

RAILWAY ENGINEERING, CERTIFICATE

Certificate Requirements (12 Hours)

The Graduate Certificate in Railway Engineering consists of a minimum of twelve (12) credit hours of core and elective courses. Students shall take three (3) credit hours from a list of core courses, six (6) credit hours from a list of Railway Engineering technical elective courses, and three (3) credit hours from a list of other elective courses. Students can take up to three ECIV 790 courses with a Railway Engineering focus for a maximum of nine (9) credit hours, and up to two ECIV 797 courses with a Railway Engineering focus for a maximum of six (6) credit hours.

Core Course (3 Hours)

Course	Title	Credits
ECIV 580	Railway Engineering I	3
or ECIV 582	Operation and Logistics of Railway Systems	
Total Credit Hours		3

Railway Engineering Technical Elective Courses (6 Hours)

Students shall take six (6) credit hours of Railway Engineering technical elective courses. Elective courses are: (i) any core course not applied as a core course; and (ii) any course from the following list:

Course	Title	Credits
ECIV 588	Design of Railway Bridges and Structures	3
ECIV 784	Dynamic Analysis of Railway Systems	3
ECIV 789	Design Project in Railway Engineering	4
ECIV 790	Selected Topics in Civil Engineering	3
ECIV 797	Research in Civil Engineering	3

Other Elective Courses (3 Hours)

Students shall take three (3) credit hours of other elective courses. Other elective courses are: (i) any Railway Engineering elective course not applied as a Railway Engineering elective course; and (ii) any course from the following list:

Course	Title	Credits
ECIV 705	Deterministic Civil and Environmental Systems Engineering	3
ECIV 707	Management of Engineering Projects	3
ECIV 708	Engineering Risk and Reliability	3
MGMT 718	Management of Human Resources	3