

Building Engineering (BLDG)

Building Engineering (BLDG) Courses

BLDG 5101 [0.5 credit]

Introduction to Building Engineering

Broad introductory and multi-disciplinary coverage of building engineering, with particular emphasis on building performance, heritage conservation, fire safety, and structures. Core competencies including research skills, communication of building engineering topics. Advanced methods for building design and restoration in the architectural, engineering, and construction field.

BLDG 5102 [0.5 credit]

Introduction to Research Methods

Broad introduction to theory and application of research methods in engineering. Key areas include conducting literature reviews; field, laboratory, and computational techniques; and designing, conducting, and presenting research.

Prerequisite(s): Enrolment in M.Eng. Building Engineering.

BLDG 5103 [0.5 credit]

Advanced Research Methods for Building Engineering

Broad set of technical and non-technical research skills to design, conduct, and publish research focused on building engineering. Key areas: defining research problems; literature reviews; methods to conduct research; inferential statistics; measurement and error analysis; design of experiments; presenting and publishing in scientific venues.

Prerequisite(s): enrollment in MASC Building Engineering, PhD Building Engineering, or BLDG 5702.

BLDG 5201 [0.5 credit]

Advanced Building Characterization, Conservation and Rehabilitation Heritage

Supporting concepts and techniques for the identification, documentation, and conservation of heritage and existing buildings; advanced workshops by experts from key disciplines and practice areas in heritage conservation.

Includes: Experiential Learning Activity

Also listed as CIVE 5603.

BLDG 5202 [0.5 credit]

Structural Assessment of Historic Buildings

General concepts related to conservation of heritage structures; materials, construction techniques and structural components; classical structural analysis approaches; seismic behaviour, damage and collapse mechanisms of historic buildings; modern conservation criteria and practical implementation of repair or strengthening strategies.

Also listed as CIVE 5202.

BLDG 5301 [0.5 credit]

Building Energy Management and Optimization

Fault detection and diagnostics; preventive and predictive maintenance; predictive and adaptive control of indoor climate; advanced sensing technologies for the built environment; analysis and modelling using data from buildings; data mining; linear and generalized linear models; optimization methods; model selection and validation; inverse modelling.

BLDG 5302 [0.5 credit]

Building Services Engineering

How buildings are designed and operated. The materials provide foundational knowledge to understand building services: mechanical, electrical, plumbing systems with associated controls.

Also offered at the undergraduate level, with different requirements, as ENVE 4107, for which additional credit is precluded.

BLDG 5900 [1.0 credit]

M.Eng. Project

Includes: Experiential Learning Activity

BLDG 5909 [2.5 credits]

M.A.Sc. Thesis

BLDG 6901 [0.5 credit]

Thesis Proposal

BLDG 6909 [8.0 credits]

Ph.D. Thesis