

College of Engineering

<https://www.ndsu.edu/coe/>

Vision

The College of Engineering will be the engineering college of choice for students, faculty and employers seeking to enhance society through leadership and innovation.

Mission

We prepare innovative problem solvers and create new knowledge to improve lives in North Dakota and beyond.

Departments

The departments include Agricultural and Biosystems Engineering, Civil and Environmental Engineering, Computer Science, Construction Management and Engineering, Electrical and Computer Engineering, Industrial and Manufacturing Engineering, and Mechanical Engineering. The departments of Aerospace Studies (Air Force ROTC) and Military Science (Army ROTC) report through the college for academic program requirements.

Accreditation

The facilities and engineering curricula of college programs are reviewed periodically by the appropriate accrediting agencies. The programs leading to the Bachelor of Science degrees in the following disciplines are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>: Agricultural and Biosystems Engineering, Civil Engineering, Computer Engineering, Construction Engineering, Electrical Engineering, Industrial Engineering and Management, Manufacturing Engineering, and Mechanical Engineering. The American Council for Construction Education (ACCE) reviews the facilities and curricula for the program leading to the Bachelor of Science in Construction Management. These organizations are recognized national accrediting agencies.

Admission Requirements

Applicants for admission must satisfy the general admission requirements of the university.

Selective Program Entry

Programs within the College of Engineering may have selective program entry requirements. Refer to the department program descriptions for respective selective criteria.

Recommended Preparation

College of Engineering programs encourage high school preparation in addition to the minimum core curriculum requirements. Prospective students will be best prepared if they complete four units of high school mathematics including two units of algebra, one unit of geometry, and one-half unit of trigonometry. Science courses should include one unit of physics and one unit of chemistry. Students whose high school credentials or entrance examinations show deficiencies in these subjects will be required to enroll in courses designed to remove such deficiencies and cannot expect to complete a program of study in the number of semesters indicated in the printed curricula.

Degree Programs

Undergraduate programs of study lead to the Bachelor of Science degree in the specific fields of agricultural and biosystems engineering, civil engineering, computer engineering, computer science, construction engineering, construction management, electrical engineering, environmental engineering, industrial engineering and management, manufacturing engineering, and mechanical engineering. The Computer Science department offers programs leading to either a Bachelor of Science or Bachelor of Arts degree. Some programs include a number of options for specialized study.

The college has developed its programs of study to provide an educational experience in keeping with the professions of engineering, computing, and construction management. The classrooms and laboratories are well equipped and every effort is made to keep them abreast of current technology. Engineering program graduates successfully apply for registration as professional engineers after required periods of professional experience. Examinations of the North Dakota State Board of Registration for Engineers and Land Surveyors are available on-line. The Level I - Associate Constructor Certification Exam for American Institute of Constructors Certification Commission is offered each semester. All students are encouraged to take appropriate licensure examinations in the senior year.

All College of Engineering departments also have programs that lead to Master of Science and Doctor of Philosophy degrees. The Department of Computer Science also offers Master of Science and Doctor of Philosophy degrees in Software Engineering as well as a Master of Software Engineering degree. The Department of Construction Management and Engineering offers a Master of Science in Construction Management or a professional Master of Construction Management degree. The Master of Construction Management and Master of Software Engineering degrees are also available online. The graduate degrees are administered by The Graduate School and the College of Engineering. A number of graduate

assistantships are available to students undertaking graduate study. For more complete details, see the Graduate Bulletin (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/graduate/>).

Special Opportunities and Services

Special opportunities include the following:

- **General Program:** Students who are interested in engineering but have not chosen a specific program are advised within the College of Engineering until they declare a major. They will be advised to take basic courses in the first two semesters that will be generally appropriate to any engineering major. Students are encouraged to select a specific program as soon as possible before the end of their first year.
- **Interdisciplinary Program:** The Natural Resources Management program is available through the College of Agriculture, Food Systems, and Natural Resources, the College of Engineering, and the College of Science and Mathematics. The College also collaborates with the Environmental & Conservation Science Program (<https://www.ndsu.edu/ecs/>) (ECS).

