Mechanical Engineering

The Mechanical Engineering graduate program prepares students in all aspects of mechanical and thermal systems design and manufacturing. Course offerings and research programs for mechanical engineering students are available in applied mechanics; biomechanics; combustion; design and manufacturing; dynamic systems and control; energy conversion and systems; experimental mechanics; fluid dynamics; heat transfer; mechanics of materials; micro, nano and MEMS; and vibration and acoustics. Sub-areas include adaptive and auto adaptive structures, controls and system identification, CFD, energy conversion and renewable energy, materials processing and tribology, mechatronics, precision engineering, and reactive and multiphase flows.

Admission Requirements

An applicant to the master's program must be a graduate of an accredited undergraduate program with a B.S. degree in either mechanical or aerospace engineering. Graduates of other accredited programs in engineering, physical sciences and mathematics may be considered but may be required to make up undergraduate deficiencies without graduate credit. Provisional admissions, as well as exceptions, are sometimes granted under special circumstances. The most qualified applicants are accepted first. Applicants to the Ph.D. program must have met the M.S. admission requirements and additionally must satisfy the Ph.D. admissions requirements. Applicants to the online, distance education M.S. program in mechanical or aerospace engineering are not required to take the GRE exam.

Master's Degree Requirements

The thesis-option M.S. degree programs in mechanical engineering and aerospace engineering require 21 hours of course credit and nine hours of thesis research. The non-thesis M.S. degree programs in mechanical engineering and aerospace engineering require 27 hours of course credit and a three credit-hour project. The non-thesis M.S. degree programs in mechanical engineering and aerospace engineering are offered on campus and off campus through distance education.

Ph.D. Degree Requirements

A minimum of 72 hours of credit are required to obtain the Ph.D. degree. A direct path to the Ph.D. from the B.S. is also available with which the student is granted the M.S. degree “enroute” to the Ph.D. The enroute Ph.D. (direct to Ph.D. path) requires a minimum of 3.5 undergraduate GPA.

Student Financial Support

Various types of assistantships and fellowships are available. Awards are made to the most qualified applicants first and generally are not available for all students.

Other Relevant Information

Each new student chooses an area of specialty, selects an advisor and committee, customizes a program of study and begins research in the first semester of residence. The Director of Graduate Programs acts as a temporary advisor initially and should be contacted with questions.

Degrees

- Mechanical Engineering (MS) ([link](http://catalog.ncsu.edu/graduate/engineering/mechanical-engineering/mechanical-engineering-ms/))
- Mechanical Engineering (PhD) ([link](http://catalog.ncsu.edu/graduate/engineering/mechanical-engineering/mechanical-engineering-phd/))
- Mechanical Engineering (Minor) ([link](http://catalog.ncsu.edu/graduate/engineering/mechanical-engineering/mechanical-engineering-minor/))

Faculty

Full Professors

Gregory D. Buckner
Tarek Echekki
He Huang
Jack Ray Edwards Jr
Srinath Ekkad
Tiegang Fang
Ashok Gopalarathnam
Richard David Gould
Xiaoning Jiang
Richard F. Kettle
Clement Kleinstreuer
Andrey Valerevich Kuznetsov
Hong Luo
Kevin M. Lyons
Gracious Ngaile
Kara Jo Peters
Afsaneh Rabiei
Lawrence M. Silverberg
Juei Feng Tu
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Fuh-Gwo Yuan
Yong Zhu
Mohammed A. Zikry

Associate Professors

Matthew Bryant
Jeffrey W. Eischen
Scott M. Ferguson
Charles Edward Hall Jr.
Assistant Professors
Landon Grace
Kenneth Granlund
Timothy Joseph Horn
Arun Kumar Kota
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Marie Muller
Mark R. Pankow
Jason F. Patrick
Jong Eun Ryu
Pramod K. V. Subbareddy
Jie Yin

Practice/Research/Teaching Professors
Stephen D. Terry

Emeritus Faculty
John A. Bailey
Herbert Martin Eckerlin
Francis J. Hale
Franklin D. Hart
Hassan A. Hassan
Thomas H. Hodgson
Richard R. Johnson
David S. McRae
James C. Mulligan
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Carl F. Zorowski

Lecturer
Steven Berg