UNIVERSITY OF PITTSBURGH – DEPARTMENT OF
CIVIL & ENVIRONMENTAL ENGINEERING
UNDERGRADUATE REGISTRATION GUIDE

Registration procedure Newly admitted students should make an appointment with the Academic Coordinator for their first registration. For subsequent registrations the students should sign up with their assigned advisor (posted on the CEE Bulletin Board) during the week preceding the registration. Substitutes for the courses listed by name and number in the CEE curriculum will not be normally allowed.

CEE 0085 – Sophomore Seminar is required for all new students in the Department in the first Fall Term after admission, in addition to the Departmental Seminar.

CEE 1085 – Departmental Seminar is required for all students in the Department in every term of full-time registration until graduation. Only one un-excused seminar is allowed in a Term. More than one un-excused seminar will result in a "U" grade unless makeup work is completed by the student.

Remedial courses, required to remove a deficiency such as Basic Writing, English Composition, Algebra, and Trigonometry, will not be counted toward the credit requirements for the degree but the grades will be using in determining the student's QPA.

The Humanities and Social Science Electives (including the freshman electives) must be selected from the School of Engineering approved list of electives (posted on the CEE Bulletin Board) and must come from at least two humanity areas and two social science area

The Engineering Elective is an approved course in another engineering department. The list of approved engineering electives is attached. Other courses may be approved if prerequisite requirements are met.

CEE Electives Any 3 or 4 credit CEE 1000 level undergraduate or CEE 2000 level graduate course is suitable, provided the student has satisfied the prerequisites. Co-Op experience provided certain conditions are met may substitute one CEE elective. (Ask for additional details.) The CEE electives (including the design electives) must include at least one course in at least four of the six basic areas. (ABET second course requirement.)

Area of Concentration By the end of the fifth term, or when completing the required basic CEE courses scheduled for the fifth term, each student must declare the intent, in any, to complete an Area of Concentration. This will allow a student to specialize in one of the following areas: Construction Management, Structural, Water Resources, Environmental, Transportation or Geotechnical and Pavement Engineering, by completing a set of specified courses as outlined in the table below. The completed Area of Concentration will be identified on the student's transcript.

Senior Design Project (CEE 1233, 1333, 1433, 1533, 1733 or 1833) seniors may register. These are group projects, directed by practicing engineers, where students from various specialty areas contribute their expertise to the project and learn to coordinate it with the work of students from other specialty areas.

DECLARATION OF INTENT TO ELECT AN AREA OF CONCENTRATION

AREA OF CONCENTRATION	PROGRAM COURSE	DESIGN PROJECT	ELECTIVES
Construction Management And Sustainability	1203	1233	1. Four design courses in four different areas (*) 2. Two additional courses from(**): 1209, 1210, 1211, 1216, 1217, 1218, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2209, or GEOL 1445
Structural Engineering	2330	1333	1. Four design courses in four different areas (*) 2. Two additional courses from: 1340, 1341,1370, 2320, 2331, 2333, 2340, 2341, 2343, 2346, 2360, or one of 1821 or GEOL 1445
Water Resources Engineering	1412	1433	1. Four design courses in four different areas (*) 2. Two additional courses from (**): 1410, 2401, 2405, or GEOL 1445
Environmental Engineering	1513	1533	1. Four design courses in four different areas (*) 2. Two additional courses from (**): 1505, 1514, 1515, 1523 2500, 2501, 2502, 2504, 2506, 2507, 2508, 2509, 2511, 2800, or GEOL 1445
Geotechnical and Pavement Engineering	2800	1833	1. Four design courses in four different areas (*) 2. Two additional courses from (**): 1340, 1714, 1715, 1717, 1718, 1821, 2801, 2802, 2814, 2818, ENGR 1630, or GEOL 1445
Transportation Engineering	2700	1733	1. Four design courses in four different areas (*) 2. Two additional courses from (**): 1714, 1715, 1717, 1718, 2700, 2710, 2711, 2720, 2721, 2722, 2731, 2730, 2750, or GEOL 1445
General Civil Engineer (i.e. no area of concentration)			1. Four design courses in four different areas (*) 2. Senior Design Project: 1233, 1333, 1433, 1533, 1733, or 1833 3. Three additional electives from any area (**)

