Your friend,

math NEWS

Volume 42

Number 0

Frosh Issue

1986

Presidents' Messages

MathSoc X-stream (Fall '86)

So, it's your first year at university. What is there to do besides homework? A lot. I'm here to tell you what MathSoc can do for you, and what you can do for MathSoc.

Every Math student who paid their $5.00 fee is a part of Math-Soc, the Math Students' Council. A list of services that we provide is included later in this issue. MathSoc has a number of administrative positions - elected ones like President, Vice and Treasurer, and various appointed positions like Social Director. What can you do for Math-Soc? Get involved and keep your sanity. All the hours spent on homework will drive you crazy, so what better way to rid yourself of some frustrations? Give us an hour of your time, or more. Office workers are needed, as well as people to run social events like the infamous Wine and Cheese. It's a great way to meet people. It's fun and looks good on a resume. You learn how to deal with people (and yourself). It's a chance to learn about the Math faculty, U of W and the other societies (*those bloody engineers*).

No matter if you were involved in high school or college students' council, take this opportunity to participate in student life. Remember, there is more to life than homework.

So, when you come to school in September, drop by the MathSoc office. Don't forget to participate in the MathSoc orientation events. It's a great way to meet new friends, and party until you collapse (before you drown in homework).

Hope to see you soon. Good luck in your 1st year.

Wilma van der Veen

Federation of Students

Hello, and welcome to all new and returning students. The start of university can be an exciting but sometimes overwhelming experience. The Federation of Students is here to make sure that your university experience is exciting but not too overwhelming. The Federation of Students at the University of Waterloo is your undergraduate central student body. Our purpose is to make your stay at Waterloo a little more enjoyable.

During the first few week of school you will learn a great deal about this university. You will soon find you have an awful lot to be proud of. The beginning of September is an excellent opportunity to get involved with this outstanding community. Participation is the key to a well-rounded education both socially and with your academics. In your faculty you will soon find the math society to be a well organised, motivated group of students. I encourage you to get involved with them, it will benefit both you and your society.

Most importantly, it is an excellent opportunity to develop long lasting friendships. These friendships will act as the support system that is so vital during university.

In closing, again a warm welcome to everyone. If you have any problems, please contact us. Best of luck this year.

Scott Forrest

MathSoc Y-stream (Summer '86)

I would like to take this opportunity to welcome all of you to the University of Waterloo. You are entering a faculty with a world wide reputation for excellence; far above some of the famous American Universities.

Your first few weeks in Waterloo may be somewhat overwhelming. You will probably feel totally lost. Don't worry, these feelings are normal. That's what Orientation week is for; to loosen you up and make the transition to university life as short and painless as possible. It is the best way to meet people and make new friends.

The Math Society, known as MathSoc (not to be mistaken for mathSOC), provides a number of services to help you cope with your courses. MathSoc aims to promote student activity both academically and socially, sponsoring a number of events for your pleasure. Math-Soc also needs volunteers. You can get involved by offering as little as one hour a week. We are located in MC 3038. Remember that, it will be useful to you. Most importantly, MathSoc is an organisation funded and operated by students, for students.

I hope you enjoy your stay at Waterloo, and will see you all in January when I return from my work term.

Steve Murdoch

What *is* this, anyway?

Before you read any farther, let me answer that for you. "This" is **mathNEWS**, the Math Faculty student newspaper. In fact, what you have right now is the Frosh Issue for 1986. What's a Frosh? You are. It's short for freshman. The Frosh Issue exists to provide freshmen with a wealth of information on sundry topics in one compact, and hopefully attractive, package. Please read the articles carefully, as they contain very important information. The articles cover a wide range, from housing to humour, from course information to co-op procedures. Also included are eight pages from the *orientation people*. They are printed on pink paper, and located at the back of this issue. All the orientation events are listed there. Get out to as many as possible – they're lots of fun.

During the school term, **mathNEWS** publishes six to eight issues. Each contains a mix of news, opinion, humour, puzzles and Prof Quotes. Contributions are encouraged – we're always glad of new material. You are also encouraged to come out to production nights - when **mathNEWS** is put together. Not the least of the benefits is free pizza for production staff! You don't have to know how to do anything. We're glad to teach you. [Heck, I'm not so sure I know what *I'm* doing!]

You'll find that being at University brings you a greater degree of freedom than you had in high school, but with that freedom comes responsibility. There are many things to get involved with here, but if you try to do too much you will fail courses. That's fairly easy to do here - University courses take much more work than high school classes ever did. Waterloo's workload is heavy, and your fellow students are by and large among Ontario's best. But don't let that scare you. It's not impossibly difficult. You just have to learn how to balance work and play.

Most importantly, enjoy your stay here at Waterloo. Students can easily get bogged down in the workload, and lose track of the reasons they came here. If you can keep your priorities straight, you'll have a lot of fun, and come through with flying colours.