Student Societies and Organizations

All students are eligible to join one or more of these organizations which are actively supported for the benefit of students in the related curricula:

- American Indian Science and Engineering Society
- American Institute of Aeronautics and Astronautics
- American Society of Agricultural and Biological Engineers
- American Society of Civil Engineers
- American Society of Mechanical Engineers
- American Water Works Association/Water Environmental Federation
- Association for Computing Machinery
- Associated General Contractors
- Bison Robotics
- Cybersecurity Student Organization
- Engineers Without Borders
- Institute of Electrical and Electronic Engineers
- Institute of Industrial Engineers
- Institute of Transportation Engineers
- Materials Research Society
- National Association of Home Builders
- National Society of Black Engineers
- Society for the Advancement of Material and Process Engineering
- Society of Automotive Engineers
- Society of Manufacturing Engineers
- Society of Plastics Engineers, Inc.
- Society of Women Engineers
- Surface Mount Technology Association

Air Force ROTC sponsors the Bernard S. Bennison Squadron of the Arnold Air Society (AAS). This is a non-profit student service organization dedicated to furthering the purpose, traditions and concepts of the United States Air Force. These objectives are primarily met through community service projects.

Several national professional honor societies have chapters on the campus for which students with high academic attainments are eligible in their junior or senior years. Eligible students are selected for Tau Beta Pi from all engineering programs, Alpha Epsilon from agricultural and biosystems engineering, Eta Kappa Nu from electrical engineering, Alpha Pi Mu from industrial engineering, Sigma Lambda Chi from construction management and engineering, Pi Tau Sigma from mechanical engineering, and Upsilon Pi Epsilon from computer science. Membership in these societies is a coveted honor and highly regarded in the professions.

Research

Research and development projects are administered by college staff responsible for general policies, publications, and cooperative relations with private and governmental agencies.

Cooperative Education

Cooperative Education (<https://career.ndsu.edu/internship-program/>), a program of the Career Center (<https://www.ndsu.edu/career/>), offers undergraduate and graduate students an opportunity to integrate classroom study with paid, career-related work experience for academic credit. Work may be full or part time. A Cooperative Education experience may substantially improve students' employment opportunities after graduation.

Aerospace Studies (Air Force ROTC) (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/aerospace-studies-air-force-rotc/>)

Agricultural & Biosystems Engineering (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/agriculture-biosystems-engineering/>)

Civil & Environmental Engineering (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/civil-environmental-engineering/>)

Computer Science (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/computer-science/>)

Construction Management & Engineering (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/construction-management-engineering/>)

Electrical & Computer Engineering (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/electrical-computer-engineering/>)

Industrial & Manufacturing Engineering (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/industrial-manufacturing-engineering/>)

Mechanical Engineering (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/mechanical-engineering/>)

Military Science (Army ROTC) (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/departments/military-science-army-rotc/>)

Faculty

- Ajmera, Beena, Assistant Professor of Civil and Environmental Engineering, Ph.D., 2015, Virginia Polytechnic Institute and State University
- Amiri, Ali, Assistant Professor of Practice of Mechanical Engineering, Ph.D., 2017, North Dakota State University
- Asa, Eric, Associate Professor of Construction Management and Engineering, Ph.D., 2002, University of Alberta
- Azarmi, Fardad, Professor of Mechanical Engineering, Ph.D., 2007, University of Toronto
- Banawi, Abdul-Aziz, Assistant Professor of Construction Management and Engineering, Ph.D., 2013, University of Pittsburgh
- Bezbaruah, Achintya, Associate Professor of Civil Engineering, Ph.D., 2002, University of Nebraska-Lincoln
- Bilen-Green, Canan, Vice Provost for Faculty Affairs, Professor of Industrial and Manufacturing Engineering, Ph.D., 1998, University of Wyoming
- Bon, Thomas A., Associate Professor of Practice of Agricultural and Biosystems Engineering, Ph.D., 2003, North Dakota State University
- Braaten, Benjamin, Professor of Electrical and Computer Engineering, Department Chair, Ph.D., 2009, North Dakota State University
- Cannayen, Igathinathane, Associate Professor of Agricultural and Biosystems Engineering, Ph.D., 1997, Indian Institute of Technology
- Chaharsooghi, Farhad S., Assistant Professor of Electrical and Computer Engineering; Ph.D. 2016, University of Michigan
- Chu, Xuefeng, Professor of Civil Engineering, Ph.D., 2002, University of California-Davis
- Denton, Anne, Professor and Undergraduate Student Coordinator, Ph.D., 1996, University of Mainz
- Estevadeordal, Jordi, Associate Professor of Mechanical Engineering, Ph.D., 1996, University of Houston
- Farahmand, Kambiz, Professor of Industrial and Manufacturing Engineering, Ph.D., 1992, University of Texas-Arlington
- Flores, Paulo, Assistant Professor of Agricultural and Biosystems Engineering, Ph.D., 2008, Federal University of Rio Grande do Sul
- Gao, Zhili, Associate Professor of Construction Management and Engineering, Ph.D., 2004 Iowa State University
- George, Sumitha, Assistant Professor of Electrical and Computer Engineering; Ph.D. 2020, Pennsylvania State University
- Gladen, Adam, Assistant Professor of Mechanical Engineering, Ph.D., 2014, University of Minnesota
- Glower, Jacob, Professor of Electrical and Computer Engineering; Ph.D., 1988, Ohio State University
- Green, Roger, Associate Professor of Electrical and Computer Engineering, Ph.D., 1998, University of Wyoming
- Grewell, David, Professor of Industrial and Manufacturing Engineering; Department Chair, Ph.D., 2005, Ohio State University
- Hammed, Ademola, Research Assistant Professor of Agricultural and Biosystems Engineering, Ph.D. 2014, International Islamic University
- Hellevang, Kenneth J., Professor of Agricultural and Biosystems Engineering, Interim Department Chair, Ph.D., 1989, North Dakota State University
- Hu, Lan, Lecturer of Computer Science, MS, 2007, Utah State University
- Huang, Ying, Associate Professor of Civil Engineering, Ph.D., 2012, Missouri University of Science and Technology
- Iskander, Syeed, Assistant Professor of Civil and Environmental Engineering, Ph.D., 2019, Virginia Polytechnic Institute and State University
- Jang, Youjin, Assistant Professor of Construction Management and Engineering, Ph.D., 2017, Seoul National University.
- Jeong, Inbae, Assistant Professor of Mechanical Engineering, Ph.D., 2017, Korea Advanced Institute of Science and Technology, Republic of Korea
- Jia, Xinhua, Professor of Agricultural and Biosystems Engineering, Ph.D., 2004, University of Arizona
- Jiang, Long, Associate Professor of Mechanical Engineering; Ph.D., 2003, Nanyang Technological University
- Kahn, Dan, Lecturer of Computer Science, MS, 2015, University of Illinois

