COLUMBIA UNIVERSITY

Department of Civil Engineering and Engineering Mechanics

DOCTORAL STUDENT HANDBOOK

MS-PhD · PhD · DES Programs

Prepared for incoming and continuing doctoral students

Academic Year 2026–27

Table of Contents

Welcome 3

Department Administration 4

Carleton Laboratory 4

Master of Science (MS) Degree 5

Doctor of Philosophy (PhD) Degree 6

Doctor of Engineering Science (DES) Degree 9

Other Information for MS-PhD / PhD Students 10

Department Life 12

Campus Resources 13

Welcome

Welcome to the Department of Civil Engineering and Engineering Mechanics! This handbook is intended to provide doctoral students in the department with information about their academic program and requirements.

It is expected that incoming students will have received information regarding non-department matters (housing, ID cards, UNI activation, etc.) from Engineering Student Affairs and other units within the University.

All new students are added to respective department e-mail lists before the start of their first semester. Communications from the department, such as event announcements and job postings, will be distributed to students via e-mail.

> **Questions?**
>
> Please do not hesitate to reach out to the CEEM Department staff at any time — contact details for every office are listed throughout this handbook.

Department Administration

Role	Name	Email
Department Chair	**Andrew Smyth**	aws16@columbia.edu
Department Vice Chair	**Shiho Kawashima**	sk2294@columbia.edu
Director of Finance and Administration	**Ann Madigan**	alk1@columbia.edu
Manager of Student Affairs and Graduate Admissions	**Scott Kelly**	stk2110@columbia.edu
Finance and Grants Manager	**Laura Lichtblau**	al44@columbia.edu
Career Placement Officer	**Jenna Kumabe**	jk5125@columbia.edu
Operations Manager	**Nathalie Benitez**	nr2516@columbia.edu
IT System Manager	**Michael Smith**	mas2006@columbia.edu

Carleton Laboratory

Role	Name	Email
Director, Carleton Lab	**Adrian Brügger**	brugger@civil.columbia.edu
Associate Director, Carleton Lab	**William Hunnicutt**	hunnicutt@civil.columbia.edu
Centrifuge Lab Manager	**Liming Li**	li@civil.columbia.edu
Associate Manager, Carleton Lab	**Freddie Wheeler**	few2111@columbia.edu
Senior Engineer, Carleton Lab	**Amos Fishman-Resheff**	af3453@columbia.edu
Senior Fabrication Engineer, Carleton Lab	**Clara Wilson**	cw3376@columbia.edu

Master of Science (MS) Degree

For MS-PhD track students.

Degree Requirements

Candidates for the MS degree must complete a minimum of 30 credits of graduate-level coursework while maintaining a minimum GPA of 2.5. All courses must be taken for a letter grade (A–F). Courses at the 4000 level and above (e.g., ENME E4332 Finite Element Analysis I) are considered graduate-level courses.

MS degree candidates must complete a minimum of six courses (18 credits) within the CEEM department, and they may count up to six credits of CIEN E9101 Civil Engineering Research with a faculty member towards the MS degree. MS students may count up to four courses (12 credits) from outside of the CEEM department towards their degree with the approval of their faculty adviser.

Registration

Students register for courses through Student Services Online (SSOL). Students in the MS-PhD track are expected to finish their MS degree requirements in no more than three semesters.

> **Important — Registration Deadlines**
>
> MS-PhD track students receiving a Fellowship or appointed as a Teaching Assistant or Graduate Research Assistant must be registered for at least 12 credits by the end of the early registration period before the start of the following semester (April for Fall, November for Spring). Tuition and other disbursements are only processed for registered students; failure to register on time may delay tuition, insurance, and stipend processing. Courses may be added or dropped during the Change of Program period.

Applying for the MS Degree

To officially be considered for the MS degree, students must apply via the “Degree App Status” tab in SSOL. Upon receiving the MS degree, MS-PhD students begin their PhD requirements the following semester in the Graduate School of Arts and Sciences.