Stuart L. Hodgins
mathNEWS Editor
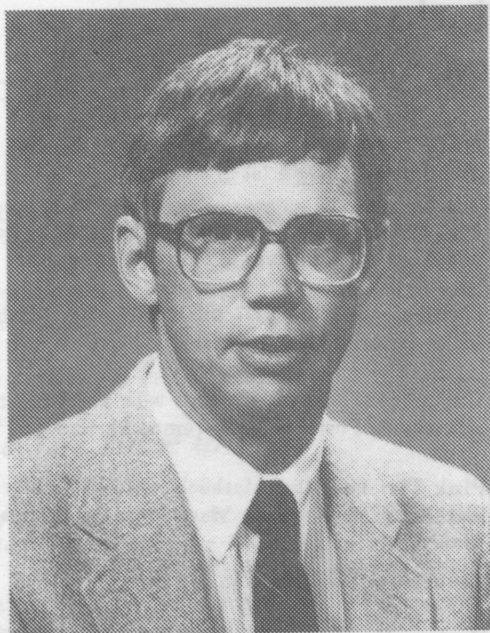
J.G.Kalbfleisch
Dean of Mathematics

I am happy to be joining you for your orientation to the Faculty of Mathematics. I certainly feel we are kindred spirits, since this is my freshman year as the Dean of the Faculty. So while you will be finding your way around six floors of this building, I will be discovering new responsibilities in the Dean's Office.

The fifth floor Dean's Office area includes the office of the Associate Dean of Undergraduate Affairs, Professor Ian McGee; that of the Assistant Dean for External Programs, Professor Ron Dunkley, whom you may remember from the High School Visitation Program; and the Faculty of Math Undergraduate Office, directed by Professor Peter Brillinger. All of these people are here to help you become familiar with the Faculty.

Please take advantage of the assistance provided through Operation Mathstart in MC5158, until September 19th. In addition to providing you with information and the opportunity to meet professors and fellow students, free refreshments will be available at Operation Mathstart. You might also wish to consult the "Math Circles" handbook for further information concerning the activities of the Math Faculty.

I am sure that one of the advantages that attracted you to the Faculty of Mathematics in the first place is the wide range of math and computer-related courses available to you during your undergraduate program. You should also investigate courses offered by other faculties on the campus. Over the next four years you have a wonderful opportunity to learn about almost any subject that interests you. Plan to include several courses from another area in your program, so that you will have a potential field for application of your mathematics skills.

There is always a period of adjustment as students adapt to the greater freedom and independence of university life. It is now your responsibility to develop and adhere to a study schedule which keeps you on top of your course work, yet leaves time for socializing and extracurricular activities.

Again this year, the Faculty will offer at least two information sessions for first-year students as well as counselling interviews during the Fall Term so that you will have the opportunity to have any questions about your progress and expectations in the Faculty addressed. The instructors in Math 130A and 134A will provide more detailed information concerning these sessions in October.

For now, I simply want to say - you are most welcome to our Faculty and I know you have a challenging and enjoyable undergraduate career ahead of you.

As Director of Undergraduate Affairs in the Faculty of Mathematics, I would like to extend a warm welcome as you embark on your freshman year at the University of Waterloo. We are all fully aware that your first few weeks on campus can be rather hectic ones as you adjust to a totally new environment. I hope that you will take advantage of every opportunity to make things as pleasant as possible for yourself.

At a large university it is easy to get the impression that nobody really cares about you, and as a result, you can become very much a "loner". I would urge all of you not to fall into this trap. There are numerous people around the Faculty and the campus-at-large who are more than willing to assist you. However, with so many students, the onus is on you to make new friends, contact faculty members for assistance, and become involved in campus life.

The purpose of Orientation is to help you get started on the right foot in becoming a new member of the University community. The numerous activities and events provide ample opportunity to familiarise yourself with the various facilities on campus and to initiate new contacts with fellow students, some of which may well evolve into life-long friendships. Of the numerous activities planned for you, there are three in particular that I would like to draw to your attention and encourage your participation.

OPERATION MATHSTART, scheduled to begin on Tuesday, September 2, is intended to assist you in coping with registration and scheduling problems that often face new students. Even if you haven't encountered such problems, the MATHSTART centre is also a good place to meet other students and faculty members in an informal atmosphere. MATH DAY, scheduled on Wednesday, September 3, is jointly sponsored by the Faculty of Mathematics and MathSoc. This day-long program includes general-interest sessions, specific subject-area sessions, an orientation session for co-op students and a barbecue, followed by the English Language Proficiency Examination and an evening Caribbean Pub sponsored by MathSoc. FROSH DAY, scheduled for Friday, September 5, is jointly sponsored by the Federation of Students and the University Administration. This campus-wide program includes a Welcome from the President of the University, Dr. Wright, a pep rally, a Warrior's Band performance, an introduction of the Deans from the various faculties, and a barbecue dinner. Further information about these Orientation activities can be found in your Orientation Package. This package contains all kinds of useful information, and I hope that you take the time to read through this material with considerable care.