- Kallmeyer, Alan R., Professor of Mechanical Engineering; Department Chair, Ph.D., 1995, University of Iowa
- Karami, Ghodrattollah, Professor of Mechanical Engineering, Ph.D., 1984, Imperial College of Science and Technology, University of London
- Katti, Dinesh R., Professor of Civil Engineering; Ph.D., 1991, University of Arizona
- Katti, Kalpana, Distinguished Professor of Civil Engineering, Ph.D., 1996, University of Washington
- Kessler, Michael, Dean of the College of Engineering, Professor of Mechanical Engineering, Ph.D., 2002, University of Illinois
- Kong, Jun, Professor of Computer Science, Ph.D., 2005, University of Texas, Dallas
- Kotala, Pratap, Assistant Professor of Practice of Computer Science and Software Engineering Graduate Facilitator, Ph.D., North Dakota State University, 2015
- Krishnan, Sumathy, Professor of Mechanical Engineering, Ph.D., 1995, Indian Institute of Technology-Madras, India
- Latimer, Joseph, Lecturer of Computer Science, MBA, 1988, California Polytechnic State University
- Le, Trung, Assistant Professor of Civil and Environmental Engineering, Ph.D., 2011, University of Minnesota
- Le, Trung (Tim), Assistant Professor of Industrial and Manufacturing Engineering; Ph.D., 2013, Oklahoma State University
- Li, Jen, Professor of Computer Science, Ph.D., 2008, University of British Columbia
- Lima, Ivan, Associate Professor of Electrical and Computer Engineering, Ph.D., 2003, University of Maryland
- Lin, Wei, Associate Professor of Civil Engineering, Ph.D., 1992, New York State University-Buffalo
- Lin, Zhibin, Associate Professor of Civil Engineering, Ph.D., 2010, University of Wisconsin-Milwaukee
- Lin, Zhulu, Associate Professor of Agricultural and Biosystems Engineering, Ph.D., 2003, University of Georgia
- Liu, Lu, Assistant Professor of Computer Science, Ph.D., 2017, University of Texas at San Antonio
- Ludwig, Simone, Professor of Computer Science and Interim Department Chair, Ph.D., 2004, Brunel University
- Maassel, Michael, Visiting Assistant Professor of Electrical and Computer Engineering, Ph.D., 2013, North Dakota State University
- Magel, Kenneth, Professor of Computer Science, Ph.D., 1977, Brown University
- Malik, M. Zubair, Assistant Professor of Computer Science, Ph.D., 2014, University of Texas at Austin
- Monono, Ewumbua M., Assistant Professor of Agricultural and Biosystems Engineering, Ph.D., 2015, North Dakota State University
- Myronovych, Oksana, Associate Professor of Practice of Computer Science, Ph.D., 2009, North Dakota State University
- Nahar, Nurun, Assistant Professor of Agricultural and Biosystems Engineering, Ph.D., 2017, North Dakota State University
- Narayanan, Lokesh, Assistant Professor of Industrial and Manufacturing Engineering; Ph.D., 2019, North Carolina State University
- Nawarathna, Dharmakeerthi, Associate Professor of Electrical and Computer Engineering, Ph.D., 2005, University of Houston
- Nazari, G. H., Lecturer of Mechanical Engineering, Ph.D., 1977, Texas A&M University
- Pieri, Robert V., Professor of Mechanical Engineering, Ph.D., 1987, Carnegie-Mellon University
- Pryor, Scott W., Associate Dean for Undergraduate Programs, Professor of Agricultural and Biosystems Engineering, Ph.D., 2005, Cornell University
- Radermacher, Alex, Lecturer of Computer Science, MS, 2012, North Dakota State University
- Rahman, Shafiqur, Professor of Agricultural and Biosystems Engineering, Ph.D., 2004, University of Manitoba
- Salem, Saeed, Associate Professor of Computer Science and Graduate Coordinator, Ph.D., 2009, Rensselaer Polytechnic Institute
- Scherer, Thomas F., Associate Professor of Agricultural and Biosystems Engineering, Ph.D., 1986, University of Minnesota
- Selekwa, Majura, Associate Professor of Mechanical Engineering, Ph.D., 2001, Texas A&M University
- Srinivasan, Sudarshan, Associate Professor of Electrical and Computer Engineering, Ph.D., 2007, Georgia Institute of Technology
- Steele, Dean D., Associate Professor of Agricultural and Biosystems Engineering, Ph.D., 1991, University of Minnesota
- Steward, David, Professor and Chair of Civil and Environmental Engineering, Ph.D., 1996, University of Minnesota
- Stone, Matthew, Assistant Professor of Construction Management and Engineering, Ph.D., 2013, University of Alabama
- Straub, Jeremy, Assistant Professor of Computer Science, Ph.D., 2016, University of North Dakota
- Sun, Dali, Assistant Professor of Electrical and Computer Engineering; Ph.D. 2015, The University of Tokyo
- Sun, Xin, Assistant Professor of Agricultural and Biosystems Engineering, Ph.D., 2013, Nanjing Agricultural University
- Suzen, Bora, Associate Professor of Mechanical Engineering, Ph.D., 1998, Wichita State University
- Tangpong, Annie, Associate Professor of Mechanical Engineering, Ph.D., 2006, Carnegie Mellon University
- Tida, Umamaheswara R., Assistant Professor of Electrical and Computer Engineering; Ph.D. 2019, University of Notre Dame
- Ubhaya, Vasant, Professor of Computer Science, Ph.D., 1971, University of California-Berkeley
- Ulven, Chad, Professor of Mechanical Engineering, Ph.D., 2005, University of Alabama-Birmingham
- Vold, Jessica, Assistant Professor of Mechanical Engineering, Ph.D., 2015, North Dakota State University
- Wang, Danling, Assistant Professor of Electrical and Computer Engineering, Ph.D., 2014, 2003, University of Washington, Peking University
- Wang, Xinnan, Associate Professor of Mechanical Engineering, Ph.D., 2008, University of South Carolina
- Wang, Yechun, Associate Professor of Mechanical Engineering, Ph.D., 2007, University of Maryland

