College of Engineering

Keya Sadeghipour, Ph.D., Dean
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1947 N. 12th Street
Philadelphia, PA 19122
215-204-8780
http://engineering.temple.edu/

Accreditation


ABET is a non-profit and non-governmental accrediting agency for academic programs in the disciplines of applied science, computing, engineering, and engineering technology recognized by the Council for Higher Education Accreditation (CHEA).

Introduced in the Fall of 2013, the Bioengineering and Engineering programs have applied for accreditation through the Engineering Accreditation Commission of ABET. Introduced in the Fall of 2015, the Environmental Engineering program will seek accreditation as soon as it graduates its first students.

Mission

The mission of the College of Engineering (COE) is to provide students with a high-quality, innovative, and globally-competitive learning experience in engineering, engineering technology, and the applied sciences. Engineering graduates are to be educated professionals with the technical, problem-solving, and communication skills required to succeed in the workplace and society.

The college is mindful of its obligation to be an environment for the creation of knowledge, and it encourages basic and cross-disciplinary applied research by faculty and students. We place great value on scholarship, practice, and service aimed at improving the quality of life and the economic viability of our society. This value system is reflected in how we assess faculty for promotion and tenure and how we grade student work.

We strive to pursue these objectives in a learning environment that celebrates ethnic and gender diversity, respects experience, and encourages problem solving through teamwork.

The college offers undergraduate curricula in engineering and engineering technology. Our engineering programs, leading to the Bachelor of Science in Engineering degree, prepare students for positions in engineering that require a broad preparation in mathematics and the engineering sciences at the entry level. They are recommended for those who expect to become registered professional engineers, pursue an advanced degree, or become involved in conceptual design, planning, research, and development in industry. The programs in engineering technology, which lead to the Bachelor of Science in Engineering Technology degree, educate students for careers as engineering technologists. They participate as members of the engineering team, translating concepts into functioning systems and supervising subsequent implementation by technicians and craftsmen.

Graduates of the COE find employment in manufacturing, construction management, sales engineering, inspection and quality control, production engineering and management, research and development, purchasing, technical field services, application engineering, computer systems and software manufacturing, and research or production involving computers. Following on-the-job experience, they can qualify for positions of a supervisory and managerial nature. Others may qualify as registered professional engineers.

Honors Program

For current information on the College Honors Program, contact Dr. Vallorie Peridier, Coordinator, by phone (215-204-7143) or e-mail (vallorie.peridier@temple.edu).

Cooperative Education & Internship

Full-time matriculated College of Engineering students who have a GPA of 2.5 or greater and who have completed at least 30 semester hours (at least 12 at Temple) toward the baccalaureate degree may apply for paid cooperative work experience (full-time) during spring or fall semesters. Students work at least 35 hours per week and are considered full-time students at Temple University. It can take additional time to complete the degree when participating in this program, but at least one semester of relevant work experience is gained. College of Engineering students may register and receive technical elective credits for their work experience with the Co-Op courses (ENGR 2181, ENGR 3181). These programs are managed by the Assistant Director of Industrial/External Relations and Co-Op Programs in the College of Engineering, Dean's Office, phone: 215-204-2537.

Students may also receive relevant work experience through internships, which are normally available during the summer terms. Because internships are offered over the summer, they allow students to finish in the traditional four years and still gain on-the-job experience.
Honor Societies, Awards, & Student Associations

Professional Societies & Organizations

The following professional societies and organizations are located within the College of Engineering:

• American Concrete Institute (ACI)
• American Society of Civil Engineering (ASCE)
• American Society of Heating, Refrigeration, and Air Conditioning Engineering (ASHRAE)
• American Society of Mechanical Engineers (ASME)
• Biomedical Engineering Society (BMES)
• Construction Management Student Organization (CMSO)
• Engineers Without Borders (EWB)
• Institute of Electrical & Electronics Engineers (IEEE)
• Minority Engineering Students Association (MESA)
• National Society of Black Engineers (NSBE)
• National Society of Professional Engineers (NSPE)
• Society of Automotive Engineers (SAE)
• Society of Hispanic Professional Engineers (SHPE)
• Society of Manufacturing Engineers (SME)
• Society of Women Engineers (SWE)
• Temple University Amateur Radio Club (TUARC)
• ETA KAPPA NU (Electrical Engineering Honor Society)
• PI TAU SIGMA (Mechanical Engineering Honor Society)

Program Information

Engineering

The programs in Civil Engineering, Electrical Engineering and Mechanical Engineering are accredited by the Engineering Accreditation Commission (EAC) of ABET, http://www.abet.org.