The amount of work facing you in the next few months is probably greater than most of you have ever encountered before. Nevertheless, if you plan your time carefully, you should be able to give your academic studies their fair share of your hours and still have time left to devote to social and recreational pursuits. There are innumerable activities on the campus to suit everyone's tastes. The secret is to find a good mixture of enjoying yourself and doing justice to your studies. The actual blend in this mixture will largely depend upon individual interests and academic ability, and these vary considerably from one person to another. Nevertheless, it is vital that you devote some of your time to both scholastic and social activity if you are to have a rewarding time at university.

I urge you not to delay. Get involved and start working right at the beginning of the year. Don't wait until "later". "Later" may just be too late!
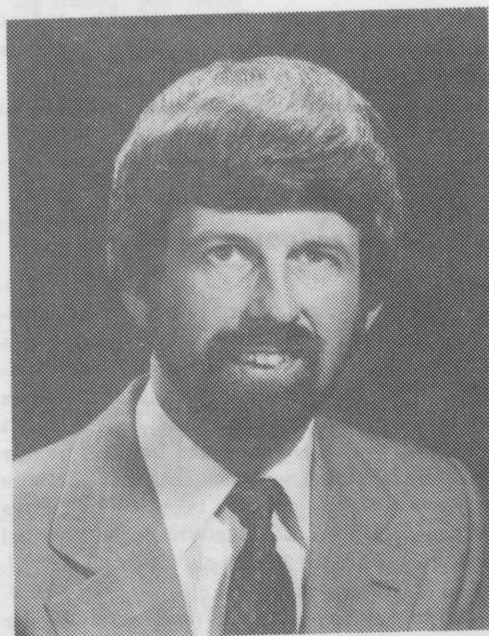
Peter Brillinger
Director of Undergraduate Affairs

The Frosh Dictionary
A list of terms you may wonder about

Arts Library (Dana Porter): The main campus library, looks like a big sugar cube at the centre of campus. According to legend, it's slowly sinking due to the weight of its books.

Bombshelter: The original campus pub and party place, a great alternative to Club 750 (q.v.), serves pizza for lunch.

C and D: The MathSoc coffee and donut shop, a food bonanza full of ice cream, caffeine, and pastries and excellent prices. It's located inside the C&D lounge (cleverly enough) in the south end of the third floor of MC. Just follow the smell of coffee and bagels.

Campus Centre (CC): Student building between MC and the PAC. Houses SCOOPS and the turnkeys, the Bombshelter, the Wild Duck Cafe, and even the Fed office.

Cinema Gratis: The Turnkeys show a variety of eclectic and popular celluloid for *free* (hence Gratis) on Wednesday nights in the CC. Good fun, and you can't beat the price.

Club 750: Nominally 'Federation Hall', it's the best student pub in Canada. Serves lunch during the day, and parties at night. Worth getting out to see, you'll love it.

Co-op Student: A gypsy with books.

Endless Loop: See Loop, Endless.

Guelph: The sound a dog makes as it tosses its cookies.

Feds: The Federation of Students, a campus-wide organisation that aims (and often misses) to represent students. Has a few useful services, like a cheap bus to Toronto on Fridays.

Loop, Endless: See Endless Loop.

Math: A science which is also an art, and a great place to meet new friends.

mathNEWS: What you're reading now. This is Math's student newspaper, a bastion of humour, bad puns, a little math, even less news, and other unpredictable elements.

MC: The Mathematics and Computer Science building, located at the north centre part of campus. It's the big, grey, square building. You'll be spending a lot of time here.

MC 3038: The MathSoc office, the place to go for social information, photocopies, and copies of old midterm exams.

Natural Log: The *official* MathScot of MathSoc, the symbol of our society, essentially a laminated log but we love it anyway.

Oxymoron: Any set of words with a self-contradictory meaning, classics include Postal Service, Jumbo Shrimp and Village Food.

Pink Tie: The other MathScot, a math faculty symbol also used by MathSoc. Often stolen. Much loved by X-stream, less so by Y-stream.

Recursion: See Recursion.

Registration: Your introduction to queueing theory. Bring a book, you may be in a lot of long lines.

SCOOPS: The Fed-sponsored ice cream shop in the CC.

Village Food: Illustrates the difference between Well-cooked and cooked well. Food fit for a king. (Here, King! Here, boy!)

Village One: The closer on-campus residence, laid out like a maze, mostly single rooms.

Village Zoo: The other on-campus residence, double rooms.

Village Three: Sunnydale, a charming student ghetto north of campus.

