Course Description
Skyscrapers and large bridge complexes have always fascinated the general public and always challenged the imagination of engineers. This course will provide students with the development of tall buildings and long-span bridges and the basic knowledge of structural design and behaviour of structures considered. Areas covered include an overview of the tallest buildings and longest bridges in the world and the concepts of structural design and aesthetic challenges. An introduction to scientific knowledge of earthquakes and earthquake-resistant structures is also included.

Topics
1. Development of tall buildings
2. Structural analysis
3. Aesthetic challenges
4. Architects vs structural engineers
5. Earthquakes and structural damage
6. Smart earthquake-resistant buildings
7. Long-span bridges: structural design and aesthetics

Grading Scheme
- Class attendance and participation (40%)
- Two marked assignments (30%)
- One group project, with oral presentations (30%)

[Topics and grading schemes are subject to change as deemed appropriate. Students will receive information and guidelines in class on how they will be assessed for the course.]

Attendance Requirement
Class attendance is expected and required. The minimum attendance required is 70%.

Teaching mode
The course will be conducted via Zoom. We may change to face-to-face session if situation allows.

Instructors
Prof J S KUANG
Prof Kuang is a Professor of Civil Engineering at HKUST. He received his doctorates from the University of Cambridge in engineering science and the University of Hong Kong in civil engineering, respectively. His expertise lies primarily in structural engineering and his research interests include seismic engineering, seismic design and analysis of structures, in particular tall buildings. Prof Kuang has an extensive knowledge and teaching experience in the areas. His outstanding research achievements have been recognised by numerous prestigious awards, including the Telford Premium, the TK Hsieh Award, and the Magazine of Concrete Research Prize from the Institution of Civil Engineers, UK, and the Best Transactions Paper Awards from the Hong Kong Institution of Engineers. He also received the MSc Program Teaching Excellence Appreciation Award from the School of Engineering, HKUST.