

## 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                | Materials and Structures B<br>IPSE Course                                        |                   |                                            |
| Instructor                  | YANG, Yizhou                                                                     |                   |                                            |
| Term/Day/Period             | spring semester Tues.5                                                           |                   |                                            |
| Category                    | Elective Compulsory Subjects                                                     | Eligible Year     | 2nd year and above Credits 2               |
| Classroom                   | 53-301                                                                           | Campus            | Nishi-Waseda (Former: Okubo)               |
| Course Key                  | 27GD032010                                                                       | Course Class Code | 01                                         |
| Main Language               | English                                                                          |                   |                                            |
| Class Modality Categories   | Hybrid (In-person/Online)                                                        |                   |                                            |
| Course Code                 | CSTX26ZL                                                                         |                   |                                            |
| First Academic disciplines  | Civil Engineering                                                                |                   |                                            |
| Second Academic disciplines | Civil Engineering                                                                |                   |                                            |
| Third Academic disciplines  | Structural Engineering/Earthquake Engineering/Maintenance Management Engineering |                   |                                            |
| Level                       | Intermediate, developmental and applicative                                      | Types of lesson   | Lecture                                    |

| Syllabus Information         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Latest Update : 2021/01/25 14:58:41 |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Subtitle                     | Mechanics of Materials B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |
| Course Outline               | Engineering mechanics is one of the primary subjects for structural engineering. As a branch of engineering mechanics, mechanics of materials that is a basic subject for structural analysis and design deals with loads, deformations and the forces acting on the members. This course provides a fundamental knowledge of structural deformation, statically indeterminate problems, strain energy, buckling and vibrations.                                                                                                                                                                                                                                                                                                                                                               |                                     |
| Objectives                   | To make the students master the fundamental knowledge of structural deformation, indeterminate problem and vibrations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
| before/after course of study | The basic grasp on 'materials and structures A' is needed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |
| Course Schedule              | <ol style="list-style-type: none"> <li>1. Deformation of Beams - (1)</li> <li>2. Deformation of Beams - (2)</li> <li>3. Basic Statically Indeterminate Problems (1)</li> <li>4. Basic Statically Indeterminate Problems (2)</li> <li>5. Energy Method (1)</li> <li>6. Energy Method (2)</li> <li>7. Midterm exam</li> <li>8. Method of Least Work (1)</li> <li>9. Method of Least Work (2)</li> <li>10. Buckling of Columns - (1)</li> <li>11. Buckling of Columns - (2)</li> <li>12. Fundamental of Structural Vibrations (1)</li> <li>13. Fundamental of Structural Vibrations (2)</li> <li>14. Reviews and Summary, Q &amp; A</li> <li>15. Final exam</li> </ol> <p>Method: hybrid of face-to-face class (for students in Japan) and live-streaming by Zoom (for students out of Japan)</p> |                                     |
| Textbooks                    | None. Handout is distributed in class.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
| Reference                    | <ol style="list-style-type: none"> <li>1. R.C.Hibbeler: Mechanics of Materials 8th Edition</li> <li>2. Rerdinand P. Beer, E. Russell Johnston, JR., John T. Dewolf, David F. Mazurek: Mechanics of Materials 6th Edition</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                     |
| Evaluation                   | <ul style="list-style-type: none"> <li>•In-class quiz/exam: 35%</li> <li>•Attendance: 5%</li> <li>•Reports of Homework :60%</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
| Note / URL                   | More than 2/3 of attendance is required to evaluate your achievement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |

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