Watpubs: Mobile Bombshelters held on work-terms in faraway cities. Held weekly for co-ops to get together while away from UW.

Wild Duck Cafe: Campus Centre dining emporium, good food at reasonable prices for when you're after more than just a doughnut.

WLU: The high school down the road (Wilfrid Laurier University).

The Co-op Cookbook
Generic Meat

Preparing: Take 2 to 4 pounds of your favourite frozen viand, poultry, or fish (it doesn't really matter) and throw it (not gently) in a broiler pan. Bathe with various oils (10W-40 will do nicely) and sprinkle with sundry seasonings. Wrap in tinfoil, tarpaper, sandpaper, wax paper, or foolscap. Place the meat in a preheated (Aha! Forgot, didn't you!!) oven at 275 degrees Fahrenheit. Agonise and fight off hunger for 45 minutes or so.. Take the meat out and remember that you were supposed to use the broiler. Once that detail is taken care of, leave the meat to broil for 90 minutes. Read a book. Write a letter. Call up a fellow co-op student to reminisce about old times at school. Remember the meat? Well, it's done *now...*

   Serving: If your meat (or broiler pan) is still recognisably similar to its original form, boil in salt water until this is not possible. Serve with hastily prepared, undercooked vegetables. Add alka seltzer as desired.
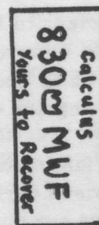
Görg Mandrive

The Battle Hymn of the Tutors
(sung to the tune of: '*When You Eat Your Smarties*')

Calculus
8:30 MWF
Yours to Recover

When you fail your students
   do you fail the mathies last?
Do you give the artsies essays
   or do you give them math?
Give those engineers some theory
   but tell me when I ask!
When you fail your students
   do you fail the mathies last?

Everything You've Ever Wanted to Know About Fees...

Part of the mystique about starting university is where all the money goes. The university loves this part of the any undergraduate program the most, and relishes in giving their various Fees wonderful and exotic names. Intercollegiate Athletics Fee, Federation Hall Fee, WPIRG Fee, what do they all mean, and do I have to pay them all?!?

Well, you don't actually have to pay them all...

Fees You Have to Pay

Basic Fee: This is your basic tuition Fee. It covers the basic costs of the courses you as a full time student for four months. Individual courses may cost more money (such as the purchase of lab breakage cards for a chemistry lab, or a studio fee if you're taking a music studio course), but in general, this fee covers course costs.

Photo ID Cards: Photo ID cards are your official form of identification on campus, with your picture, faculty, signature and library bar code (used to sign out information from the library). You're required to produce one (your own) when you write exams and midterms. You have to get your picture taken for this (probably the worst picture of yourself you will ever own.) You only have to pay for the card once (unless you lose it.)

Co-operative Fee: If you've registered as a Co-op student, then this fee is assessed to you to cover the costs the university incurs in handling the co-op program, like the salaries of co-ordinators who are supposed to find jobs for students (usually it seems like the other way around), bookkeeping costs and the like. This fee is big and it promises to go up. (If you're in co-op, you always have to pay the fee, even if you don't go through interviews, or have found a job for yourself.)

Computer Fee: This one is a tricky item. Right now, the university can charge you this fee. In a few terms, the provincial government won't allow them to, and the basic fee will go up. This fee is supposed to cover the cost of maintaining the various computer systems on campus. This applies even if you're not using a computer for any courses this term.

Intercollegiate Athletics Fee: I looked this fee up in the calendar, and you know, no one bothered to explain what it is. I presume that this fee goes toward funding of our intercollegiate teams (football, basketball, volleyball, swimming, etc...). This would help pay for tournaments and meets, and support the operation of those teams.

Health Insurance Fee: This is partly for you and partly for the university. The health insurance you buy helps cover insurance costs for the university, and you get a discount when buying prescription drugs (even on work terms) and other things. For more details, go over to health services and pick up their brochure.

Recreational Facilities Fee: This fee helps pay off the (relatively) new arena that was built on the north campus. This building contains an ice rink and a running track (a weird combo, don't you think?).

Federation Hall Fee: This fee goes toward paying off the (very) new student pub on campus, near Village I.

Fees You Have to Pay that You Can Get Back

All of these remaining fees you can get refunded by applying to the various organizations which got the money within 3 weeks of the start of lectures.

By the way, most of **these** organizations are really interesting, and almost all of them (99.9%) would be overjoyed to welcome you into their midst.

Federation of Students Fee: As an undergraduate student at Waterloo, you have the option of belonging to the Federation of Students, or the "Feds". The Federation provides students with lots of services, like Scoops, the two pubs on campus, legal services, a word processor service, films on the weekends (FedFlicks), and more.

Mathematics Society Fee: As a math student, you also have the option of belonging to MathSoc. MathSoc funds various services and events on campus. See the article elsewhere in this issue.

