



香港城市大學
City University of Hong Kong

Development of a learning resources repository for helping students understand professional and ethical responsibility for risk assessment

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Principal Investigator: Dr. Wei WANG

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Abstract:

Risk assessment has been the dominant paradigm for ensuring the reliable design and operation of industrial systems. Examples of areas of applications include the mechanical engineering industry, the nuclear industry, the aerospace industry, the chemical process industry, the transportation sectors, etc. The Department of Mechanical Engineering (MNE) offers related courses, such as MNE4109 Reliability Engineering and Risk Analysis, helping students develop ability to identify, formulate and solve engineering problems, which fulfill the Hong Kong Institution of Engineers (HKIE) Graduate Attribute (GA) (e). Motivated by the value of nurturing students create a positive contribution to society, the course must also draw attention to their understanding of professionally and ethically responsibility for handling the industrial and societal problems, fulfilling the HKIEGA (f). MNE4109 has been looking after this learning outcome since last academic year, however, still suffers from a lack of normative paradigm. This teaching development project is to reinforce the students' use of professional knowledge learned in lectures and promote their understanding of ethical responsibility for risk assessment and management, and hereby aims to develop a dedicated learning resources repository. This project will involve students registered MNE4109 and FYPs in risk engineering. Students by groups are encouraged to effectively communicate and learn lessons from past major industrial/societal accidental events, represent the accidental scenarios by risk modeling, and ethically engage in suggestions on risk management decisions. The deliverables of the groups will be collected in an online repository, being learning resources reserved for the future class and open accessed to similar courses.