All engineering programs lead to a Bachelor of Science degree in the following fields of study:

• Bioengineering (B.S. BioE.)
• Civil Engineering (B.S.C.E.)
• Electrical Engineering (B.S.E.E.)
• Engineering (B.S.E.)
• Environmental Engineering (B.S. Env.E.)
• Mechanical Engineering (B.S.M.E.)

These degree programs also offer concentrations in the following areas:

• Environmental Engineering in B.S.C.E.
• Computer Engineering in B.S.E.E.
• Bioelectrical Engineering in B.S.E.E.

The Bioengineering and Engineering programs have applied for accreditation through the Engineering Accreditation Commission (EAC) of ABET. The Environmental Engineering program will seek accreditation as soon as it graduates its first cohort of students.

Engineering Technology

Engineering Technology programs are accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, http://www.abet.org.

These programs lead to a Bachelor of Science in Engineering Technology (B.S.E.T.) degree.

Two Engineering Technology programs are offered in the following areas:

• Construction Management Technology
• Engineering Technology
Student Contact Information
Center for Academic Advising and Student Affairs (Room 349)
College of Engineering
1947 N. 12th Street
Philadelphia, PA 19122
engradvr@temple.edu

Academic Policies & Regulations
Please see the full listing of university-wide Academic Policies (http://bulletin.temple.edu/undergraduate/academic-policies). The university policies and regulations generally apply to all undergraduate students and provide a framework within which schools and colleges may specify further conditions or variations appropriate to students in their courses or programs. Students are responsible for complying with all university-wide academic policies that apply to their individual academic status.

Co-requisites and Prerequisites
Students may be de-enrolled from courses for which they do not meet prerequisites and co-requisites. (Please see the Prerequisites and Co-requisites (http://bulletin.temple.edu/undergraduate/academic-policies/prerequisites-corequisites) policy for more information.) Students are responsible for reviewing and abiding by all course prerequisites and co-requisites in the Course Catalog (http://www.temple.edu/apply/common/catcheck.asp). The requirements are designed to assure that students are appropriately prepared to be successful in their courses. Prerequisites provide an efficient manner for students to register for the next course in a sequence for which they are prepared. Students who appropriately satisfy prerequisites are permitted to register for a first and second attempt. Completion of a prerequisite does not permit a student to enroll in the third attempt of a repeated course. Students may attempt a course for the third time only if they have received permission from the College, which is not guaranteed and may require additional coursework (See the Repeating a Course Policy below).

Dean's List
Each fall and spring semester, those undergraduates who have met the credit hour and academic criteria for their school or college are placed on the Dean's List. See the Dean's List (http://bulletin.temple.edu/undergraduate/academic-policies/deans-list) policy for specific GPA and credit-hour requirements.

Fly in 4
Fly in 4 is a partnership between incoming freshmen and the University. It limits the number of hours per week that students have to work for pay and guarantees that students can graduate in four years, potentially saving them thousands of dollars in debt. For more information on this program, see Undergraduate Admissions (http://admissions.temple.edu/cost-and-aid/fly-in-4).

Grading
Major, Minor, and GenEd courses must be completed with a letter grade of C- or higher unless otherwise specified. Certain courses may require a C or better in order to advance to the next course in a sequence or level.

Graduation Procedures
All College of Engineering students are required to complete a graduation review with an advisor in the Center for Academic Advising and Student Affairs prior to or at the start of their senior year. Students should schedule a review once they have completed 85 semester hours. The graduation review involves a detailing of the courses and credits completed and those that remain to be completed for graduation. Once the student and academic advisor complete the graduation plan (check sheet), the Center for Academic Advising and Student Affairs will forward the graduation check sheet to the student's department for the faculty advisor's approval. Final approval and clearance for graduation will be determined by the Director of Undergraduate Studies.

Students are expected to be active participants in the review and have equal responsibility for assuring the accuracy and completeness of the review.

Early in the semester in which students will complete their degree requirements, they must apply online via Self-Service Banner (SSB). For application deadlines, see the University's Undergraduate Graduation Procedures (http://bulletin.temple.edu/undergraduate/academic-policies/graduation-procedures).

