

## nool.ca – Providing support via the web for math and writing skills for first-year students at the University of Ontario Institute of Technology

### Opportunity

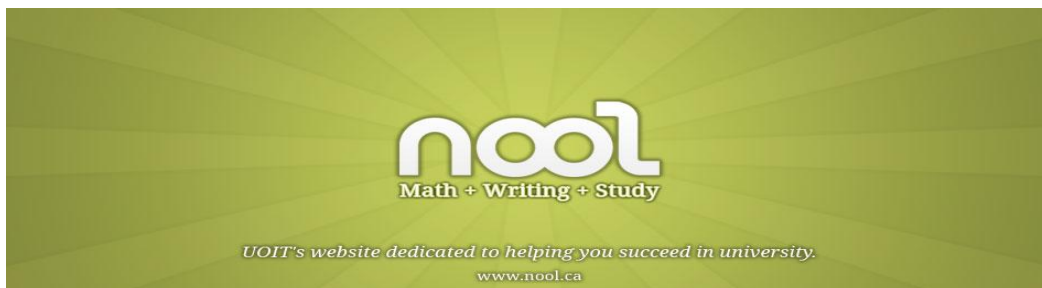
The University of Ontario Institute of Technology (UOIT) in Oshawa is a laptop-based university at which every student uses a current model laptop to access course materials, conduct research, make presentations, and communicate with faculty. As online student support is an essential component of a laptop university, the nool.ca site was constructed to provide students with online interactive learning materials they can use to improve their math and writing skills.

With funding from the Ministry of Training, Colleges and Universities for projects serving students who are the first in their families to pursue postsecondary education, UOIT developed nool.ca as a database of information and resources directly addressing the specific math and writing skill needs of first-year students. The name “nool” expresses the focus of the solution – with the “n” for numeracy, the “l” for literacy, and the two “o”s indicating infinity.

Faculty with experience at UOIT were contracted and worked with students to develop the initial content. The developers asked professors across the university about their expectations of first-year students and where the students encountered the greatest challenges in comprehension and in moving from high school to university. This research guided the production of the learning support materials.

### Innovation

Interactive learning materials to help improve math and writing skills are the core of nool.ca, but additional materials also support study skills, chemistry, and physics. In developing this web site, UOIT produced resources to help students with such specific concerns as ‘adding fractions’, ‘higher derivatives’, ‘how to use an apostrophe’ and a myriad of other skills.



Podcasts, video, learning objects, text, tutorials, and other tools are accessed online through extensive lists of specific math and writing topics and challenges. Students can also search by program and course to get access to the materials most closely related to their curricular needs. nool.ca focuses on the foundation material for math courses and writing skills and, in some cases, reviews the pre-requisite information from high school.

The site can be accessed through YouTube, Twitter, and Facebook, and via smart phones.

The responsibility for nool.ca is with Teaching and Learning, with the Academic Success Centre responsible for the updating and maintenance of the database.

## **Outcomes and Benefits**

nool.ca was launched in August 2009 and the site has since had many thousands of visits. Although designed specifically to help first-generation students, it has proven to be useful to any student struggling with aspects of math, writing, and study skills. The Academic Success Centre has successfully used the site during its one-on-one meetings with students, who then continue to access the site to help them grasp fundamental concepts in math, writing, and study skills. Professors across the university have found it to be an important resource for struggling students and often have created links from their class WebCT pages to the site.

One of the key benefits of nool.ca is its thorough coverage of the skills required for post-secondary success. The math resources address each of the challenges that a first-year student might encounter in understanding the basics in a course. The writing materials cover the whole process of writing from organizing to editing and creating references.

## **Challenges and Enhancements**

In November 2011, a second version of nool.ca is to be launched to address some of the issues in the first version and to make the site simpler and more effective for students. The site will be enhanced by:

- **Easier Navigation:** Access to the interactive learning materials in the first version is through lists of topics and, as the number of resources grew, the lists became overly long and, in some cases, repetitive. The new version will be re-designed so students can more clearly follow a path through the resources – with fewer clicks and windows so students can trace their progress. For example, the writing materials will be organized under a chart that links all the components of good writing to guide students through the logical stages of skill development.

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- **Duplication:** The duplication and overlap on the current site - where multiple resources address the same topic - will be eliminated.
- **Quality:** Newly developed resources will have enhanced production and educational values.
- **Resource Expansion:** Students will be able to link to other innovative and credible web sites for further information and support. The links are all being assessed to ensure quality and appropriateness.
- **Visual enhancements:** Some of the more difficult aspects of the current design will be replaced so that the site is more visually appealing and accessible. One of the goals is to make nool.ca more smart phone friendly.
- **Podcasts:** Podcasts will be improved by such modifications as using font instead of script. This involves additional training for the faculty who prepare the podcasts as the software for production takes considerable time to learn.
- **Accessibility:** The second version will have everything linked to YouTube.

A recommendation from Krista Elliot, Manager of the Academic Services Centre, for any institution considering a web site dedicated to interactive learning materials is to have the development team come up with a shared theme and format for the appearance of site and the way material is presented on screen before development starts. Having people work separately had many advantages for quick development, but an agreed presentation model would have been a considerable asset.

Improvements being considered for subsequent versions include developing an app for nool.ca and increasing the materials available under the other topics such as chemistry and physics.

## Potential

The potential for nool.ca was recognized immediately. The usefulness and applicability of the site goes far beyond the first-generation students for whom it initially was designed. The interactive learning materials and support on nool.ca address the numerous math and writing skills information needs of all postsecondary students, arranged by topics that are shared across the courses at all Ontario universities and colleges, not only at UOIT.

The site is readily accessible and easily searched, with the upcoming version making it even more navigable and student-friendly. It will incorporate links to the best, freely-available resources across the web. The interactive learning materials are produced specifically for this student support solution and so are focused, effective, and concise.

As described by Bill Muirhead, Associate Provost, Academic at UOIT, in a press release:

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“It [nool.ca] is the way that student support should be offered and that is why the students have embraced it. What makes it particularly unique is that while it was designed with first-generation students in mind, it’s a terrific tool for all post-secondary students at UOIT and even right across Ontario.”

## Further Information

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