Doctor of Philosophy (PhD) Degree

Degree Requirements

- 30 credits of coursework beyond the MS degree — all courses at the graduate level (4000 and above)
- Six credits of research (CIEN E9101) with the faculty adviser, counted toward the 30-credit minimum
- At least two graduate-level mathematics courses during the first two years of study
- A minimum GPA of 3.25 during the first two years of study
- Six Residence Units (two earned for completing an MS degree at Columbia or elsewhere)
- Qualifying Exam
- Dissertation Distribution, Defense, and Deposit

> **Timeline**
> PhD students are expected to complete their 30 required credits (24 from coursework and six from research) by the end of their second year. Students may continue to take courses after reaching 30 credits.

Registration

All full-time PhD students register for one Residence Unit – Morningside Campus (RESI G0001) each Fall and Spring semester until four Residence Units have been completed. A Residence Unit signifies full-time study toward the PhD; students register for courses in addition to the Residence Unit, through SSOL.

Advance Standing: PhD students are awarded 30 credits and two Residence Units of advance standing for having completed an MS degree at Columbia or elsewhere. Students must then complete 30 credits and four Residence Units while enrolled in the Graduate School of Arts and Sciences.

Sponsored PhD students who have completed their Residence Unit requirement must register for Extended Residence F/T (EXRS G0001); courses may still be taken while registered for Extended Residence.

PhD students must be registered for the semester in which their dissertation distribution takes place — this is the student's final registered semester:

- Distribution on/after the first day of Fall and before the first day of Spring → final registration is Fall
- Distribution on/after the first day of Spring and before the first day of Summer → final registration is Spring
- Distribution on/after the first day of Summer and before the first day of Fall → final registration is Summer

All courses counted toward the 30-credit requirement must be taken for an A–F letter grade; courses taken pass/fail or for R (registration) credit do not count.

> **Important — Registration Deadlines**
>
> PhD students receiving a Fellowship or appointed as a Teaching Assistant or Graduate Research Assistant must be registered for at least 12 credits by the end of the early registration period before the start of the following semester (April for Fall, November for Spring). Tuition and other disbursements are only processed for registered students; failure to register on time may delay tuition, insurance, and stipend processing. Courses may be added or dropped during the Change of Program period.

Qualifying Exam

The Qualifying Exam consists of a research presentation around the end of the second year, with both a written and an oral component. The student must submit a written 5–10 page proposal for the PhD topic to the committee at least 10 days prior to the oral exam. During the oral component, the student presents the proposal and answers questions on both the proposal and the chosen research area.

The format of the proposal is decided in consultation with the faculty adviser, and may include a literature review, hypotheses to be tested, proposed research methods, results acquired to date, and a proposed schedule for completing the remaining research.

The Qualifying Exam committee consists of three faculty members — the student's adviser and two others, at least one of whom must be from the CEEM department. It is the adviser's responsibility to invite committee members.

The committee decides the exam result:

- Pass
- Re-examination required — the adviser provides feedback on areas to strengthen before a re-exam is scheduled
- Fail

Master of Philosophy Degree

Upon completing all PhD requirements except the dissertation, PhD candidates are eligible to apply for the Master of Philosophy (MPhil) degree. Students should complete the top section of the MPhil application and submit it to the department office for processing. The MPhil degree may not be received on the same conferral date as the PhD.

Dissertation Distribution, Defense, and Deposit

PhD candidates must complete several steps as part of the dissertation distribution, defense, and deposit process. The following materials must be submitted to the Dissertation Office in a timely manner:

- Application for the Dissertation Defense Form — submitted by the CEEM department no less than two weeks prior to the defense date
- Deposit Approval Card — submitted by the student after passing the defense and having dissertation revisions approved

Doctor of Engineering Science (DES) Degree

Degree Requirements

The requirements for the DES degree are identical to the PhD with respect to coursework, the Qualifying Exam, and the dissertation. However, instead of completing four Residence Units beyond the MS degree, DES candidates must complete 12 credits of CIEN E9800 Doctoral Research Instruction after finishing their 30 credits of coursework. These 12 credits do not count toward the 30 credits required for the degree. DES candidates do not apply for the Master of Philosophy degree.

Registration

Students register for courses through SSOL and must be registered for at least one course before the first day of each semester. Students who are not registered for at least one course are responsible for paying a Late Registration Fee.

Applying for the DES Degree

The CEEM department completes and submits the Application for the Degree of Doctor of Engineering Science to the Office of Graduate Student Affairs on behalf of DES students.

Other Information for MS-PhD / PhD Students

Seating

All sponsored MS/PhD and PhD students are allocated a desk in one of the department's spaces on the 6th floor of Mudd or in 271 Engineering Terrace.

