MECHANICAL ENGINEERING
- DOCTOR OF PHILOSOPHY
(PHD)

Mechanical engineering PhD students at CU Boulder take part in cutting edge, tier-one research, learning from nationally and internationally recognized faculty.

Our research harnesses state-of-the-art experimental, theoretical and computational approaches to expand the frontiers of technology, while advancing fundamentals in the underlying disciplines of fluid and solid mechanics, thermal engineering and materials science and engineering.

PhD students choose from focus areas in air quality, bioengineering, materials, mechanics of materials, micro/nanoscale, robotics and systems design, and thermo fluid sciences.

The PhD program in mechanical engineering is available to students entering graduate studies for the first time as well as those who already have a master’s degree. While a master’s is not required to enroll, our PhD students will typically earn one on the way to a PhD. The best way to do that is by following an MS thesis curriculum (see the department’s Master of Science - Thesis Option webpage).

PhD students consult with a faculty advisor throughout the duration of their degree to review their research progress and course selection.

For more information, visit the department’s PhD webpage.

Requirements

Course Requirements
The PhD requires 30–42 credit hours of course work in courses numbered 5000 or above, with a minimum GPA of 3.25, plus 30 credit hours of dissertation credit.

A maximum of 21 credit hours of graduate course work may be transferred from another accredited institution. All courses taken for the master’s degree at the 5000 level or above at CU Boulder may be applied toward the doctoral degree at the university.

For more information, visit the department’s PhD and Focus Areas webpages.

Preliminary Examination
Every student desiring to pursue the PhD degree must pass a preliminary examination. As a part of this evaluation, students must pass a written math examination, as well as two oral examinations designed to test research and fundamental mechanical engineering competency. Students must also pass a research presentation given to a committee of at least three faculty members. Overall performance in the required examinations will determine pass/fail status.

Comprehensive Examination
After passing the preliminary examination, students continue their course work and prepare a written thesis prospectus. When ready, they take