamics (can be fulfilled by CH 3510 or other approved equivalent course such as ES 3001).

2. Must include topics in architectural graphics and communication (AREN 3001), in architectural design, (AREN 3002), and architectural history, (AR 2114 or approved equivalent).

3. Must include 4 1/3 units in the four areas of Architectural Engineering, distributed as follows:
   a) 2/3 units in the general architectural engineering area (AREN 2023) and fluid mechanics (ES 3004)
   b) 2/3 units in construction/construction management selected from topics in professional practice (CE 3022), project management (CE 3020), and project evaluation (CE 3025).
   c) 2/3 units in building mechanical systems selected from topics in heat transfer (ES 3003), HVAC systems (AREN 3003), and fire safety (FPE 3080).
   d) 2/3 units in building electrical systems with topics in: principles of electrical engineering (ECE 2010) and electrical and lighting systems (AREN 3004).
   e) 3/3 units in fundamentals of structural engineering selected from any three of the following four areas: statics (CE 2000 or ES 2501), strength of materials (CE 2001 or ES 2502), structural analysis including indeterminate structures (CE 2002), and soil mechanics (CE 3041).
   f) 2/3 units in advanced courses in building structures selected from topics in steel design (CE 3006), concrete design (CE 3008), pre-stressed concrete design (CE 4017) and structural engineering (CE 3010).
      or
      2/3 units in advanced courses in building mechanical systems selected from topics in HVAC design (AREN 3006), radiation heat transfer applications (ES 3005) and fire safety (FPE 3070).

4. Must include 1/3 unit in Experimentation (fulfilled by AREN 3003, ME 3901, CE 3026 or approved equivalent).

5. Must include the Capstone Design activity through the MQP in one of the architectural engineering areas.