Permission to Take Courses at Another Institution
Students in the College of Engineering who wish to take courses at another institution must petition the Center for Academic Advising and Student Affairs for approval prior to enrolling in such a course. Petition forms are available in the Center for Academic Advising and Student Affairs, College of Engineering, Room 349. The student is responsible for obtaining a course description from the other institution and attaching it to the petition form. The student takes the petition to the corresponding Temple department for faculty review and then submits the petition to the Center for Academic Advising and Student Affairs for final approval.
Courses taken without prior approval will not be transferable toward the Temple degree. In addition, students must have completed the prerequisites and have completed or be completing any listed co-requisites of both the Temple equivalent course and course at the host institution.

Please see the University policy on Permission to Complete a Course at Another Institution after Matriculation (http://bulletin.temple.edu/undergraduate/academic-policies/permission-complete-course-institution-matriculation) for more information.

Plagiarism and Academic Dishonesty

Plagiarism and academic dishonesty are prohibited by the College of Engineering. The development of independent thought and a respect for the thoughts of others is essential to intellectual growth. The prohibition of plagiarism and cheating is intended to foster this independence and respect. See the policy on Plagiarism (http://bulletin.temple.edu/undergraduate/academic-policies/plagiarism-academic-cheating) in this Bulletin.

The penalty for plagiarism or cheating as a first offense is normally an F in the course in which the offense is committed. In such cases, the instructor can either write a report or complete the Settlement of a Charge of Academic Dishonesty form and send it to the Center for Academic Advising and Student Affairs. The Center for Academic Advising and Student Affairs will forward to the Office of Student Conduct and Community Standards. The Office of Student Conduct and Community Standards generally adjudicates all cases and student appeals.

Repeating a Course

Students may attempt a course two times without restriction. Students in the College of Engineering are encouraged to meet with an advisor prior to attempting a course for the second time. A third attempt of any course is not guaranteed and requires permission of the student's home college. Petitions for a third attempt may require additional coursework, remediation, and/or academic/personal planning. Please refer to the University policy on Repeating a Course (http://bulletin.temple.edu/undergraduate/academic-policies/repeating-course) for further information.

College Graduation Requirements

Anticipation of Graduation

All College of Engineering (COE) students who intend to graduate in May, August, or January must have a graduation review at the completion of 85 credits. At the beginning of the final semester, the student must complete a graduation application. To earn the baccalaureate degree in any curriculum of the COE, a student must submit a graduation plan (check sheet), consisting of all required courses in the chosen curriculum, which has been approved by the student's academic advisor, chairperson, and Director of Undergraduate Studies. Required courses are indicated in curriculum checklists available from the student's respective department of instruction.

College Requirements for all Majors

Engineering Program

- 32 minimum credits in Math and Science
- 25 minimum credits in University General Education
- 50-65 credits in major (varies with major), minimum 2.0 GPA in the major
- 128 minimum credits total

Engineering Technology (CMT & ET) programs

- 24 minimum credits in Math and Science
- 25 minimum credits in University General Education
- 50-60 credits in major (varies with major), minimum 2.0 GPA in the major
- 124 minimum credits total

Notes:

1. The total number of credit hours at graduation may be greater for some students based on initial placement exams, transfer evaluations, individual curricular choices, and academic progress.
2. Students must fulfill the necessary prerequisites for any given course or course sequence. See the Prerequisite and Co-requisite Policy (http://bulletin.temple.edu/undergraduate/academic-policies/prerequisites-corequisites) in the university-wide Academic Policies section in this Bulletin.
3. The engineering programs are structured to prepare students for the professional practice of engineering and/or graduate study. The curricula emphasize a rigorous treatment of the mathematical and scientific approaches to the solution of engineering problems.
4. The final two years of study stress the synthesis of unique solutions rooted in the fundamental principles mastered during the first two years. These final years culminate in a design project.
Program Performance

A minimum cumulative GPA of 2.0 is required for graduation. Students majoring in engineering must attain a minimum GPA of 2.0 in their major courses in order to graduate. Students majoring in engineering technology and construction management technology must have a minimum GPA of 2.0 in their major courses.

