**ENGINEERING**

**Discipline Coordinator**
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Engineering is a discipline in the Interdisciplinary Ph.D. (http://catalog.umkc.edu/colleges-schools/graduate-studies/interdisciplinary-phd-program) Program administered by the School of Graduate Studies.

**Note:** The discipline-specific requirements listed here are in addition to the requirements listed in Interdisciplinary Ph.D. Application Procedure and Minimum Criteria for Admission and Minimum Interdisciplinary Ph.D. Academic Regulations and Degree Requirements.

**Discipline-Specific Admission Requirements**

A student who satisfies the general requirements for admission and also meets the minimum discipline requirements stated below will be considered for regular admission to the Ph.D. program with engineering as a discipline. A student who does not meet some of the requirements but shows high potential for advanced-level work may be considered for provisional admission. Admission also depends on factors such as number of seats available, resources available in the area of the student’s interest, the quality of previous work, etc. Requirements for admission are the same whether the applicant is requesting engineering as the primary discipline or the co-discipline.

1. The applicant must have a bachelor’s degree or a master’s degree in civil or mechanical engineering or related disciplines with a grade-point average of at least 3.0 on a 4.0 scale in the last 60 hours of undergraduate engineering coursework. In addition, a GPA of 3.5 or better in all post-baccalaureate coursework is required. Pre-program requirements may be specified in case the bachelor’s degree is in a discipline different than that to which the candidate is applying.

2. The student must demonstrate an aptitude for advanced-level work by obtaining a cumulative GRE score of at least 302 (verbal + quantitative) and a minimum of 158 on the quantitative portion of the examination. GRE requirements may be waived for applicants with a baccalaureate from an ABET accredited program who have passed the fundamentals of Engineering (FE) exam.

3. TOEFL scores are required for international students without prior U.S. degrees. The minimum required score is 80. TOEFL requirements may be waived for applicants with a baccalaureate from an ABET accredited program.

4. The student must provide at least three recommendation letters from professors at previous institutions or mentors at work.

5. The applicant must provide a 500- to 750-word essay on his or her goals and objectives in pursuing the Ph.D. in the chosen fields.

6. Provisional admission may be granted if the minimum GPA and GRE requirements are not met, but other indicators promise the student’s success in the program. To be fully admitted to the Interdisciplinary Ph.D. program, the provisionally admitted student must obtain a grade of B or better in the first nine hours of coursework and submit a satisfactory GRE score within their first year of the program.

**Suggested Compatible Co-disciplines**

Chemistry, computer science, electrical and computer engineering, geosciences, mathematics, molecular biology and biochemistry, oral biology, physics, and telecommunication and computer networking.

**Core Program Requirements**

**Engineering as Primary Discipline**

A minimum of 60 credit hours of approved graduate coursework (300-level or higher) beyond the baccalaureate, including dissertation research hours (CIV-ENGR 5699, E&C-ENGR 5699 or MEC-ENGR 5699), are required. Of these, at least two-thirds must be at the 5500/5600-level. The graduate coursework may include courses taken at UMKC or other institutions and approved for transfer by the student’s supervisory committee. A minimum of 12 credit hours of dissertation research (CIV-ENGR 5699, E&C-ENGR 5699 or MEC-ENGR 5699) is required.

**Example Minimum Requirements Beyond Master of Science Degree**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary discipline (Engineering)</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Co-discipline (e.g. Mathematics or Physics)</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Dissertation research</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Total beyond M.S. degree (minimum of 30 hours)</strong></td>
<td></td>
<td><strong>33</strong></td>
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**Engineering as Co-discipline**

A student electing engineering as co-discipline will be required to complete a minimum of 9 credit hours in engineering graduate courses, of which at least six hours must be at the 5500/5600-level.
Qualifying Examination Guidelines
A qualifying exam will be completed by the Ph.D. student as a core program requirement. The exam will be administered by the graduate committee in conjunction with the research advisor in the first year of study. The exam will consist of two parts: (1) a written exam based on core areas in civil/mechanical engineering OR an engineering problem related to the student’s emphasis area AND, (2) an oral defense of the exam and other discipline fundamentals or the problem solution. The department will keep a record of whether the student has passed or failed the exam. The student may request one more attempt to retake the exam in the event of a failed grade. The student will be recommended for termination from the doctoral program after two failed attempts.

Comprehensive Examination Guidelines
To advance to degree candidacy, an Interdisciplinary Ph.D. student is required to pass a comprehensive examination administered by the student’s research advisor and supervisory committee. This comprehensive exam will consist of two parts. Part One will be a written exam over the student’s Ph.D. coursework or the submission of a grant proposal to the committee. Part Two will be an oral defense of the student’s dissertation research proposal.