Fellows 2003-2004 - Integrating MATLAB Into Courses - Pratt School of Engineering

Overview

Faculty in the program worked as a group to integrate MATLAB programming into sophomore level courses. First-year students in the Pratt School of Engineering learned to write MATLAB programs to solve problems relevant to engineering. This project was designed to ensure that students use their new skills in MATLAB programming during their second year and will reinforce the use of programming throughout the curriculum.

Fellowship Activities

This Fellows program ran from May 2003 to April 2004. Fellows attended three full day orientation sessions for to do independent project work and consultation with CIT staff on the remaining two orientation days. Orientation meetings were to go over some of the basics of Matlab, to demonstrate what the students were learning in the EGR 53 class that might be relevant to other courses, and to watch faculty give demonstrations of several of the assignments created for the class. Followup meetings were held approximately once each month during the academic year to get updates on assignments being created and to investigate ways to assess the projects.

Participants in the program received a $1,250 stipend at the completion of activities introduced at the orientation week program and a second $1,250 stipend in May 2004 contingent on completion of the remaining activities.

Outcomes

Matlab is used by all engineering students in 2007. Use of the software is taught in the required course ENG 253; since the conclusion of the Fellowship, many students have gone through their entire education at Duke using Matlab.

Thanks to this CIT–funded project, in the last few years, students being graduated from the Pratt School of Engineering have gone through their entire curriculum with continuous Matlab instruction. The students have a powerful tool for solving engineering problems and have written Matlab code which is elegant and compact and have used it to help solve engineering problems even when it isn't required. We have learned over time that it doesn't take a lot of complicated programming assignments to get students to continue to improve their skills. They can continue to improve with small, simple things as long as they maintain a connection with the software. These students are generally very creative so once they see what the basic tools can do, their imagination lets them run with it. – Henri Gavin

Final report

Participants

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