Waterloo Public Interest Research Group (WPIRG) Fee: This institution is funded by students (you and me) and in the past has looked into things like acid rain and nuclear waste, and brought in such famous speakers as Ralph Nader.

Radio Waterloo Fee: Radio Waterloo (CKMS in stereo) is the student run radio station here on campus. They provide a wide variety of programming over a range of musical styles and subject matter.

Imprint Fee: "Imprint" is a campus "newspaper" and normally [Ha! - Ed.] is published every Friday. The quality of the paper is directly attributable to those working on it, and although its quality goes up and down, it contains a lot of information of immediate relevance to the student population.

All these things are at least partially funded by **YOU**, and it is your responsibility to see that you're getting your money's worth.

Fees for Fall, 1986		
Fee	Amount	Notes
Must Pay...		
Basic Fee	$632.00	same for co-ops and regulars
Co-operative Fee	195.00	only for co-ops
Computer Fee	153.00	CS majors
	108.00	all others
Intercollegiate Athletics	22.84	whew!
Health Insurance	14.64	regular
	27.45	co-ops
Recreational Facilities	10.00	
Federation Hall	7.50	
Photo ID Cards	4.25	one time fee
Refundable		
Federation of Students	14.25	
Math Society	5.00	a bargain
WPIRG	3.00	
Radio Waterloo	3.50	
Imprint	3.00	

Ron Pfeifle
4A Computer Science/EE Electives

A Short Course in Computer Science

The most popular program of study within the Faculty of Mathematics is computer science. This is no wonder considering that the decrease in computer hardware costs has led to widespread computer use in almost all areas of business and industry. Waterloo's high calibre computer science (CS) program has seen an enormous increase in popularity.

Typically 800 math frosh come to UW each September. In recent years, as many as 500 have applied to computer science in second year. Unfortunately, lack of space and facilities permits only about 300 students to be accepted into CS. I would like to give you some idea of what computer science is like at the University of Waterloo.

There are several ways in which you can study computer science at UW. If you opt to major in computer science, then you will find a wide variety of programs open to you. Two of the options are electrical engineering electives (CS/EEE) and information systems. In CS/EEE, you take several electrical engineering courses which teach you the basics of analog and digital circuit analysis and design. Those who would like to learn how computers are designed and built will find this option very interesting. The information systems option concentrates on applications of computers in business by requiring you to take various accounting, business, economics and management science courses. Both co-op and regular students can enter a joint honours or double honours program which combines computer science with statistics, applied math, pure math, math teaching option, operations research, or combinatorics and optimization. You could also minor in just about any program offered by any of the faculties, provided that you can fit the required courses into your time table. Computer science itself can be taken as a minor while majoring in another math program or even while majoring in a program offered by another faculty. Check the section on the Faculty of Mathematics in the undergraduate calendar for more detailed information on all of these options.

What do you learn while studying computer science at Waterloo? You will take many math courses, as do all other math students. What does math have to do with computer science? Computer science theory is mathematical in nature so your first and second year math courses will form a good basis for third and fourth year computer science courses. Also, the problem solving skills you acquire in math courses (the ability to understand what the solution to a problem is, and how to go about obtaining that solution using the given information) will help you in computer science courses, your electives and on work terms. The first and second year CS courses will teach you good programming skills. Once you have acquired these, you will be ready to take on the more interesting upper year courses. Third year courses are more theoretically oriented. Fourth year courses deal with more specialized topics including compiler design, operating systems, real time programming, graphics and numerical analysis.

In addition to the CS major courses, there is also a group of computer science courses for non-CS majors. These courses begin in second year and closely parallel the CS major core courses but do not go into the same amount of detail. Many such courses offered at the upper year level deal with business applications from a user's point of view. These courses are not available to computer science majors.

Why should you consider a computer science major program at UW? If you enjoy programming and want to delve deeper, to learn how computers run programs, store data, and how the hardware itself works, then consider computer science. Or, if you want to learn how to prove mathematically that an algorithm is correct and will actually produce the desired results, or how to design data bases, or how to perform symbolic mathematical computations, then computer science will interest you.

If all that 'techie' stuff seems like too much detail for your tastes, but you still wish to become a better programmer and apply that skill to solving other problems, then consider the CS courses for non-majors. In combination with other math courses such as applied math, statistics, or the business administration option, or perhaps courses outside of the math faculty, the combined skills of computer programming and some other discipline will be just as valuable as the skills of

a computer science major.

Regardless of how you feel right now, remember that most math programs, and all computer science major programs don't begin until second year. You have time to talk to other students and to professors. The undergraduate calendar is useful for clarifying requirements for all degree programs offered by the university, but remember that it is only a rule book. To find out what the courses are *really* like, talk to some upper year students. You will meet many during orientation and afterwards.

