



香港城市大學
City University of Hong Kong

Automation in Operation of Construction Heavy Plants and Machinery: WebCyclone Application in site Management

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Abstract:

All civil, building and construction engineering students pursuing a Bachelor's degree in the Building and Construction (BC) Department are required to take engineering courses related to the Construction Technology and Temporary Works Design. In these courses, the knowledge about the applications of construction heavy plants and machinery are the essential and vital subject matters for our students to learn.

However, the existing teaching and learning materials in this regard rest on the schematic drawings or documented procedures which may not effectively help our students to learn and experience the operations of them in-depth. Utilizing digital imaging technologies and multimedia software, the PI will develop a web-based instructional center designed to allow students in several different disciplines from ACE Department to experience and actively gain knowledge about the most concerned planning and operations of plants and machinery (e.g. tower crane for tall building construction) in their workplace. Constructionist theories propose that learning is a process wherein learners are actively engaged in constructing mental models and theories of real world activities and acquire knowledge through the testing of hypotheses. By providing for individual learning needs and opportunities to applying Discovery-Enriched Curriculum (DEC) approach, this proposal will help in improving both the effectiveness and the quality of teaching and learning through the development of WebCyclone simulation. And hopefully in support of CityU's overall goal to add value to our students in our plan to moving from a 3-year to a 4-year curriculum.