

# Complex engineering problem and outcome-based engineering education: A case study

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**ABSTRACT:** An ability to solve complex engineering problems have recently emerged as key indicator of engineering graduates' readiness to embark on professional career. At its core, the ability compasses skills and attributes needed to contextualize and apply the requisite knowledge to bear upon the problem at hand. Korean Engineering Accreditation Criteria (KEC2015) stipulates engineering graduates to attain this ability by engaging in a sequence of engineering design activities that culminates in a team capstone design project.

This presentation describes an ongoing process of designing and implementing a senior year capstone design project course in mechanical engineering. The key factors and constraints that impinge on the course design is explained. The initial set up and the subsequent development of the course is presented within the framework of the continuous quality improvement (CQI).

## **ABOUT THE SPEAKER:**

Dr. Jung Soo Kim is professor at the Department of Mechanical and System Design Engineering, Hongik University in Seoul, Korea. He is president of education division at Korean Society of Mechanical Engineers, and former vice-president of Accreditation Board for Engineering Education of Korea (ABEEK). He has been actively involved in international engineering accreditation, serving as Washington Accord reviewer to several jurisdictions including India and Pakistan, as well as advising several institutions to develop accreditation policies and processes.

Jung Soo Kim received B.S. degree in mechanical engineering from M.I.T. and M.S. and Ph. D. degrees in mechanical engineering from U.C. Berkeley. Prior to joining academia, he worked at Xerox Corporation, Hughes Aircraft Company, and LG Industrial Systems as engineer and researcher in the area of dynamics and vibration. His research interests are dynamical systems, vibration and acoustics, high-speed trains and biomimetics. He has published numerous papers in these areas.