

COURSE PACKAGE 4: ENTREPRENEURIAL THINKING FOR ENGINEERS

Entrepreneurial Thinking for Engineers

This course is tailored for undergrad engineers exploring entrepreneurship. It offers a team-based, hands-on approach to starting ventures, addressing real-world challenges. Emphasis on tools, concepts, and strategies for success from an engineer's perspective

Leadership and Engineering

This introductory course for undergraduate engineers explores complex decision-making in the real world using the four engineering leadership domains: self, teams, organization, and society. Meta-themes like sustainability, professionalism, and equity are integrated throughout the material, explored via self-reflection, case analysis, class discussions, and other high-impact activities.

WHY CIVIL?

"VSP Civil Engineering has been an unforgettable life-changing experience, getting to know so many people from all around the world and sharing this month in Vancouver's wonderful setting"

"Both program instructors and VSP and faculty assistants were very friendly and fun and truly cared to offer an interesting, diversified experience combining learning about advanced topic in civil engineering and culture and environment discovery."

CONTACT US

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Visit civil.ubc.ca to learn more about our department and programs.

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**BUILDING
TOMORROW,
TODAY**



**UBC CIVIL
VSP COURSE
PACKAGES**

2024



THE UNIVERSITY OF BRITISH COLUMBIA
Civil Engineering

COURSE PACKAGE 1: MODERN COMPUTER SOFTWARE IN CIVIL ENGINEERING APPLICATIONS

Lecture Title: Modern Civil Engineering Software

Lecture Description: Introduction to software and computer-aided graphic design tools for solving civil engineering problems, like basic structural analysis, approximate analysis of structures, and calculation of forces, stresses, and displacements using modern computer software.

Lab Title: Practical Projects using Civil Engineering Software

Lab Description: The course runs in a computer laboratory and includes introductory lessons and tutorial sessions, covering some of the commonly used basic civil engineering computer programs in both industrial projects and academic research. These include software for data acquisition, signal processing, numerical analysis, and analytical studies, such as Excel, Mathcad, MATLAB, RISA 2D, ETABS, SAP2000, and S-FRAME.

COURSE PACKAGE 2: CARBON-NEUTRALITY IN SMART AND SUSTAINABLE INFRASTRUCTURE

Lecture Title: Structural Materials and Concrete Technology

Lecture Description: This course explores advanced structural materials and concrete technology, covering smart materials for new constructions and infrastructure repair.

Lab Title: Laboratory Testing of Structural Materials

Lab Description: Within this laboratory setting, students collaborate in groups, tackling real-world issues pertaining to Portland cement concrete, asphalt concrete, geopolymer, timber, and steel. Identifying key challenges in these materials' performance, students conduct both laboratory and field experiments.

COURSE PACKAGE 3: URBAN RESILIENCE THROUGH INTELLIGENT STRUCTURES

Lecture Title: Structural Challenges and Solutions

Lecture Description: In this compact course, you'll navigate the fundamental principles of structural analysis, mechanics of materials, seismic design essentials, innovative vibration control methods, and diverse structural systems.

Lab Title: Seismic Design and Competition

Lab Description: Students work collaboratively in teams to design and construct bridge structures and tall building models using balsa wood. The highlight of the course involves the setup of UBC's shake table, simulating a cityscape, where student teams mount their structures for a simulated earthquake experience. Using recorded historical ground motions, the shake table replicates the effects of a natural earthquake, causing damage to the model city.