- Wu, Di, Assistant Professor of Electrical and Computer Engineering, Ph.D., 2011, Polytechnic University of Turin, Italy
- Wu, Xiangfa, Professor of Mechanical Engineering, Ph.D., 2003, University of Nebraska-Lincoln
- Xia, Wenjie, Assistant Professor of Civil and Environmental Engineering, Ph.D., 2016 Northwestern University
- Xu, Yiwen, Assistant Professor of Industrial and Manufacturing Engineering, Ph.D., 2015, University of Arizona
- Yadav, Om P., Professor of Industrial and Manufacturing Engineering, Ph.D., 2002, Wayne State University
- Yan, Changhui, Professor of Computer Science, Ph.D., 2005, Iowa State University
- Yang, Huojun, Assistant Professor of Construction Management and Engineering, Ph.D., 2012, University of Nebraska-Lincoln
- Yang, Mijia, Associate Professor of Civil Engineering; Ph.D., 2005, University of Akron
- Yellavajjala, Ravi Kiran, Assistant Professor of Civil Engineering, Ph.D., 2014, University of Notre Dame
- Yodo, Nita, Assistant Professor of Industrial and Manufacturing Engineering, Ph.D., 2017, Wichita State University
- Yu, Yao, Assistant Professor of Construction Management and Engineering, Ph.D., 2014, North Carolina A&T State University
- Zhang, Yan, Assistant Professor of Mechanical Engineering, Ph.D., 2013, Iowa State University
- Zhang, Yu, Assistant Professor of Agricultural and Biosystems Engineering, Ph.D., 2014, Nanjing Agricultural University
- Zhang, Qifeng, Assistant Professor of Electrical and Computer Engineering, Ph.D., 2001, Peking University
- Zhang, Zhao, Assistant Professor of Agricultural and Biosystems Engineering, Ph.D., 2015, Pennsylvania State University