Independent Research

Independent student work on a laboratory investigation or design project must be approved by the chairperson of the respective department and the assigned faculty supervisor. Work is graded on research methodology, research results, and a report. Only seniors or juniors with a minimum GPA of 3.0 may apply for independent research. Approved projects must be completed in one academic year.

Independent Study

A student is permitted to take no more than two independent study courses. Permission is granted only if a student needs the course to complete his/her studies. They can be taken only in the junior and senior years. The content of the independent study work must cover the material in one of the courses listed in the curriculum. Students must complete an independent study form in their department prior to registration for the independent study.

Transfer Credit

Transfer credit to the COE can be granted only from an accredited institution of higher learning. Co-op education and credit for life experience are not transferable from other institutions. Advanced placement credits must follow Temple's advanced placement credit policy and equivalencies. Transfer credits are not granted after a student has matriculated into a degree program. Students may take courses at other institutions and have transfer credits awarded provided they are meeting Temple's Permission to Complete Courses at Another Institution After Matriculation (http://bulletin.temple.edu/undergraduate/academic-policies/permission-complete-course-institution-matriculation) guidelines. The dean must approve permission for such arrangements in advance. Senior Design Projects or Capstone courses are not transferable to the college.

Courses Inapplicable to Graduation

Semester hours earned in MATH 0701 or MATH 0702, lower-level military science (ROTC), and RCC-enhanced courses are not credited toward the minimum semester hours required for graduation.

Students will not be awarded duplicate credit for courses that are repeated in transfer or at Temple.

Non-Traditional Credits

A maximum of 12 semester hours of credit will be allowed by the COE in cooperative education, relevant work experience, approved ROTC courses, and Advanced Placement or CLEP examinations. No other non-traditional credit will be granted.

Credit for Life Experience

Degree seeking students may be granted academic credits for work experience if it is judged to be an adequate substitute for all or part of particular courses required of the student. Experience must be related to a specific course in the curriculum offered by the college. Work experience must be acquired before entering Temple University. Credit will only be granted after completion of 30 semester hours of coursework. Application forms are available in the Center for Academic Advising and Student Affairs (Engineering Building, Room 349).

Academic Advising

Shawn Fagan
Director of Undergraduate Studies
Center for Academic Advising and Student Affairs
Engineering Building, Room 347a
sfagan@temple.edu

Advising for the Major in the College of Engineering

Civil and Environmental Engineering Department
Engineering Building, Room 513
215-204-7814
ceed@temple.edu

Electrical and Computer Engineering Department
Engineering Building, Room 711
215-204-7597
eegrad@temple.edu

Mechanical Engineering Department
Engineering Building, Room 610
All students in the College of Engineering (COE) have the flexibility to meet with any of the academic advisors in the Center for Academic Advising and Student Affairs once they have officially matriculated in the College of Engineering. The student's academic advisor will confirm that the courses selected yield credits toward a degree and that the requirements of Temple University, COE, and the academic department are being met. Reference should be made to this Bulletin and to DARS in planning programs.

Academic advisors attempt to avoid errors when advising students about their program requirements, but schools and colleges cannot assume liability for errors in advising. Therefore, students must assume primary responsibility for knowing the requirements for their degrees and for acquiring current information about their academic status.

**Faculty**

**Bechara E. Abboud**, Associate Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Drexel University.

**Fauzia Ahmad**, Associate Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., University of Pennsylvania.

**Berk Ayranci**, Instructor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; M.S.M.E., Temple University.

**Li Bai**, Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., Drexel University.

**George Baran**, Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Michigan.

**Evangelia Bellas**, Assistant Professor, Department of Bioengineering, College of Engineering; Ph.D., Tufts University.

**Leonard K. Bernstein**, Instructor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; M.S., University of Pennsylvania.

**Saroj K. Biswas**, Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., University of Ottawa.

**Robert M. Brooks**, Associate Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Indian Institute of Technology.

**David S. Brookstein**, Professor, Department of Mechanical Engineering, College of Engineering; Sc.D., Massachusetts Institute of Technology.

**Shih-Juin Chen**, Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., Drexel University.

**Harsh Deep Chopra**, Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Maryland College Park.

**Joseph Thomas Coe Jr.**, Assistant Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of California Los Angeles.

**Richard S. Cohen**, Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., Princeton University.

**Philip Dames**, Assistant Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Pennsylvania.

**Kurosh Darvish**, Associate Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Virginia.

**Zdenka J. Delalic**, Associate Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., University of Pennsylvania.

**Dmitriy A. Dikin**, Associate Professor (Research), Department of Mechanical Engineering, College of Engineering; Ph.D., National Academy of Sciences of Ukraine, Institute for Low Temperature Physics and Engineering.

