Life Beyond Calculus
Au-delà du calcul infinitésimal

(Org: **Malgorzata Dubiel** and/et **Veselin Jungic** (SFU))

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Hitchhiker's Guide to Mathematics

The new SFU undergraduate curriculum, which will be implemented September 1st, 2006, will require all students to take at least two "Quantitative" and "Writing Intensive" courses. This requirement provides opportunity for us to introduce new, "non-traditional" mathematics courses. This talk will review courses currently under development, and show how we are hoping to make use of this opportunity.

DAVE LIDSTONE, Langara College, 100 West 49th Avenue, Vancouver, BC V5Y 2Z6

Discrete Mathematics in school curricula across Canada

This year's meeting of the Canadian Mathematics Education Study Group included a working group on discrete mathematics in school curricula co-chaired by Leo Jonker and myself. This presentation will report on the deliberations of that working group. In particular, we will address what is currently happening across the country, and how and why the current situation might be changed.

PETER LILJEDAHL, Simon Fraser University, Faculty of Education, 8888 University Drive, Burnaby, BC V5A 1S6

Mathematics for the Liberal Arts

Mathematics did not emerge *ex nihilo*. It is a human endeavour that is motivated either by need (utility) or beauty (aesthetics). Awareness of mathematics as such will help to make it more meaningful and accessible to everyone in general, but to Liberal Arts students in particular. As such, we have developed two courses at SFU (Educ 211, Educ 212) that are specifically designed to increase the mathematical literacy, quantitative reasoning, and deductive argumentation of Liberal Arts students. In these courses, mathematics is presented as a meaningful and accessible human activity situated in relevant historical and cultural contexts. These courses focus on the aesthetics and utility of mathematical experience, emphasising the human experience of learning and doing mathematics. Though mathematical topics comprise the course content, the approach is deliberately and consciously pedagogical in orientation, drawing on knowledge and practices from education. Students focus on problem solving, participatory investigations and collaborative projects, rather than applying the standard lecture/tutorial format typical of most undergraduate mathematics courses.

SUSAN MILNER, University College of the Fraser Valley, 33844 King Road, Abbotsford, BC V2S 7M8

Unleashing Enthusiasm: Teaching the History of Mathematics

Undergraduate courses in the history of mathematics are becoming more popular all over Canada and the US, as mathematics educators see the need to show their students the connections between human creativity and the discipline. Student response to our first offering of a course in the history of mathematics surprised everyone involved. The students' enthusiasm, curiousity, hard work and creativity made for a highly memorable semester—and create hope for the future, as many of these students plan to teach mathematics themselves. Our course is designed for students with considerable background in mathematics:

could more people be encouraged to get involved in mathematics through the offering of history of mathematics courses at lower levels? Which successful elements of our course might work in such courses?

SUSAN OESTERLE, Douglas College, New Westminster, BC
Mathematics for Liberal Arts: Realities, Opportunities & Challenges

We live in a society pervaded by math anxiety and weak mathematical skills. Courses like Mathematics for Liberal Arts offer us an opportunity to address these issues and reach out to a wider audience, but how do we meet the challenges that arise? In particular, how do we overcome anxiety, instil confidence and competency, and move beyond this to awaken a deeper appreciation of Mathematics, and the role it plays in our lives?

FRANK RUSKEY, University of Victoria, Victoria, BC
The Amazing Mathematical Object Factory and its Relatives

In this talk we will describe a couple of web sites produced by the author that have proved popular with teachers of mathematics at the secondary school and college levels for the teaching of various topics in discrete mathematics. The "Combinatorial Object Server" (COS) will produce exhaustive lists of discrete structures such as permutations, combinations, trees, solutions to pentomino puzzles, and so on, based on user-supplied input parameters. The "Amazing Mathematical Object Server" is similar but more oriented to younger students. We will describe the philosophy, capabilities, and underlying technology of these web sites.

TARA STUCKLESS, University of Regina
"Math on the Move" in Saskatchewan

It is often the case that math enrichment takes place in urban centres. Each year the University of Regina hosts a full-day event called "Math Camp", which is open to any students from grades 7 to 12 that wish to participate. Students get to experience math in a fun, low-stakes setting with a group of highly motivated and informed pre-service teachers. We set out to overcome the distance barrier that prevents students from schools outside of the greater Regina area from participating by initiating "Math on the Move", a mobilized version of the math camp. In this talk, we will discuss the methods used and outcomes achieved on our first outing to a school at Carry the Kettle, a First Nations community 100 km east of Regina.