Emeritus

- Andersen, Donald A., Emeritus Professor of Civil Engineering, Eng.D., 1982, Texas A&M University
- Backer, Leslie, Emeritus Professor of Agricultural and Biosystems Engineering, M.S., 1972, North Dakota State University
- Bares, William A., Emeritus Professor of Electrical Engineering, Ph.D., 1968, University of Wyoming
- Disrud, Lowell, Emeritus Professor of Agricultural and Biosystems Engineering, M.S., 1969, Kansas State University
- Ewert, Dan, Professor of Electrical and Computer Engineering, Ph.D., 1989, University of North Dakota
- Goplen, Sherman P., Emeritus Associate Professor of Mechanical Engineering, Ph.D., 1977, Texas A&M University
- Henderson, Allen J., Emeritus Professor of Industrial and Manufacturing Engineering, Ph.D., 1968, Iowa State University
- Hirning, Harvey, Emeritus Professor of Agricultural and Biosystems Engineering, Ph.D., 1970, Iowa State University
- Hofman, Vernon, Emeritus Professor of Agricultural and Biosystems Engineering, M.S., 1969, North Dakota State University
- Isgrig, Elvin, Emeritus Professor of Industrial and Manufacturing Engineering, M.S., 1983, North Dakota State University
- Knudson, Dean, Emeritus Professor of Computer Science, Ph.D., 1972, Northwestern University
- Kirschenman, Merlin D., Emeritus Associate Professor of Construction Management and Engineering, M.S., 1976, University of California-Berkeley
- Krause, Daniel J., Emeritus Professor of Electrical and Computer Engineering, Ph.D., 1972, Colorado State University
- Kucera, Henry L., Emeritus Professor of Agricultural and Biosystems Engineering, M.S., 1959, North Dakota State University
- La Palm, George L., Emeritus Professor of Civil Engineering, Ph.D., 1968, Purdue University
- Li, Kam, Emeritus Professor of Mechanical Engineering, Ph.D., 1965, Oklahoma State University
- Lindley, James A., Emeritus Associate Professor of Agricultural and Biosystems Engineering, Ph.D., 1972, Purdue University
- Lundstrom, Darnell R., Emeritus Professor of Agricultural and Biosystems Engineering, Ph.D., 1988, University of Minnesota
- Marinov, Val, Emeritus Professor of Industrial and Manufacturing Engineering, Ph.D., 1992, Technical University of Sofia, Bulgaria
- Nygard, Ken, Emeritus Professor of Computer Science, Ph.D., 1978, Virginia Polytechnic Institute and State University
- Padmanabhan, G., Emeritus Professor of Civil Engineering, Ph.D., 1980, Purdue University
- Pestes, Michael N., Emeritus Professor of Mechanical Engineering, M.S., 1959, North Dakota State University
- Peterson, Donald E., Emeritus Associate Professor of Electrical Engineering, M.S., 1958, North Dakota State University
- Rieder, William G., Emeritus Professor of Mechanical Engineering, Ph.D., 1971, University of Nebraska-Lincoln
- Rogers, David A., Emeritus Professor of Electrical and Computer Engineering, Ph.D., 1971, University of Washington
- Smith, Gary, Dean Emeritus of the College of Engineering, Professor Emeritus of Construction Management and Engineering, Ph.D., 1986, Purdue University
- Stegman, Earl C., Emeritus Professor of Agricultural and Biosystems Engineering, Ph.D., 1966, Michigan State University
- Stanislaw, Joseph, Emeritus Professor of Industrial and Manufacturing Engineering, Eng.Sc.D., 1970, Columbia University
- Stuehm, Donald L., Emeritus Professor of Electrical and Computer Engineering, Ph.D., 1972, Colorado State University
- Wiesenborn, Dennis P., Emeritus Professor of Agricultural and Biosystems Engineering, Ph.D., 1988, Rice University
- Ziejewski, Mariusz, Emeritus Professor of Mechanical Engineering, Ph.D., 1986, North Dakota State University