

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 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 GRE test is preferred but not required. It is beneficial to applicants to take the test and submit scores.
3. TOEFL or IELTS scores are required for international students without prior U.S. degrees. The minimum required score is 80 or 6.5 on TOEFL or IELTS, respectively. 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. The application can be initially reviewed with just one recommendation letter.
5. The applicant must provide a maximum 300-word statement on their goals and objectives in pursuing the Ph.D. The statement at the least should indicate which of the areas (civil or mechanical) the student is interested in and preferably indicate the sub-discipline the student is interested in as well, such as structures, construction management, biomechanical, HVAC etc.
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 Networking and Communication Systems (<https://catalog.umkc.edu/colleges-schools/graduate-studies/telecommunication-computer-networking/>), C (<https://catalog.umkc.edu/colleges-schools/graduate-studies/computer-science/>) Computer Science, Electrical and Computer Engineering, G (<https://catalog.umkc.edu/colleges-schools/graduate-studies/geosciences/>) Geosciences, M (<https://catalog.umkc.edu/colleges-schools/graduate-studies/mathematics/>) Mathematics, M (<https://catalog.umkc.edu/colleges-schools/graduate-studies/molecular-biology-biochemistry/>) Molecular Biology and Biochemistry, O (<https://catalog.umkc.edu/colleges-schools/graduate-studies/oral-craniofacial-sciences/>) Oral and Craniofacial Sciences (<https://catalog.umkc.edu/colleges-schools/graduate-studies/oral-craniofacial-sciences/>), Physics (<https://catalog.umkc.edu/colleges-schools/graduate-studies/physics/>)

Core Program Requirements

Engineering as Primary Discipline

Students without an MS degree need to complete a minimum of 42 credit hours of approved didactic graduate coursework (not research hours) beyond the baccalaureate. At least two-thirds of these hours 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 taken at UMKC (CIV-ENGR 5699, E&C-ENGR 5699 or MEC-ENGR 5699) is required.

Example Minimum Requirements without an MS degree

Code	Title	Credits
	Primary discipline (Engineering)	33
	Co-discipline (e.g. Mathematics or Physics)	9
	Dissertation research	12
	Total beyond M.S. degree (minimum of 30 hours)	54

Students with an MS degree need to complete a minimum of 18 credit hours of approved didactic graduate coursework (not research hours) beyond the MS degree. At least two-thirds of these hours 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 taken at UMKC (CIV-ENGR 5699, E&C-ENGR 5699 or MEC-ENGR 5699) is required.

Example Minimum Requirements beyond an MS Degree

Code	Title	Credits
	Primary discipline (Engineering)	9
	Co-discipline (e.g. Mathematics or Physics)	9
	Dissertation research	12
Total beyond M.S. degree (minimum of 30 hours)		30

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

Students may be required to complete a qualifying exam by the research advisor. If required, 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.