Student Accounts

Sponsored graduate students are required to pay the following charges by the end of the Change of Program period at the start of each semester:

- One-time Document Fee (first semester of enrollment only)*
- Student Activity Fee during the Fall and Spring semesters*
- Any other charges not covered by the department, e.g., Dining Dollars, rent, etc.

**The CEEM Department covers these fees for Presidential Fellows.*

The CEEM Department covers the following charges for sponsored graduate students:

- Tuition (for the Residence Unit or Extended Residence) up to 18 credits
- Medical insurance under the Columbia University Student Health Insurance Plan
- Health and Related Services Fee
- University Services and Support Fee
- International Services Charge during Fall and Spring semesters (international students)
- I-20 Processing Fee (international students, first semester at Columbia)

> **Note on Late Fees**
>
> The CEEM Department only covers late fees for charges it is responsible for paying (tuition, medical insurance, Health and Related Services Fee, University Facilities Fee, International Services Charge). Late fees for any other charges are the responsibility of the student.

Payment and Direct Deposit

Stipends are issued to students on fellowships and paid in full at the start of the term — register for Direct Deposit through SSOL.

Salary is paid twice monthly for PhD Student Officers appointed as Teaching Assistants or Graduate Research Assistants. Paychecks are mailed to the address on record until Direct Deposit is set up via MyColumbia ("View and/or Update your Personal Data").

Medical Insurance

Columbia offers medical insurance under the Columbia University Student Health Insurance Plan. Students must re-enroll each year for the upcoming academic year; open enrollment runs from mid-July through the end of September.

Practical Training (PT)

Practical Training allows students on F-1 visas to apply for temporary employment in their field of study.

Curricular Practical Training (CPT)

F-1 students on the PhD track may register for ENGI E8000 Doctoral Fieldwork and apply for CPT to complete an internship necessary and integral to the completion of their dissertation. Engineering PhD students may register for ENGI E8000 for a maximum of two semesters, including summer.

Optional Practical Training (OPT)

F-1 students must apply for OPT to work in the U.S. following graduation. The application window opens 90 days before program completion and closes 60 days after.

> **Practical Training Questions**
>
> Direct questions about Practical Training to the Manager of Graduate Admissions and Student Affairs, Scott Kelly (stk2110@columbia.edu).

Department Life

Department Seminars

The CEEM Department hosts a seminar series featuring visiting faculty members from other universities on Tuesdays from 2:00–3:00 PM. The department typically holds 10–12 seminars per semester, and all PhD students are encouraged to attend. Students in years 1–3 of the PhD program are required to attend two-thirds of the seminars each semester.

Social and Career Events

- Doctoral Student Seminars
- Graduate Student Socials
- Career Panels — Academia and Industry

Student Organization

CEEM Graduate Student Council

Campus Resources

Columbia Engineering Graduate Student Affairs

530 Mudd
Phone: 212-854-6438
Email: seas_gsa@columbia.edu
Website: gradengineering.columbia.edu

Columbia Engineering Wellness

Charlene Bernasko, Associate Director of Graduate Student Wellness & Support Services
530 Mudd
Email: cab2298@columbia.edu
Website: wellness.engineering.columbia.edu

Columbia University Health Services — Primary Care

John Jay Hall, 4th Floor
Phone: 212-854-7426
Appointments: health.columbia.edu/content/make-appointment

Columbia University Counseling and Psychological Services

Lerner Hall, 8th Floor
Phone: 212-854-2878
Website: health.columbia.edu/content/counseling-and-psychological-services

Columbia University Registrar

205 Kent Hall
Phone: 212-854-4400
Email: registrar@columbia.edu
Website: registrar.columbia.edu

Columbia University Public Safety

101 Low Library
Phone: 212-854-2797
Emergency: 212-854-5555
Website: publicsafety.columbia.edu

Graduate School of Arts and Sciences Dissertation Office

107 Low Library
Email: gsas-dissertations@columbia.edu
Website: gsas.columbia.edu/content/dissertation

International Students and Scholars Office (ISSO)

International House North, 524 Riverside Drive, 1st Floor
Phone: 212-854-3587
Email: isso@columbia.edu
Website: isso.columbia.edu

Student Services Online (SSOL)

ssol.columbia.edu