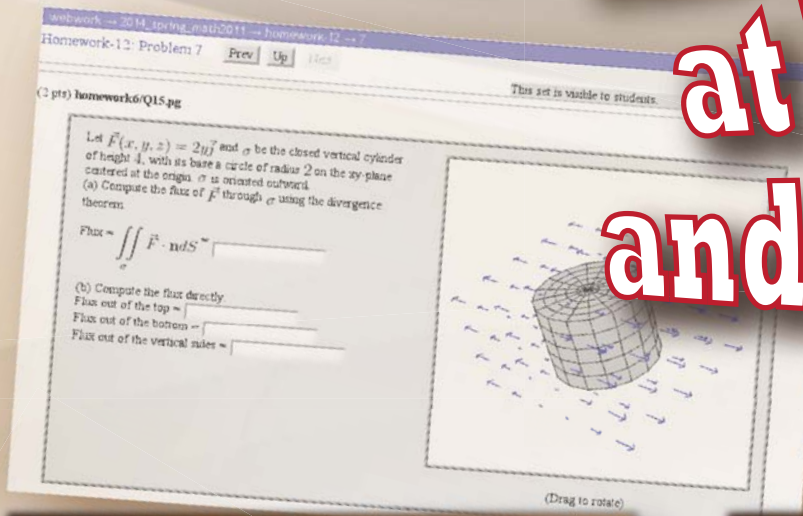


An Education Workshop at HKUST on WeBWork and a walk-in help center

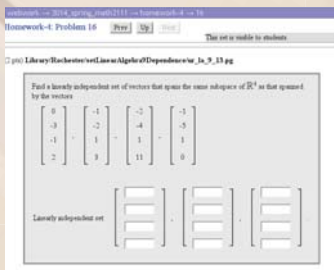


HKUST Workshop June 10-11, 2014

On June 10-11, 2014, the HKUST Mathematics Department and Center for Enhanced Learning and Teaching (CELT) will hold a workshop on the HKUST campus to share their experiences implementing WeBWork@HKUST, and the Mathematics Support Center (MSC). Besides talks by Mathematics Department personnel on their experiences, the workshop will additionally have keynote addresses by WeBWork co-originator Professor Michael Gage of the University of Rochester and Professor Robert Megginson, former Associate Dean of Undergraduate Education at the University of Michigan and an expert on mathematics help centers. The theme for the first day (Tuesday) is WeBWork, with hands on use. Walk-in help centers and other impactful technology will be the focus of the second day (Wednesday).

What is WeBWork ?

WeBWork is a freely available open-source online homework system for mathematics and science courses. Using a web browser, a teacher can select problems from a large problem library in the WeBWork system and arrange them into individualized online problem sets. The problem library -- which is constantly being updated by many contributors -- has over 25,000 mathematical problems. They are organized and arranged in categories, such as secondary algebra, precalculus, single and multivariable calculus, statistics, and other topics. More information about WeBWork can be found at <http://webwork.maa.org>



What is the Mathematics Support Center?

As a synergistic complement to WeBWork, the HKUST Mathematics Department, has also established a best practice infrastructure of a mathematics support center. The purpose of such a center is to offer a walk-in tutoring service for students taking mathematics service courses. The support center is typically open 25-40 hours per week and the center is used by a student as a replacement of an office hour visit to their course instructor or teaching assistant. The ability that a student can obtain help from the center during hours when their instructor is not holding office hours is a distinct positive feature of the center.



Since Spring 2012, the Department has operated the Mathematics Support Center (MSC) to provide walk-in help to students taking numerous basic mathematics courses. The combination of WeBWork and the MSC is particularly synergetic: the WeBWork homework is the instrument through which students acquire certain fundamental mathematical skills, and thereby its completion drives some students to the MSC for help. In Fall 2013, the MSC operated 22 hours per week in a computer equipped classroom of the Library's Learning Commons. For the 12 weeks of its operations, more than 900 distinct students visited the MSC over 3,000 times. Usage was particularly heavy when WeBWork homework was due, and during the midterm and final exam periods.



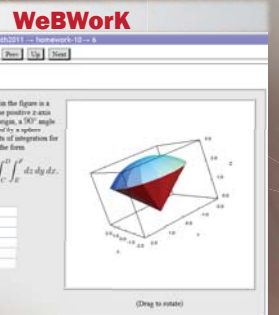
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James Glimm, Past President of the American Mathematical Society (AMS) *"In my role as President of the AMS, I decided to initiate some action regarding collegiate level teaching, reflecting my long held views that this is of great importance to the mathematics community, not to mention to our students and to the country. In the process, I have acquired some anecdotal evidence which is very strongly supportive for WeBWork... The key mechanism for this improvement seems to be that the students find their homework to be far more rewarding and do more of it, and, not surprisingly do learn more."*

Blended learning

The combination of WeBWork and the MSC as a complement to traditional lectures and tutorials is particularly synergetic: students learn through a blend of traditional lectures and tutorials, online WeBWork homework, and one-to-one and group help in the MSC.

Traditional Lecture/Tutorial



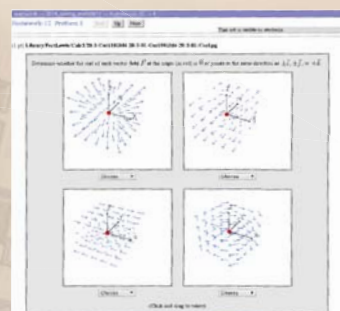
One-to-one help in the MSC



Registration

The workshop is funded through the University Grants Council. No registration fee is required. To register and be placed on a mailing list for the workshop, please do so at the URL.

<http://www.math.ust.hk/~support/workshop.html>



More than 500 institutions worldwide have successively used WeBWork, with the vast majority located in the USA and Canada. Examples include: University of Michigan, Columbia University, University of California at Santa Barbara, and University of British Columbia. The fact that WeBWork automatically grades the homework it generates is a key benefit in its use, as it frees instructors of a huge grading responsibility, thereby conserving limited resources for other educational goals.

The HKUST Mathematics Department began using WeBWork in 2011 to facilitate the delivery and grading of homework for the substantial additional teaching it does due to the recent changes in the Hong Kong higher education system. WeBWork@HKUST currently administers approximately 700,00 problems annually to thousands of students.

HKUST is currently the only institution in east Asia that operates its own WeBWork server. Notable secondary schools in China with courses hosted on MAA WeBWork servers are:

- Hills Road Sixth Form College in Cambridge United Kingdom,
- Shanghai Community International School- Pudong China,
- The High School Affiliated to Renmin University Of China in Beijing, China.

A demonstration of WeBWork@HKUST can be accessed using the username/password combination demouser/10june2014 at the URL <http://demo.webwork.math.ust.hk>