**Oleksandr Dilayan**, Assistant Professor (Teaching/Instructional), Department of Mechanical Engineering, College of Engineering; Ph.D., Donetsk National Technical University.

**Ahmed Faheem**, Assistant Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of Wisconsin.

**Bojana Gligorijevic**, Assistant Professor, Department of Bioengineering, College of Engineering; Ph.D., Georgetown University.

**Yah-el Har-el**, Assistant Professor (Research), Department of Bioengineering, College of Engineering; Ph.D., Johns Hopkins University.
John J. Helferty, Associate Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., Drexel University.

Parsaoran Hutapea, Associate Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., North Carolina State University.

Mohammad F. Kiani, Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., Louisiana Tech University.

Sanghun Kim, Assistant Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Syracuse University.

Peter Leikes, Professor, Department of Bioengineering, College of Engineering; Ph.D., RWTH Aachen University.

Michel Lemay, Professor, Department of Bioengineering, College of Engineering; Ph.D., Case Western Reserve University.

Haijun Liu, Assistant Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Maryland College Park.

Muruganandham Manickavachagam, Assistant Professor (Research), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Annamalai University.

Erica R. McKenzie, Assistant Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of California Davis.

William C. Miller, Associate Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of Pennsylvania.

Iyad Obeid, Associate Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., Duke University.

Ruth Ochia, Associate Professor (Teaching/Instructional), Department of Bioengineering, College of Engineering; Ph.D., University of Washington.

Chetan A. Patil, Assistant Professor (Research), Department of Bioengineering, College of Engineering; Ph.D., Vanderbilt University.

Valorie J. Peridier, Associate Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., Lehigh University.

Joseph Picone, Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., Illinois Institute of Technology.

Shriram Pillapakkam, Associate Professor (Teaching/Instructional), Department of Mechanical Engineering, College of Engineering; Ph.D., New Jersey Institute of Technology.

Nancy Pleshko, Professor, Department of Bioengineering, College of Engineering; Ph.D., Rutgers University.

David Reiser, Assistant Professor (Teaching/Instructional), Department of Mechanical Engineering, College of Engineering; Ph.D., University of Illinois at Urbana-Champaign.

Fei Ren, Assistant Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., Michigan State University.

Shenqiang Ren, Associate Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Maryland College Park.

Steven M. Ridenour, Professor Emeritus, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Miami.

Avner Ronen, Assistant Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Technion - Israel Institute of Technology.

Robert J. Ryan, Associate Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Drexel University.

Keyanoush Sadeghipour, Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Manchester Institute of Science and Technology.

Sergio E. Serrano, Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of Waterloo.

Dennis A. Silage, Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., University of Pennsylvania.

Andrew Spence, Associate Professor, Department of Bioengineering, College of Engineering; Ph.D., Cornell University.

Won Hyuk Suh, Assistant Professor, Department of Bioengineering, College of Engineering; Ph.D., University of Illinois at Urbana-Champaign.

Thomas E. Sullivan, Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., The Pennsylvania State University.

Rominder Suri, Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Michigan Technological University.
Rouzbeh Tehrani, Assistant Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Temple University.

Philip D. Udo-Inyang, Associate Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of Missouri-Columbia.

Felix F. Udoeyo, Assistant Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Abubakar Tafawa Balewa University.

Dmitri Vainchtein, Assistant Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., University of Illinois at Urbana-Champaign.

Benoit Van Aken, Assistant Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Catholic University of Louvain.

Evelyn Walters, Assistant Professor (Teaching/Instructional), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Technische Universität München.

Chang-Hee Won, Associate Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., University of Notre Dame.

Jie Yin, Assistant Professor, Department of Mechanical Engineering, College of Engineering; Ph.D., Columbia University.

Hui Yu, Assistant Professor (Research), Department of Civil and Environmental Engineering, College of Engineering; Ph.D., University of Regina.

Huichun Judy Zhang, Assistant Professor, Department of Civil and Environmental Engineering, College of Engineering; Ph.D., Georgia Institute of Technology.

Yimin Daniel Zhang, Associate Professor, Department of Electrical and Computer Engineering, College of Engineering; Ph.D., University of Tsukuba.