Above all, you must make the choice that is right for you. Don't choose a program of study simply because it will lead you to a high paying job (computer science jobs do not necessarily fit this category) or because everyone else is taking it. Consider what interests you and what you would enjoy learning.

Brad Sokol
3A Computer Science/EE Electives

Advanced Insanity?

"What a decision – honours math or advanced honours math?" This thought may be going through your head now. For those of you who are unaware, there are two streams of honours math courses. Most math students choose to take the stream Math 130a/b and Math134a/b; however, Math 140a/b and Math144a/b, the advanced honours course, are also available. The advanced courses cover the same material as the regular courses but more rigorously and theoretically. Hence more work is expected and required, with more challenging assignments. As an encouragement to consider these courses, the Math Faculty has assured students that taking these course will not significantly change the final marks that they would have gotten in the regular honours sections. They suggest students who take these courses have at least 85 in their Grade 13 math courses and 65 in the Descartes.

Now, if you enjoy mathematics, aren't worried about a little extra work, and would like a thorough understanding of some basic math concepts (*nothing* is considered 'obvious'), then you should investigate these courses. The overall format of these courses varies greatly with the professors who are teaching. Thus to get a good feel of what to expect, it is best to attend some lectures. You can easily switch into the 130/134 courses after a few weeks if you so desire. It is also a good idea to attend a few 130/134 lectures to see what they are like.

For myself, some topics that I took in 140/144 appeared in the 2nd year regular honours courses which helped greatly in my understanding of them. Therefore, in retrospect, I am glad that I took these courses. Most people I have talked to in the regular honours sections feel that those were enough work and that they would not have survived 140/144. Thus (as always) the decision is yours and yours alone (alas...).

fletniowski

SOME STUDENTS JUST CAN'T TAKE MATH 140.
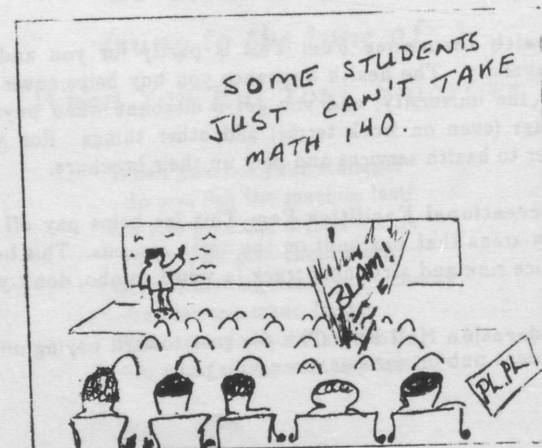
Studying Magic

Well, here you are, Joe/Jane Frosh entering first year in the Faculty of Mathematics at the University of Waterloo. You have just finished high school with good marks, especially in mathematics. You have a partial idea of what you would like to take at university, most likely including at least a minor in Computer Science. Outside of that you probably aren't sure what types of math courses you will take. In this article I would like to address the mathematical side of your education.

As you are well aware, mathematics is a classical study that goes back millenia. However it is still very active today. Just about every discipline relies to some extent on different mathematical concepts. Of course mathematics is an integral part of Physics and Engineering but it is also very useful in Chemistry (there is an equation whose solutions are believed to describe the occurrence of any chemical reaction), Biology (eg. in the study of fluid flows in the body), Economics, and even Psychology and Sociology (particularly in statistical studies). All of these make use of sophisticated university mathematics.

Now that I've given you an idea of how widespread mathematics is, I'd like to consider its study at Waterloo.

Altogether in first and second year, you will be taking 4 calculus, 4 algebra (1 of each in each term), and 2 statistics (1 in each of the 2nd year terms) courses. The calculus courses consist of deeper looks into differentiation, integration, and sequences and series than you had in high school. This is basic material that will appear frequently in other courses (do not read "easy" for basic). The algebra courses are generally abstract. Classical algebra (in 1A), linear algebra (in 1B & 2A), and abstract algebra – group theory (in 2B) are studied. Most of classical and abstract algebra you will not have seen before, but linear algebra will generalise your view of vectors and matrices. Statistics in 2A is a comprehensive look at probability, and statistics in 2B a look at random sampling studies.

In 1B you will be asked to decide which major department you would like to enter for more specific study. You will have the choice of Actuarial Science, Applied Mathematics, Combinatorics & Optimization, Computer Science, Pure Mathematics, and Statistics. These are thoroughly described in the Faculty of Mathematics booklet.

Actuarial Science is the consideration of insurance and pension systems. In this field it is possible to make large amounts of money but it requires an awful amount of work. To become an actuary, it is not enough to just graduate with your BMath, but you must write a series of examinations on a wide range of topics that you take outside of university.

Applied Mathematics concerns itself with modelling the real world mathematically, solving the model and interpreting the results. This often involves differential equations (you'll briefly see these in calculus). Applied mathematicians work closely with physicists, engineers, and pure mathematicians.

