

CALIFORNIA STATE UNIVERSITY, FULLERTON

DEPARTMENT OF CIVIL ENGINEERING

Math-Oriented Courses (6 units required)

(all fields except for Construction Engineering and Management and Environmental Engineering)

EGGN 403 Numerical Analysis (3)

AND

EGME 438 Analytical Methods in Engineering (3)

OR

EGME 538 Advanced Engineering Analysis (3)

OR

EGCE 501 Analytical Methods for the Design of Civil Eng. Systems (3)

OR

Equivalent/Graduate Advisor approved 6 units coursework

Structural Engineering (30 units minimum)

Core Courses

(15 units minimum)

EGCE 510	Finite Element Methods (3)
EGCE 517	Theory of Elasticity (3)
EGCE 533	Matrix Methods of Structural Analysis (3)
EGCE 563	Advanced Prestressed and Reinforced Concrete Design (3)
EGCE 566	Design of Tall Buildings (4)

Technical Electives

(9 units minimum)

EGCE 493	Structural Systems for Buildings (3)
EGCE 509	Theory of Plates and Shells (3)
EGCE 532	Earthquake Engineering (3)
EGCE 544 [@]	Advanced Foundation Engineering (3)
EGCE 549	Theory of Elastic Stability (3)
EGCE 562 [@]	Space Structures (3)
EGCE 597	Project (1-6)
EGCE 598	Thesis (6)
EGCE 599	Independent Research (1-3)

@ Approval pending

Environmental Engineering (30 units minimum)

Core Courses (12 units minimum)

EGCE 481	Solid Waste Technology and Management (3)
EGCE 482	Liquid Waste Technology and Management (3)
EGCE 515	Geo-Environmental Engineering (3)
EGCE 537	Groundwater and Seepage (3)
EGCE 546	Coastal Engineering (3)
EGCE 583	Air Pollution Control Engineering (3)

Technical Electives (12 units minimum)*

EGCE 436	Engineering Hydrology (3)
EGCE 463	Precast and Prestressed Concrete Design (3)
EGCE 466	Public Transit System Planning and Operations (3)
EGCE 501	Analytical Methods for the Design of Civil Engineering Systems (3)
EGCE 533	Matrix Methods of Structural Analysis (3)
EGCE 559	Environment and Public Transportation
EGCE 563	Advanced Prestressed and Reinforced Concrete Design (3)
EGCE 597	Project (1-6)
EGCE 598	M.S. Thesis (6)
EGCE 599	Independent Research (1-6)
ES 510*	Environmental Evaluation & Protection (3) – need advance approval from CEE Chair
ES 595*	Selected Topics in Environmental Eng (3-6) – need advance approval from CEE Chair
GEOSC 437*	Water Quality Investigations and Control (3) – need advance approval from CEE Chair

* No more than one course shall be taken from Environmental Science or Geology Department.

Construction Engineering and Management (30 units minimum)

Core Courses (12 units minimum)

EGCE 465	Planning and Control of Const. Projects (3)
EGCE 534	Construction Methods and Equipment for Buildings (3)
EGCE 538	Construction Methods and Equipment for Heavy Construction Engineering (3)
EGCE 557	Total Cost Management of Capital Project (3 units)
EGCE 563	Advanced Prestressed and Reinforced Concrete Design (3)

Technical Electives (12 units minimum)

EGCE 463	Precast and Prestressed Concrete Design (3)
EGCE 466	Public Transit System Planning and Operations (3)
EGCE 501	Analytical Methods for the Design of Civil Engineering Systems (3)
EGCE 517	Theory of Elasticity (3)
EGCE 533	Matrix Methods of Structural Analysis (3)
EGCE 539	Preconstruction Design and Evaluation (3)
EGCE 540	New Technology and Innovation in Construction Engineering (3)
EGCE 550	Major Commercial Project Development Management (3)
EGCE 566	Design of Tall Buildings (4)
EGCE 575	Expert Systems in Construction Engineering (3)
Manag 441*	Labor-Management Relations (3) – need advance approval from CEE Chair
Manag 444*	Project Management (3) – need advance approval from CEE Chair
Manag.516*	Org. Theory and Manag. Operations (3) – need advance approval from CEE Chair
EGCE 597	Project (1-6)
EGCE 598	Thesis (6)
EGCE 599	Independent Research (1-6)

*No more than one course shall be taken from Construction Department.

Geotechnical Engineering* (30 units minimum)

Core Courses (15 units minimum)

EGCE 517	Theory of Elasticity (3)
EGCE 544 [@]	Advanced Foundation Engineering (3)
EGCE 546	Coastal Engineering (3)
EGCE 548 [@]	Soil Dynamics and Foundation Engineering (3)
EGCE 566	Design of Tall Buildings (4)

Technical Electives (9 units minimum)

EGCE 493	Structural Systems for Buildings (3)
EGCE 510	Finite Element Methods (3)
EGCE 532	Earthquake Engineering (3)
EGCE 563	Advanced Prestressed and Reinforced Concrete Design (3)
EGCE 597	Project (1-6)
EGCE 598	Thesis (6)
EGCE 599	Independent Research (1-3)

* Offering depends on enrollment

@ Approval pending

Hydraulics/Hydrology* (30 units minimum)

Core Courses (12 units minimum)

EGCE 435	Design of Hydraulic Structures (3)
EGCE 436	Engineering Hydrology
EGCE 529 [@]	Open Channel Hydraulics
EGCE 537	Groundwater and Seepage
EGCE 546	Coastal Engineering (3)

Technical Electives (9 units minimum)

EGME 508 [@]	Advanced Inviscid Flow (3)
EGCE 517	Theory of Elasticity (3)
EGME 520 [@]	Advanced Viscous Flow (3)
EGCE 532	Earthquake Engineering (3)
EGCE 533	Matrix Methods of Structural Analysis (3)
EGCE 563	Advanced Prestressed and Reinforced Concrete Design (3)
EGCE 566	Design of Tall Buildings (4)
EGCE 597	Project (1-6)
EGCE 598	Thesis (6)
EGCE 599	Independent Grad. Research (1-3)

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Engineering Mechanics* (30 units minimum)

Core Courses

(15 units minimum)

EGCE 509	Theory of Plates and Shells (3)
EGCE 510	Finite Element Methods (3)
EGCE 517	Theory of Elasticity (3)
EGCE 533	Matrix Methods of Structural Analysis (3)
EGCE 549	Theory of Elastic Stability (3)

Technical Electives

(9 units minimum)

EGCE 532	Earthquake Engineering (3)
EGCE 544 [@]	Adv. Foundation Engineering (3)
EGCE 548 [@]	Soil Dynamics and Foundation Engineering (3)
EGCE 563	Advanced Prestressed and Reinforced Concrete Design (3)
EGCE 566	Design of Tall Buildings (4)
EGCE 597	Project (1-6)
EGCE 598	Thesis (6)
EGCE 599	Independent Research (1-3)

* Offering depends on enrollment

@ Approval pending

⁺ Elective courses must be taken from the respective list given above (Chair's approval will be required if students choose to take different elective courses).

Students who received undergraduate credit for any one of the above courses will not get any credit for the same course during their graduate study.

For Courses EGCE 597, 598 and 599, student must submit to the Civil Engineering Department an abstract or objective for his/her thesis/project that is signed by an advisor before starting this coursework.