

MECHANICAL ENGINEERING PROGRAM

Mechanical engineering is a highly diversified profession. The mechanical engineer designs machines, devices, various products and control systems, and works with the generation, conversion, transmission and utilization of mechanical and thermal power. Assignments often include analysis and synthesis of mechanical, thermal and fluid systems. Mechanical engineers are also responsible for characterization, specification and analysis of materials used in design and manufacturing. Manufacturing systems, robotics, electromechanical devices and control systems are also the purview of the mechanical engineer. Graduates in mechanical engineering are among the most versatile engineers and enjoy professional employment in industry, government, consulting and research organizations.

The work of mechanical engineers varies from general engineering to numerous narrow specialties, as required by the wide variety of employers. A general list, though not in any way exhaustive, of the areas of professional employment opportunities available to mechanical engineers includes design, construction, controls, materials specification and evaluation, thermal systems analysis, fluid and solid mechanics, manufacturing, plant engineering, research and development, and technical sales. Many mechanical engineers are promoted to management and administrative positions as well.

Program Mission

The mission of the Mechanical Engineering Program is to serve the students of Texas A&M at Qatar and the State of Qatar by:

- Providing quality education, well grounded in the fundamental principles of engineering, to prepare students for leadership positions and successful careers in industry, government and academia.
- Extending the knowledge base of mechanical engineering to support the competitiveness of existing industry and to spawn new economic development in the State of Qatar and the region through active involvement in basic and applied research.
- Providing professional development opportunities for practicing engineers through continuing education, service and outreach activities.

Program Educational Objectives

The objectives of the Mechanical Engineering Program at Texas A&M at Qatar are to produce graduates who, a few years after leaving Texas A&M Qatar will:

1. Have broad engineering experience of increasing complexity to address the evolving needs of the private and public sectors in Qatar, the surrounding regions, and beyond.
2. Have leadership positions in their professional career.
3. Have met new challenges by engaging in professional development, further technical education and/or non-technical education.

The mechanical engineering curriculum at Texas A&M at Qatar requires students to develop and apply logical thinking, innovative approaches and ethical standards as a prerequisite for professional competence. The curriculum consists of basic theory courses complemented by laboratory experiences in science and mathematics, dynamic systems and controls, design, experimentation, fluid mechanics, heat transfer,

manufacturing, and materials. Elective courses are offered in several specific areas of mechanical engineering including air conditioning, computer-aided design, control systems, corrosion, energy conversion, materials, mechanical design, plastics, mechatronics, failure, power generation, turbomachinery and others. The selection of elective courses is dictated by the interests and professional goals of the student, working with departmental advisors and within the curriculum guidelines.

Many students enhance their education by participating in professional internships, which offer opportunities for employment in engineering positions, while working toward a degree. Numerous study abroad programs are also available for gaining experience and perspectives in the international arena. Participation in student chapters of professional and honor societies provides leadership opportunities, collegial activities and learning experiences outside the classroom. Students may also participate in research projects through individually directed studies courses with a professor. The Mechanical Engineering Program culminates with a senior capstone design course sequence highlighted by real-life projects sponsored by various industries. Students benefit from the challenges and gratification that come through direct interaction with practicing engineers.

Before commencing course work in the major, students must be admitted to the major or have the approval of the department.

The undergraduate program in Mechanical Engineering at Texas A&M University at Qatar is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org> (<https://www.abet.org/>).

Faculty

AbdelGawad, Marwa, Instructional Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2022

Aguilar-Mendoza, Guillermo, Professor
Mechanical Engineering
PHD, University of California - Santa Barbara, 1999

Albakri, Mohammad, Engineering Assistant Professor
Mechanical Engineering
PHD, Virginia Polytechnic Institute and State University, 2016

Allaire, Douglas L, Associate Professor
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 2009

Ambrose, Robert, Professor
Mechanical Engineering
PHD, University of Texas at Austin, 1991

Anand, Nagamangala, Regents Professor
Mechanical Engineering
PHD, Purdue University, 1983

Antao, Dion S, Assistant Professor
Mechanical Engineering
PHD, Drexel University, 2013

Balas, Mark, Professor
Mechanical Engineering
PHD, University of Denver, 1974

Balawi, Shadi Omar, Instructional Associate Professor
Mechanical Engineering
PHD, University of Cincinnati, 2007

Bandyopadhyay, Arkasama, Research Assistant Professor
Mechanical Engineering
PHD, University of Texas Austin, 2020

Banerjee, Debjyoti, Professor
Mechanical Engineering
PHD, University of California at Los Angeles, 1999

Benjamin, Chandler C, Assistant Professor
Mechanical Engineering
PHD, University of Wisconsin, Madison, 2017

Borzajani, Iman, Associate Professor
Mechanical Engineering
PHD, University of Minnesota, 2008

Charoenphol, Phapanin, Instructional Assistant Professor
Mechanical Engineering
DEN, University of Michigan, 2012

Chen, Wei, Assistant Professor
Mechanical Engineering
PHD, University of Maryland, 2019

Claridge, David E, Professor
Mechanical Engineering
PHD, Stanford University, 1976