Combinatorics and Optimization are subjects useful in the study of operational efficiency. The following major areas occur under this study: Enumeration, Combinatorial design (finite point geometry), graph theory (no, not axes and curves, but nodes joined by edges (you'll see what this means), and mathematical programming ("optimal allocations of limited resources").

Computer Science is also a mathematical study, at least in many areas. Truthfully, much of what you learn in first and second year computer science will not seem too mathematical, however much of the work in computer science is done mathematically, without actually sitting behind a terminal. For example, mathematics is relied on in the following: the machine representations of numbers (finite amount of numbers used to represent an infinite amount of numbers), function calculations (without significant errors), and proofs that algorithms will actually do what they were designed to do.

Pure Mathematics is often considered the study of mathematics for its aesthetic beauty. In other words, a mathematical problem is conceived for no other purpose than to find its solution or to show that it has no solution. This may sound strange, but there are classical cases where topics in pure mathematics were found to have important applications. For example, Einstein relied heavily on pure mathematical concepts to propose his theories.

Statistics is a science important in many areas. Its main concern is with sampling of small amounts of data to predict the results in the much larger 'sampling space'. To do this, many questions must be considered: which data fairly represent the whole space? what do these results say about the whole space? can my theory be shown to be incorrect?

Well, there you have it – mathematics at Waterloo in a nutshell. It is important for you to observe the different areas of mathematics in your first and second years to get a feel for what you would like to do. Remember that math plays an important role in our ever-changing world, which implies that there will always be problems to solve (or create).

fletniowski

St. Jerome's and Mathematics

I'm sure that some of you out there have chosen to study mathematics at St. Jerome's College. Here are a few pointers on what you can expect over the next few years.

St. Jerome's is a church college affiliated with the University. Students registering in any co-op or regular math program can enroll at St. Jerome's. Those of you who have chosen the regular system of study will probably attend all of your first and second year core courses (Math 130A/B, 134A/B, 230A/B, 234A/B, CS 180, 140) at St. Jerome's. If you are a Stream 8 co-op, you will take all of your first year and 2A core courses at the college. If you are in Math/CA, your 1A and 2A core math courses will be offered at St. Jeromes's. However, those of you who are in 4 Stream will only spend your first term at St. Jerome's. Thereafter, the core courses which you require will not be offered at St. Jerome's during the terms that you are on campus.

Being at St. Jerome's, you will probably find that your classes are smaller in size (appoximately 75 students in 1A) than those on the main campus (especially after 1A, when about 25-35% of the class goes on its first work term.) There are no lecture halls at St. Jerome's, and so your classes will be taught in classrooms (unlike the main campus where lecture halls hold about 200 students per class.) This may make it easier for you to adjust to university as the atmosphere won't be too much different than that of high school. It may also be easier to meet and get to know your classmates.

When you begin to take courses on the main campus, you will still be enrolled at St. Jerome's. This means that you pay your fees, pick up your schedules, and vote in student elections at St. Jerome's. You can also use the St. Jerome's library which is often more quiet than the EMS library.

If you are enrolled at St. Jerome's, do make a point of going over to the math building occasionally to visit the C&D, use the library facilities or just to drop by MathSoc and use the stapler. You are entitled to use these facilities (even if you aren't taking any courses on the main campus) since you are a fee paying member of the math society. Also, most of the math clubs (eg. AM, CSC) have offices in the Math and Computer building, so drop by and see what's going on.

MED

Keener Bingo

You will soon learn that on some rare occasions, lectures can become, well, less than interesting. So, for those times when counting the ceiling tiles seems more appealing than that diophantine equation on the board, we present Keener Bingo.

To begin, we must clarify what a keener is. They can easily be spotted in the front row of any class and are noted for their remarkable ability to ask an unusually large number of confusing questions during a lecture. Some further characteristics to watch for are:

Standard Keener Equipment
- Briefcase
- Checkered trousers
- Wears an undershirt
- Muscle shirt (but no muscles)

Optional Keener Accessories
- A very powerful calculator such as an HP 41CV with card reader, printer, and optical wand.
- Plastic pocket protector for front shirt pocket. Contains six different coloured pens, several mechanical pencils, and a pencil sharpener.
- Slide rule, complete geometry set and a well used flowcharting template.

Other Distinguishing Keener Features
- Extra long right arm for better visibility.
- Greasy hair.
- Tape on glasses.
- Knows π to 200 digits and wears a t-shirt and button to show it.
- Briefcase is always overflowing with books.

