

President's Lecture: Reliability in the 21st Century

Speaker: Professor Way Kuo

President and University Distinguished Professor, City University of Hong Kong
Foreign Member, Chinese Academy of Engineering
Member, Academia Sinica, Taiwan
Member, US National Academy of Engineering



Date: 6 October 2009, 4:30pm

Venue: Wei Hing Theatre, City University of Hong Kong

Reliability in the 21st Century

With times changing, mankind is increasingly affected by issues relating to reliability or maintainability. Given the importance of high reliability in military matters, the United States began to emphasise studies on reliability even before the outbreak of World War II. In addition, reliability has since made a crucial impact on advances in such fields as space science and technology, nuclear energy and biotechnology.

Reliability is an approach to assessment. In terms of reliability, there is no such thing as a system that lasts forever. The lecture will examine, from the perspectives of engineering history and social change, how reliability relates to human endeavour in such areas as urban construction, aviation, auto manufacturing and insurance. It will explore variant forms of reliability, including cure rates of medical treatment, survival rates after surgical procedures, guarantee periods for new cars, the maintainability of spacecraft and the value-preservation rate in a financial transaction.

Within all such systems, mankind is the least reliable element, with human error presenting the highest probability of failure. Less probable are traffic accidents from non-human causes, and even less again are casualties of war, followed by failures in the working of micro-electronic systems. Compared with these, the rate of accidents involving aeroplanes or nuclear power plants are by far the lowest.

The lecture will also discuss various topics about reliability so as to gain a better understanding of certain problems and to propose some solutions, in the hope that humans in the 21st century will finally become a "master of the material world, not a slave to it", as advised by China's sages in ancient times.

Please visit www.cityu.edu.hk/cityu25/ for details.

For enquiries, please call 3442 6710. Seats are available on a first-come-first-served basis.