

REGISTRATION

Course fees include all handout materials, coffee & snacks, and parking. Fees of more than \$100 are tax-deductible and are GST exempt in Canada. Please note the fees are in Canadian Dollars. US citizens may pay in US\$ at a rate of \$1.00CDN = \$0.75USD.

	*Early	Regular
<input type="checkbox"/> Option 1: 2 days	\$250	\$300
<input type="checkbox"/> Option 2: 3 days	\$350	\$400
<input type="checkbox"/> Option 3: 4 days	\$450	\$500
<input type="checkbox"/> Option 4: 5 days	\$500	\$550

Please tick which days:

Mon	Tues	Wed	Thurs	Fri
<input type="checkbox"/>				

* Early registration is prior to July 22nd, 2004.

Enclosed fee in the amount of \$ _____

Name _____

Position/Title _____

Organization _____

Address _____

Postal Code _____

Telephone _____

Fax _____

E-Mail _____

ENROLMENT

Enrolment is limited to 22 participants. Please register early so as not to be disappointed.

Compete and return this form along with fee payment to:

Betty Chan

Department of Mathematics
Simon Fraser University
Burnaby, BC V5A 1S6

Phone: (604) 291-3331

Fax: (604) 291-4947

E-Mail: mathclrk@sfu.ca

Fees should be paid by cheque, **payable to: Simon Fraser University**. Faxed reservations are accepted. When registering by e-mail, please provide full registration information.

Cancellation Policy

Cancellation of registration prior to August 2nd is subject to an administration fee of \$75. Cancellations after this date do not qualify for a refund, but replacement registration are welcome. The cancellation request may be made in writing, by telephone or by e-mail and the original Simon Fraser University fee receipt must be returned.

Location:

Room K9509
Shrum Science Centre
Simon Fraser University
Burnaby, BC

Fee: *See registration area for fee structure.*

*Sponsored by Waterloo Maple Inc.,
Waterloo, Ontario (the Developers of Maple)*

*organized by
the Department of Mathematics
Faculty of Science
Simon Fraser University*

TEACHING & DOING MATHEMATICS WITH MAPLE

With Michael Monagan

Monday to Friday
August 9th – 13th, 2004
8:30am – 5:00pm
Simon Fraser University
VANCOUVER

Department of Mathematics
FACULTY OF SCIENCE
Simon Fraser University



ABOUT THE COURSE

This super course, now in its sixth year, is intended for people who are teaching mathematics or using mathematics in their work who would like to learn Maple from an expert. Maple is an industry leader in mathematical computation. It includes facilities for exact algebraic computation, numerical computation, graphics, and a modern graphical user interface as a working environment.

The course is designed to help you:

- Learn to use Maple interactively as a problem solving tool;
- Create graphic images;
- Learn to use the facilities available in Maple for mathematics applications;
- Write simple Maple programs;
- Learn how to incorporate Maple into a Mathematics course;
- Prepare course materials and documents for live presentations, assignments, exams, and publication; and
- See lots of applications where using the computer is appropriate for teaching.

COURSE OUTLINE

The course is divided into five days running from 8:30am to 5:00pm. The first day is especially for those who have not used Maple before. Mornings include direct instruction from Dr. Monagan on the topics listed below.

In the afternoons, participants work with Maple in a lab under Dr. Monagan's guidance. Participants may work on a problem of their own choosing, or from a list provided to them.

COURSE SCHEDULE

Day 1: Monday, August 9th – Algebra & Calculus: The Basics

Numbers, equations, polynomials, formulae, simplifying formulae and solving equations. Graphing functions. Fitting functions to data. Derivatives. The Maple GUI and preparing Maple worksheets.

Day 2: Tuesday, August 10th – Calculus and 2D & 3D Graphics

Integration. Taylor series. Graphing curves and surfaces, and creating animations. Multivariate calculus. Plots of partial derivatives & tangent planes. Running mathematics experiments.

Day 3: Wednesday, August 11th – Linear Algebra and Preparing Documents

Vectors, matrices and linear algebra in Maple. Graphing of linear systems, linear transformations, and eigenvectors for teaching. Solving polynomial systems, factoring polynomials and Groebner bases. Converting teaching and presentation materials to PostScript, LaTeX and HTML.

Day 4: Thursday, August 12th – Differential Equations and Numerics

Analytical solutions, graphing solutions, equilibria, phase-portrait plots. Numerical linear algebra and numerical solutions of ODEs. Creating your own graphics.

Day 5: Friday, August 13th – Programming and Modelling

Programming in Maple: the Euclidean algorithm, the logistic map, a cellular automaton, fractal images, and RSA public key encryption.

For Further Information, please contact:

Dr. Michael Monagan

(604) 291-4279 or (604) 264-1063

Electronic Mail: monagan@cecm.sfu.ca

ABOUT THE INSTRUCTOR

Michael Monagan is an associate professor in the Department of Mathematics at Simon Fraser University. Dr. Monagan has a PhD in computer science from the University of Waterloo. He is one of the Maple inventors and is using Maple in teaching and research. He is an author of the book *Programming in Maple Guide*.

Dr. Monagan has experience with industrial applications of Maple and experience with using Maple in the classroom. He is currently involved in the continuing development of Maple and his interests include scientific computing, simplification of formulae, polynomial factorization, and visuals for teaching.

COURSE MATERIALS

Participants will be given a library of applications of Maple that Dr. Monagan has assembled over the last 5 years.

Participants will also be able to browse a collection of Maple books.

FULL MAPLE FOR \$200.93

Course participants will have the opportunity to purchase a full version of Maple for their personal computer at a special rate of **\$214** (tax included). Maple is available for the MacIntosh, Windows and Linux on a CD only.