(*) One course from each of the following areas
Structural design (1340 or 1341)
Water resources design (2400, 2401, 2405, or 1410)
Environmental design (1505, 1513, 1515, or 2507)
Geotechnical or pavement design (1821, 1714, 1715, or 2814)

(**) If a course was used to fulfill any requirement (design elective, sustainability or engineering elective), it can be used as a CEE elective.

*Any student not electing to specialize may complete a generalized program in Civil and Environmental Engineering by choosing the elective courses according to interest. In this case, the student must select the elective courses so as to acquire the desired breadth in the civil engineering discipline by covering at least four of the six areas.

CEE 1996 – Special Project, 1, 2, 3, or 4 credits. This should be used only in special cases, to make up for partial deficiencies in a student's curriculum, if required by the Academic Coordinator.

A student may normally register for a maximum of 18 credits in any term. Students who have Cumulative and Last Term QPA's of 2.75 or higher may register for one additional course per term.

A student may take additional courses, which are not required for the degree, provided the prerequisites are met. These may be taken on a letter grade or any other available option. If a letter grade is obtained, the credits will not be counted toward the degree requirements but will be used in determining the student's Q.P.A. A maximum of two graduate courses with "B" or better grades, taken beyond the B.S. degree requirements in the final term, may be transferred into a graduate program.

A "Satisfactory" grade is acceptable only for the CEE Seminars and the non-technical electives, within the limitations outlined in the School of Engineering Bulletin. Only a letter grade is acceptable for courses listed by number and title in the curriculum and for the technical electives (i.e. CEE courses and Engineering Electives.)

F, G, I, U, and Z grades. A student cannot graduate with any of these for a last grade in a required course. These grades should be removed either by completing the course requirements, or by repeating the course, or by substituting another (approved) course. A G grade must be removed within one year.

Students should review with the Academic Coordinator their status in the curriculum when registering for the last term to ensure that all requirements for graduation will be satisfied.

MINIMUM GRADE REQUIREMENTS FOR CEE PROGRAM

- ENGR 0131: C
- ENGR 0141: C
- CEE 1330: C-
- CEE 1402: C-
- CEE 1503: C-
- CEE 1811: C-

APPROVED ENGINEERING ELECTIVES

Note that some of these courses require prerequisites, but CEE Juniors should have completed them. Additional courses may be approved and posted if available in a particular term. Other courses may be approved provided the student has completed the required prerequisites.

BIOENG	1050	Artificial Organs II
BIOENG	1150	Bioengineering Methods and Applications
BIOENG	1531	Fundamentals of Biochemical Engineering
BIOSC	0150	Foundations of Biology I
BIOSC	0715	UHC Foundations of Biology I
CHE	0035	Introductory Chemical Engineering
CHEM	0310	Organic Chemistry
COE/EE	0031	Linear Circuits and Analysis
COE/EE	0132	Digital Logic
ENGR	0241	Fabrication and Design in Nanotechnology
ENGR	1050	Product Realization
ENGR	1076	Total Quality Management
ENGR	1500	Ethical Dilemmas: Balancing Cost, Risk, & Scheduling
ENGR	1600	Global Engineering Technology
ENGR	1630	Underground Coal Mining
ENGR	1634	Mine Environmental Engineering
ENGR	1635	Mine Ventilation Engineering
ENGR	1636	Advanced Mining Systems
ENGR	1637	Strata Control Engineering
ENGR	1700	Introduction to Nuclear Engineering
ENGR	1869	Introduction to Electrical Engineering for Non-EE's
EOH	2013	Environmental Health & Disease
EOH	2104	Introduction to Environmental and Occupational Health Law
EOH	2120	Chemical and Biological Agents I
EOH	2504	Principals of Environmental Exposure
EOH	2505	Introduction to Occupational and Environmental Health
GEOL	0800	Geology
GEOL	0860	Environmental Geology
GEOL	0890	Physical Oceanography
GEOL	1445	GIS, GPS and Computer Methods
IE	1038/2038	Integrated Product Development
IE	1054	Productivity Analysis
IE	1061	Huan Factors Engineering
IE	1071	Probability and Stat for Engr II
IE	1081	Operations Research
IE	2030	Behavioral Systems Engineering
MEMS	0031	Electrical Circuits
MEMS	1056	Energetics
MEMS	1172	Physical Metallurgy of Engineering Alloys
PETE	1160	Petroleum Reservoir Engineering
PETE	1202	Petroleum Drilling and Production
PHYS	0480	Principles of Modern Physics I
PHYS	0577	Modern Physical Measurements