Cooper, Marcia, Associate Professor
Mechanical Engineering
PHD, California Institute of Technology, 2004

Cope, Dale A, Professor of Practice
Mechanical Engineering
PHD, Wichita State University, 2002

Corleto, Carlos Roberto, Professor of the Practice
Mechanical Engineering
PHD, Texas A&M University, 1990

Cortez, Jessie, Lecturer
Mechanical Engineering
MA, The University of North Carolina at Charlotte, 2018

Darbha, Swaroop V, Professor
Mechanical Engineering
PHD, University of California at Berkeley, 1994

Delgado, Adolfo, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2008

El Borgi, Sami, Professor
Mechanical Engineering
PHD, Cornell University, 1993

Elliott, Matthew, Instructional Associate Professor
Mechanical Engineering
PHD, Texas A&M, 2013

Erdemir, Ali, Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 1986

Felts, Jonathan R, Associate Professor
Mechanical Engineering
DEN, University of Illinois Urbana Champaign, 2013

Fenton Friesen, Rebecca, Assistant Professor
Mechanical Engineering
PHD, Northwestern University, 2020

Gao, Wei, Associate Professor
Mechanical Engineering
PHD, University of Texas, 2014
PHD, University of Texas at Austin, 2014

Gopalswamy, Swaminathan, Research Professor
Mechanical Engineering
PHD, University of California, 1991

Grunlan, Jaime C, Professor
Mechanical Engineering
PHD, University of Minnesota, 2001

Guo, Bing, Associate Professor
Mechanical Engineering
PHD, Tsinghua University, China, 1998

Haglund, John S, Instructional Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2003

Han, Je C, Distinguished Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1977

Hasnain, Zohaib, Assistant Professor
Mechanical Engineering
PHD, University of Maryland, 2014

Hassan, Ibrahim, Professor
Mechanical Engineering
PHD, Manitoba University, 1995

Hassan, Yassin A, University Distinguished Professor and Regents
Professor
Mechanical Engineering
PHD, University of Illinois, 1980

Hipwell, M Cynthia, Professor
Mechanical Engineering
PHD, University of California at Berkeley, 1996

Hogan, Harry A, Professor
Mechanical Engineering
PHD, Texas A&M University, 1984

Hossain, Zubaer, Instructional Associate Professor
Mechanical Engineering
PHD, University of Illinois at Urbana-Champaign, 2011

Hubbard Jr, James, University Distinguished Professor
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 1982

Jacobs, Timothy J, Professor
Mechanical Engineering
PHD, University of Michigan, 2005

Jarrabhshi, Dorrin, Assistant Professor
Mechanical Engineering
PHD, University of California Irvine, 2014

Khraisheh, Marwan, Professor
Mechanical Engineering
PHD, Washington State University, 1996

Kim, Haejune, Instructional Assistant Professor
Mechanical Engineering
PHD, University of Wisconsin at Milwaukee, 2014

Kim, Won-Jong, Associate Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1997

Kim, Yong-Joe, Associate Professor
Mechanical Engineering
PHD, Purdue University, 2003

Krishnamoorthy, Aravind, Assistant Professor
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 2016

Krishnamurthy, Vinayak, Associate Professor
Mechanical Engineering
PHD, Purdue University, 2016

Kulatilaka, Waruna D, Professor
Mechanical Engineering
DEN, Purdue University, 2006

Lacy, Thomas E., Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 1998

Lan, Shoufeng, Assistant Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2017

Langari, Reza, Regents Professor
Mechanical Engineering
PHD, University of California at Berkeley, 1991

Lavernia Borrego, Enrique, Professor
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 1986

Layton, Astrid C, Assistant Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2014

Lee, ChaBum, Associate Professor
Mechanical Engineering
PHD, Gwangju Institute of Science and Technology, 2012

Lee, Kiju, Associate Professor
Mechanical Engineering
PHD, Johns Hopkins University, 2009

Lewis, Heather, Lecturer
Mechanical Engineering
MEN, North Carolina State University, 2000

Li, Ying, Professor
Mechanical Engineering
PHD, University of Florida, 2007

Liang, Hong, Professor
Mechanical Engineering
PHD, Stevens Institute of Technology, 1992

Malak Jr, Richard J, Associate Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2008

Mansoor, Bilal, Associate Professor
Mechanical Engineering
PHD, University of Michigan, 2010

Masad, Eyad A, Professor
Mechanical Engineering
PHD, Washington State University, 1998

Mathieu, Olivier E, Research Associate Professor
Mechanical Engineering
PHD, University of Orleans, 2006

McAdams II, Daniel A, Professor
Mechanical Engineering
PHD, The University of Texas at Austin, 1999

McFarland, Jacob, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2013

McVay, Matilda W, Instructional Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 1996

Mohiuddin, Mohammad W, Instructional Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2008

Moreno, Michael R, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2009

Muliana, Hanifah, Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2004

Needleman, Alan, University Distinguished Professor
Mechanical Engineering
PHD, Harvard University, 1971

O'Neill, Zheng, Associate Professor
Mechanical Engineering
PHD, Oklahoma State University, 2004

