Course Code:	CIVL 4100P (offer in Spring 22-23)
Course Title:	Wave Loads on Structures
Course Credits:	3
Class Quota:	30
Lecture/tutorial/lab hour per week	Lecture, Tutorial
Targeted Student Group:	senior UG students and PG students
Prerequisite (if any):	CIVL2510 Fluid Mechanics
Exclusion (if any):	Nil
Corequisite (if any)	Nil
Instructor:	Prof. Mohamed GHIDAOUI
Enrollment requirement (e.g., Instructor's approval is required):	Instructor's approval is required
Course Description: (within 150 words)	Wave loads are critical to the design, analysis and management of civil engineering infrastructure. These critical wave loads range from gravitational waves to compressibility waves. This course will focus on wave loads on coastal structure and wave loads on conduits. This course is suitable for senior UG students and PG students.
Textbook / Reference books:	Basic Coastal Engineering by R.M. Sorensen; Fluid Transients by B.Wylie
Topics:	1. Introduction 2. Basics of small amplitude ocean wave theory 3. Wave Load on Slender Structures 4. Wave Refraction, Diffraction, and Reflection 5. Making sense out wave data: Statistical analysis 6. Design of Costal Structures 1 – piles, pipelines and cables 7. Design of Costal Structures 2 – vertical breakwater 8. Design of Costal Structures 3 – rubble mound structures 9. Basics of compressibility waves in tubular strctures such as pipes 10. Design loads induced by compressibility waves
Computer usage:	To be advised
Class/lab schedule:	2 hours lecture with an additional hour lecture/ tutorial per week
Intended learning outcomes (ILOs) of the course:	Gain in-depth understanding of compressibility and gravity waves; ability to design coastal structure and pipes
Rationale for introducing the course:	There is no such a course in HK; yet coastal waves are important.
Grading Scheme	Assignments (20%), midterm (30%), project (50%)