

## Accreditation by Japan Accreditation Board for Engineering Education and experiences of Saitama University

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### Abstract

Japan Accreditation Board for Engineering Education (JABEE) is a nongovernmental organization established in 1999 and started accreditations of education provided by a department or a course within the faculty of engineering, agriculture or science at universities or institutes of technology in 2001. JABEE was admitted as a provisional signatory of the Washington Accord in 2001 and has held full-signatory status since 2005. Since its start of accreditation, JABEE has applied outcome-based assessment. Instead of structural assessment, the contents of education are assessed as outcomes. JABEE does not question the approach of the program as long as the outcomes are assured. The program shall set up and demonstrate with benchmarks of the outcomes, which the program expects. The outcomes of the program are evaluated based on the expectations of society. There are four assessment criteria: (1) learning outcomes, (2) educational methods, (3) achievement of learning outcomes, and (4) educational improvement. These four criteria are streamlined with a Plan-Do-Check-Act (PDCA) loop. The accumulative number of accredited engineering programs at the bachelor and master levels was 506 as of 2017. The undergraduate education program offered by the Department of Civil and Environmental Engineering at Saitama University has been accredited by JABEE since 2003. The original motivation of the department to be accredited was to take advantage of the fact that graduates of the accredited program could be exempted from the first of the two-step examinations for professional engineers in Japan. The maintenance of accreditation turned out to work well to maintain and improve the quality of education.



Yasunao Matsumoto is professor of Structural Dynamics and, currently, the head of the Department of Civil and Environmental Engineering at Saitama University, Japan. He is also the head of the International Graduate Program on Civil and Environmental Engineering. He obtained his first and master's degrees in civil engineering from the University of Tokyo, Japan, in 1993 and 1995, respectively. He then worked on human responses to vibration at the Institute of Sound and Vibration Research, the University of Southampton, England, where he obtained a PhD in 1999. He has been working as an academic staff member at the Department of Civil and Environmental Engineering at Saitama University for over 20 years. He has had abundant experience in teaching various courses, including main specialized subjects such as structural mechanics and fundamental engineering subjects such as differential equations. Also, he has guided research projects for more than 80 students, including more than 30 international students. His research interests

include evaluation and mitigation of vibration problems in civil engineering structures, vibration-based structural health monitoring, environmental vibration, and noise problems caused by civil infrastructures and human responses to vibration and noise. He has been involved in various expert committees organized by academic societies, public agencies, and road administrators.