

## View Syllabus Information

Even after classes have commenced, course descriptions and online syllabus information may be subject to change according to the size of each class and the students' comprehension level.

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| Course Information          |  |                   |  |
|-----------------------------|--|-------------------|--|
| Year                        | 2021   | School            | School of Creative Science and Engineering |
| Course Title                | Bridge Engineering<br>IPSE Course  |                   |  |
| Instructor                  | YANG, Yizhou   |                   |  |
| Term/Day/Period             | spring semester Thur.3   |                   |  |
| Category                    | Elective Compulsory Subjects   | Eligible Year     | 3rd year and above Credits 2               |
| Classroom                   |  | Campus            | Nishi-Waseda(Former: Okubo)                |
| Course Key                  | 27GD033008   | Course Class Code | 01   |
| Main Language               | English  |                   |  |
| Class Modality Categories   | Realtime Streaming   |                   |  |
| Course Code                 | CSTX36ZL   |                   |  |
| First Academic disciplines  | Civil Engineering  |                   |  |
| Second Academic disciplines | Civil Engineering  |                   |  |
| Third Academic disciplines  | Structural Engineering/Earthquake Engineering/Maintenance Management Engineering |                   |  |
| Level                       | Advanced, practical and specialized  | Types of lesson   | Lecture                                    |

| Syllabus Information |  | Latest Update: 2021/01/25 13:59:11 |
|----------------------|--|------------------------------------|
| Course Outline       | This course covers various aspects of bridge engineering, including classifications, design loading, analysis methods, and constructions. Structural features of different types of bridges, including beam bridges, arch bridges, truss bridges, suspension bridges, and cable-stayed bridges will be discussed. In addition, this course also provides students with fundamental knowledge in inspection, monitoring, repair, strengthening, and replacement of bridge structures.   |                                    |
| Objectives           | This course aims to help the student develop an intuitive feeling about the structural features of different types of bridges, and enable students to have the basic concepts in proportioning and design of bridges in terms of aesthetics, geographical location and functionality. In addition, this course also aims to describe the research focuses in current engineering practice, such as bridge inspection, monitoring systems as well as the repair, strengthening, and replacement methods for existing bridges.   |                                    |
| Course Schedule      | <ol style="list-style-type: none"> <li>1. Types of Bridge</li> <li>2. Bridge Design and Planning</li> <li>3. Loads and Load Distribution</li> <li>4. Bridge Deck Systems</li> <li>5. Girder Concrete Bridges (1)</li> <li>6. Girder Concrete Bridges (2)</li> <li>7. Midterm presentation of case study (1)</li> <li>8. Truss Bridges</li> <li>9. Arch Bridges</li> <li>10. Cable-stayed Bridges</li> <li>11. Suspension Bridges</li> <li>12. Bridge Bearings</li> <li>13. Bridge foundation</li> <li>14. Inspection and maintenance on aged bridges</li> <li>15. Final presentation of case study (2)</li> </ol> <p>Method: live-streaming by Zoom and handouts</p> |                                    |
| Textbooks            | Bridge Engineering (1st Edition) / W. LIN, and T. YODA / Butterworth-Heinemann, 2017<br><a href="https://www.elsevier.com/books/bridge-engineering/weimei/978-0-12-804432-2">https://www.elsevier.com/books/bridge-engineering/weimei/978-0-12-804432-2</a>  |                                    |
| Reference            | <ol style="list-style-type: none"> <li>1.The Manual of Bridge Engineering / M. J. Ryall, G. A. R. Parke, J. E. Harding / Thomas Telford, 2000</li> <li>2.Design of Modern Highway Bridges / Narendra Taly/ McGraw-Hill Companies, 1997</li> <li>3.Specifications for Highway Bridges / Japan Road Association, 2002</li> </ol>   |                                    |
| Evaluation           | <p>Assessment: presentations, homework and attendance.</p> <p>Attendance: 5%</p> <p>Homework and final report: 75%</p> <p>Presentation: 20%</p>  |                                    |

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