

ENGINEERING THE FUTURE

NEURAL COMPUTING AND AI-ENABLED ANALYSIS AND DESIGN

GLOBAL EDUCATION & TRAINING

Undergraduate Summer Course

June 29 - July 13, 2025

Engineering the Future offers an innovative introduction to engineering analysis and design for CS students, while introducing machine learning trends (including generative AI) to non-CS engineering students. The course introduces fundamental and applied concepts in neural computing as well as applications to engineering system analysis and design. The concepts taught in the course are readily applicable to a variety of engineering domains.

This program is offered in collaboration with faculty in the University of Illinois Urbana-Champaign's Grainger College of Engineering, a global leader in engineering education and research across every discipline.

FACULTY PROFILE



Associate Professor Ahmed E. Elbanna holds a Ph.D. in civil engineering (2011) and an M.S. in applied mechanics (2006), both from the California Institute of Technology, and an M.S. in structural engineering (2005) and B.S. in civil engineering (2003) from Cairo University. He joined the Illinois faculty in 2013. His honors include the National Science Foundation CAREER award, 2018, Fellowship of the National Center of Supercomputing Applications, 2015, the George Housner Fellowship, California Institute of Technology, 2005, and a Certificate of Honor, National Ceremony of Science, Egypt, 2004.

#1

CIVIL ENGINEERING
GRADUATE PROGRAM

#4

ENVIRONMENTAL
ENGINEERING GRADUATE
PROGRAM

#22

CENTER FOR WORLD
UNIVERSITY RANKINGS

#3

CIVIL ENGINEERING
UNDERGRADUATE
PROGRAM

#5

OVERALL UNDERGRADUATE
ENGINEERING PROGRAM

PROGRAM COMPONENTS

Academic Sessions (34 Hours)

On-campus academic sessions, including faculty lectures, Teaching Assistant-led discussions and Q&A sessions, and final project presentations and evaluation. Faculty will evaluate the final research project presentation and provide feedback to students for their improvement. Teaching assistants will guide students' understanding of the topics by highlighting key points from the lectures, going through examples, and answering students' questions.

Co-Curricular Sessions (4 Hours)

Co-curricular sessions will diversify students' learning experiences and outcomes. Students will attend guest speaker/panelist sessions with Global Education and Training staff, faculty, Ph.D. students, and alumni. Topics may include applications and admissions process for graduate studies; writing a personal statement; conducting research as a doctoral student; keys to a successful engineering career; and more. The overall course will conclude with a learning outcome showcase and a course recognition ceremony led by university staff. The overall course will conclude with learning outcomes presentations by students and a course recognition ceremony led by university staff.

Independent Learning

In addition to class sessions, students are expected to devote time every day to complete homework, work on the team project, prepare for presentation slides, and write the project summary report. The instructor and TAs will provide as much help as they can during this learning experience.

Week Overview (U.S. Dates)	Activity	Duration (50 minutes)
Week 1 (June 29 - July 5)	Orientation	2
	Faculty lectures	8
	TA-led office hours	6
	Co-curricular hours	2
	Field trips	All Day Saturday
Week 2 (July 6 - 13)	Faculty lectures	8
	TA-led office hours	8
	Co-curricular hours	2
	Final Presentations & Program Reception	6

Total: 42 hours

TECHNOLOGY REQUIREMENTS

Participants should bring their own Wi-Fi compatible device (laptop, or tablet) suitable for participation in live classroom sessions and completion of homework and required reading assignments for the duration of the program.

PROGRAM FORMAT & FEES: \$4,500/PERSON

The program will be conducted in-person on the Urbana campus. Students will attend live lectures sessions, TA-led office hours, and co-curricular sessions. Course materials will be accessible to all participants one week before the start of the course. An orientation will be hosted by GET staff before the course begins with instructions to access the LMS/Canvas and other materials necessary for successful completion of the program.

The program fee covers instructor and classroom costs; course materials; transportation (city bus pass, airport to campus, cultural travel); access to recreation facilities; tickets for tours and cultural activities; access to the university WiFi network; room and board. Does NOT include airfare or health insurance.

Apply Now

Deadline to apply is April 15, 2025. Please reach out to your university's international office to apply. Please direct questions to Global Education and Training via email:

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remarine@illinois.edu

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