Pagilla, Prabhakar R, Professor
Mechanical Engineering
PHD, University of California at Berkeley, 1996

Palazzolo, Alan B, Professor
Mechanical Engineering
PHD, University of Virginia, 1981

Pan, Heng, Associate Professor
Mechanical Engineering
PHD, University of California-Berkeley, 2009

Pate, Michael B, Professor
Mechanical Engineering
PHD, Purdue University, 1982

Petersen, Eric L, Professor
Mechanical Engineering
PHD, Stanford University, 1998

Pharr, George, Associate Professor
Mechanical Engineering
PHD, Harvard University, 2014

Powell-Palm, Matthew, Assistant Professor
Mechanical Engineering
PHD, University of California, Berkeley, 2020

Qiu, Jingjing, Associate Professor
Mechanical Engineering
PHD, Florida State University, 2008

Rajagopal, Kumbakonam, Distinguished Professor
Mechanical Engineering
PHD, University of Minnesota, 1978

Rasmussen, Bryan P, Professor
Mechanical Engineering
PHD, University of Illinois, 2005

Rathinam, Sivakumar, Professor
Mechanical Engineering
PHD, University of California at Berkeley, 2007

Reddy, Junuthula N, Distinguished Professor and Regents Professor
Mechanical Engineering
PHD, University of Alabama at Huntsville, 1974

Restrepo Perez, Vanessa, Assistant Professor
Mechanical Engineering
PHD, Purdue University, 2021

Robbins, Andrew B, Research Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2018

Sadr, Reza, Professor
Mechanical Engineering
PHD, University of Utah, 2002

Saripalli, Srikanth, Professor
Mechanical Engineering
PHD, University of Southern California, 2007

Schoenung, Julie, Professor
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 1987

Seets, David, Professor Of The Practice
Mechanical Engineering
PHD, The University of Texas at Austin, 1997

Srinivasa, Arun R, Professor
Mechanical Engineering
PHD, University of California at Berkeley, 1991

Staack, David A, Associate Professor
Mechanical Engineering
PHD, Drexel University, 2008

Subramanian, Velumani, Instructional Associate Professor
Mechanical Engineering
PHD, Bharathiar University, 1998

Suh, Chii-Der, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 1997

Tafreshi, Reza, Professor
Mechanical Engineering
PHD, University of British Columbia, Canada, 2005

Taheri Andani, Mohsen, Assistant Professor
Mechanical Engineering
PHD, University of Michigan, 2022

Tai, Li-Jung, Associate Professor
Mechanical Engineering
PHD, University of Michigan Ann Arbor, 2011

Tarazaga, Pablo, Professor
Mechanical Engineering
PHD, Virginia Polytechnic Institute & State University, 2009
PHD, Virginia Polytechnic Institute and State University, 2009

Thomas, Gray, Assistant Professor
Mechanical Engineering
PHD, University of Texas at Austin, 2019

Thomas, James, Research Assistant Professor
Mechanical Engineering
PHD, Texas A&M, 2018

Thomas, Naveen, Instructional Assistant Professor
Mechanical Engineering
PHD, Texas A&M, 2021
PHD, Texas A&M University, 2021
PHD, Texas A&M University, 2019

Thyagarajan, Ravi, Professor Of The Practice
Mechanical Engineering
PHD, California Institute of Technology, 1989

Tsenn, Joanna N, Instructional Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2016

Tseregounis, Spyros, Professor of the Practice
Mechanical Engineering
PHD, University of California at Los Angeles, 1984

Walsh, Michael, Associate Professor of the Practice
 Mechanical Engineering
 MFA, University of Southern California, 2001

Wang, Ya, Associate Professor
 Mechanical Engineering
 PHD, Virginia Tech, 2012

Weaver-Rosen, Jonathan, Instructional Assistant Professor
 Mechanical Engineering
 PHD, Texas A&M, 2021

Wen, Sy-Bor, Associate Professor
 Mechanical Engineering
 PHD, University of California at Berkeley, 2006

Wilkerson, Justin W, Associate Professor
 Mechanical Engineering
 PHD, Johns Hopkins University, 2014

Wright, Lesley M, Associate Professor
 Mechanical Engineering
 PHD, Texas A&M University, 2006

Yu, Choongho, Professor
 Mechanical Engineering
 PHD, The University of Texas at Austin, 2004

Zheng, Minghui, Associate Professor
 Mechanical Engineering
 PHD, University of California, Berkeley, 2017

Zhou, Yuxiao, Assistant Professor
 Mechanical Engineering
 PHD, Pennsylvania State University, 2020

Majors

- Bachelor of Science in Mechanical Engineering (<http://catalog.tamu.edu/undergraduate/qatar/mechanical-engineering-program/mechanical-engineering-bs/>)

Minors

- Analysis, Design and Management of Energy Conversion Systems Minor (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/analysis-design-management-energy-conversion-systems-minor/>)
- Control of Mechanical Systems Minor (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/control-mechanical-systems-minor/>)
- Design and Simulation of Mechanical Systems Minor (<http://catalog.tamu.edu/undergraduate/engineering/mechanical/design-simulation-mechanical-systems-minor/>)