

Geodudes Geotechnical Engineers Report

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Rocscience has, over the years, evolved from a university research group into an independent company, and we continue to support the educational community in recognition of our academic roots. Keeping in close connection with universities around the world, Rocscience has readily offered its Academic Bundle, through the Rocscience Education Program, the complete package of Rocscience software that provide students with easy-to-use tools to assess the design of geotechnical structures. Offered at a subsidized rate, the Academic Bundle is meant to provide practical tools to help students engage in research and meaningful projects.



Featured in this edition of Education Connection is a recent student group design project directed by Professor Pradel at the University of California, Los Angeles (UCLA). A veteran user of the Academic Bundle, Professor Pradel has for the last five years integrated software modelling using *Slide* and *Phase²* into his Advanced Geotechnical Design course. Design projects have included software analysis of the 17th Street and London levee failure in New Orleans during Hurricane Katrina, and the dewatering schemes during dam construction. Most recently, students in the course worked in groups as independent companies to perform a feasibility study for a water storage earth dam. The students were tasked with compiling a professional report, recommending the dam location and design.

The Geodudes Geotechnical Engineers of Professor Pradel's class emerged as one of the top consultants for the project proposal. Set up as a project commissioned by the U.S. Army Corps of Engineers, the team first chose a location and an existing design suitable for the dam. They then modelled the temporary cofferdams and proposed dam for multiple stages of

construction using *Slide's* seepage and slope stability analyses. In addition, the team performed strength reduction and soil deformation analysis for all construction stages in *Phase²*. Although the chosen design could not fulfill safety requirements, the Geodudes provided logical recommendations based on the *Slide* and *Phase²* analyses. Considering that consulting is a possible career path for engineers, the project has exposed students to conventional practice, comprehensive analysis and professional communication.

In Professor Pradel's opinion, integrating software modelling into the course has allowed his students to

participate in practical and meaningful projects. From a technical perspective, students receive exposure to the Strength Reduction Method available in *Phase²* as well as the conventional limit equilibrium slope stability analysis available in *Slide*. The software modelling has also provided the much needed visualization that students find helpful in applying concepts. Most importantly, students are more motivated in their tasks because *Slide* and *Phase²* are well integrated and easy to use. When they spend less time learning the software, students get the opportunity to analyze more design alternatives and learn impacts of the different design considerations.

For the full version of Geodudes Geotechnical Engineers' report, [click here](#). To find out more about Professor Pradel's course, [click here](#). If you have a student project that you would like to showcase, please contact rocnews@rocscience.com

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