LIST OF DESIGN ELECTIVE COURSES

STRUCTURES:
- CEE 1340: Concrete Structures I
- CEE 1341: Steel Structures I

WATER RESOURCES:
- CEE 2401: Open Channel Hydraulics
- CEE 2405: Groundwater Hydrology
- CEE 1410/2410: Water Resources Engineering

ENVIRONMENTAL ENGINEERING:
- CEE 1505/2505: Water Treatment & Distribution System Design

CEE 1507/2507: Industrial Waste Management
CEE 1513: Environmental Engineering Processes
CEE 1515/2515: Wastewater Collection & Treatment Plant Design

GEOTECHNICAL AND PAVEMENT ENGINEERING:

CEE 1714/2714: Pavement Design and Analysis
CEE 1715/2715: Pavement Rehabilitation
CEE 1821: Foundation Engineering
CEE 2814: Slopes and Earth Retaining Structures

UNDERGRADUATE COURSES AVAILABLE AS ELECTIVES

CEE 1203: Construction Professional Development
CEE 1209: Life Cycle Assessment Methods and Tools
CEE 1210: Engineering and Sustainable Development
CEE 1211: Resource Use and Environmental Quality in Construction
CEE 1212: Environmental Management
CEE 1216: Solar Design & Fabrication
CEE 1217: Green Building Design & Construction
CEE 1218: Design for the Environment

CEE 1331: Matrix Structural Analysis
CEE 1340: Concrete Structures I
CEE 1341: Steel Structures I
CEE 1370: Introduction to Nondestructive Evaluation & Structural Health Monitoring

CEE 1410: Water Resources Engineering
CEE 1412: Hydrology and Water Resources

CEE 1503: Intro to Environmental Engineering
CEE 1505: Water Treatment and Distribution System Design
CEE 1507: Industrial Waste Management
CEE 1513: Environmental Engineering Processes
CEE 1514: Environmental Impact Assessment
CEE 1515: Wastewater Collection and Treatment Plant Design
CEE 1523: Environmental Engineering Lab

CEE 1713: Highway Engineering
CEE 1714: Pavement Design and Analysis
CEE 1715: Pavement Maintenance & Rehabilitation
CEE 1717: Components, Properties and Design of PCC
CEE 1718: Advanced Construction and Bituminous Materials

CEE 1821: Foundation Engineering

ENGR 1630: Underground Coal Mining
ENGR 1634: Mine Environmental Engineering
ENGR 1635: Mine Ventilation Engineering
ENGR 1636: Advanced Mining Systems
ENGR 1637: Strata Control Engineering

GEOL 1445: GIS, GPS and Computer Methods

GRADUATE COURSES AVAILABLE AS ELECTIVES

CEE 2201: Construction Cost Estimating
CEE 2202: Construction Scheduling
CEE 2203: Construction Methods and Equipment
CEE 2204: Construction Law and Risk Management
CEE 2205: Construction Finance & Cost Control
CEE 2206: Construction & Cost of Electrical Supply
CEE 2207: Construction & Cost of Mechanical Systems
CEE 2208: Environmental Management for Construction

CEE 2320: Advanced Mechanics of Materials
CEE 2321: Applied Elasticity
CEE 2322: Fatigue and Fracture of Metal Structures
CEE 2324: Computational Nanomechanics
CEE 2330: Advanced Structural Analysis
CEE 2333: Fundamentals of the Finite Element Method
CEE 2340: Concrete Structures 2
CEE 2341: Steel Structures 2
CEE 2343: Prestressed Concrete
CEE 2344: Design of Masonry Structures
CEE 2346: Repair and Retrofit of Structures
CEE 2360: Dynamics of Structures

CEE 2401: Open Channel Hydraulics
CEE 2405: Groundwater Hydrology
CEE 2414: Advanced Hydrology
CEE 2420: Hydrological Modeling

CEE 2500: Environmental Engineering Microbiology
CEE 2501: Environmental Engineering Chemistry
CEE 2502: Physical-Chemical Principles in Environmental Engineering
CEE 2503: Field Methods in Environmental Engineering
CEE 2508: Atmospheric Pollution Control (Cross-listed with CHE 2510)

CEE 2800: Engineering Geology
CEE 2801: Advanced Soil Mechanics
CEE 2802: Geotechnical Analysis
CEE 2803: Experimental Soil Mechanics
CEE 2814: Slopes and Earth Retaining Structures
CEE 2818: Advanced Foundation Engineering

CIVIL & ENVIRONMENTAL ENGINEERING FACULTY AND THEIR SPECIALTY AREAS

Joseph R. Beck, P.E.	Construction Management (Adjunct)
Melissa Bilec, Ph. D.	Construction Management & Sustainability
George Bonner	Construction Management (Adjunct)
John Brigham, Ph. D.	Structural Engineering
Daniel D. Budny, Ph.D.	Water Resources Engineering
Leonard W. Casson, Ph.D.	Environmental Engineering
Willie F. Harper, Jr., Ph.D.	Environmental Engineering
Kent A. Harries, Ph.D.	Structural Engineering
Anthony Iannacchione, Ph. D.	Mining Engineering
Keith Johnson	Transportation Engineering (Adjunct)

Brian Kozy, Ph.D.	Structural Engineering (Adjunct)
Amir Koubaa, Ph.D.	Geotechnical and Pavement Engineering
Amy Landis, Ph. D.	Sustainability Engineering
Xu Liang, Ph.D.	Water Resources Engineering
Jeen-Shang Lin, Sc.D.	Geotechnical Engineering
Werner C. Loehlein, P.E.	Water Resources Engineering (Adjunct)
Mark Magalotti, PE	Transportation Engineering (Adjunct)
Kenneth Marino, PE	Construction Management
Joseph Marriott, Ph. D.	Sustainability
Patrick Minnaugh	Structural Engineering
Ronald D. Neufeld, Ph.D.	Environmental Engineering
John F. Oyler, Ph.D.	Structural Engineering (Adjunct)
Rafael G. Quimpo, Ph.D.	Water Resources Engineering
Piervincenzo Rizzo, Ph.D.	Structural Engineering
Michael Rollage, BBA	Construction Management (Adjunct)
William Rost	Construction Management (Adjunct)
Daniel Su, Ph.D.	Coal Mining Engineering (Adjunct)
Albert To, Ph. D.	Structural Engineering
Morteza A.M. Torkamani, Ph.D.	Structural Engineering
Luis E. Vallejo, Ph.D.	Geotechnical Engineering
Julie M. Vandenbossche, Ph.D.	Geotechnical and Pavement Engineering
Radisav D. Vidic, Ph.D.	Environmental Engineering
James Vitale, P.E.	Transportation Engineering