The Rules
Pick out three keeners and write their names on a piece of paper. As the keeners are keen, cross of their names. The first person to cross off all the keeners on their list yells "BINGO" and is awarded one Bingo Point. Play the game over several classes or several weeks and the winner is the person with the most points at the end of that time. For a more challenging game, arrange the names of nine keeners in a 3 x 3 grid. The winner is the person who first crosses off the names of three keeners in a horizontal, vertical or diagonal row. Some additional rules apply:

- You may not use your own name, nor may you repeat names on the same card.
- An extra point is awarded if you preselected the keeners in the order that they were keen.
- Double score if you can guess their first word, such as "Sir...Sir...", "Professor...", "But...", "Excuuuuse me...", or the always popular "You forgot...".
- Triple points if the professor spots the keener and refuses to acknowledge his presence.
- Quadruple points if the prof threatens the keener.
- You are not allowed to physically abuse a keener in order to affect the placement of his or her hand.
- Bribes are illegal.

Before you begin, you may want to have a look at a keener at close range. Pay a visit to the EngSoc office in Carl Pollock Hall. Happy hunting!

Prof Football

This classroom distraction comes to you from Wilfrid Laurier University where there is a rich football tradition. Perhaps we should modify the rules somewhat and call it Prof Rugby or Prof Basketball to honour our best teams, but then maybe this year will be the big year for the Warrior's Football Team...and maybe it will snow next July!

The only requirement of this game is that it be played in a lecture with a prof who paces. Before the lecture begins, divide the class into two teams. For example, use an aisle in the middle of the room as a dividing line. You must also mark two goal lines at the front of the class. Do this by placing a piece of tape or other marking on the blackboard or front wall about one or two metres in from either side wall. When the prof arrives and the lecture begins, you can start playing Prof Football.

The object is to score a touchdown which occurs when the prof crosses the goal line in front of your half of the class. The opposing team can try to prevent a touchdown from being scored by attempting to attract the prof to their half of the classroom, and then possibly scoring a touchdown themselves! The best way to attract the professor's attention is to raise your hand and ask a question. This requires some imagination because the question should be relevant and so must be thought up on the spur of the moment. Watch out though, because asking a lot of confusing questions could make you part of keener bingo game (see the article elsewhere in this issue).

It is best to play two 20 minute halves with a ten minute break at half time. This makes for a full 50 minute lecture of entertainment. So, go out there and win one for the gipper!

Tank Mathie

Keener beer, it's here
... smooth as a sine curve.

MastHead

Campus Housing

You already have a place to live in Waterloo, so why read this article, right? Well, next term, or the term after, you may decide that you would like to live elsewhere, such as the Village residences, or the co-op residences. Those two places are what this article is about.

The Facts: The University of Waterloo has a housing office that can be reached at 885-1211 extension 3704 (or better yet, just ask for the housing office). They can tell you all kinds of useful things, like residence rates, and where to find other housing-related information (such as off-campus housing, and out-of-town housing for co-ops going out on a work term).

The Waterloo Co-operative Residence Inc. can be contacted at 884-3670 during regular working hours. They are happy to tell you all about their rates, and where they are. (The main office is located in the complex on 280 Phillip Street, just between Columbia and King, right beside the University).

Both places allow you to just be there for one term (four months) at a time, but the Villages have you sign a two-term contract stating you will be back for a second term, either the next or the one following. (Exception: you do not have to return if you are living there for just a summer.)

Village 1 and Village 2 are both on campus. Village 1 is comprised mostly of single and interconnecting rooms, while Village 2 is almost entirely double rooms. Village 2 is usually filled with frosh (read "very noisy and wild"), while Village 1 is usually at most 50% frosh (this does not imply that Village 1 is quieter than Village 2, especially in the summer).

The current rates for the Villages are:

double room	$1595 per term
interconnecting room	$1655 per term
single room	$1715 per term

These rates include both food and board. They don't include the $25 refundable key deposit.

The co-op residence single rooms are smaller than Village singles, but it is also cheaper. The double rooms are about the same size as the Village 2 doubles. The large single rooms are just double rooms with one occupant. With these rooms, you are included in the residence meal plan. However (here is where the 'co-operative' part comes in) you have to do about 3 hours of work a week, called the "fag" (mopping floors, washing pans, Sunday cooking, any stuff that needs to be done–the students do it). This is part of the reason that co-op living is cheaper than Village living.

You can't usually get a single room in the co-op residences unless you have lived there for a couple of terms, or you are applying for the summer term.

The current rates for the co-op residence are:

Room type	Fall term	Winter term
1 bedroom	$290/month	$290/month
2 bedroom	$357/month	$357/month
single	$1495/term	$1427/term
double	$1333/term	$1234/term
large single	not available	$1508/term

The one- and two-bedroom rates are just for the apartments. Food is not included, but you can purchase their meal plan (you would have to phone them to get the latest prices, as it varies with the price of food.) To get into the apartments you either have to have lived in the co-op for 6 or more terms, or have a room-mate who has lived there for that length of time.

During the summer term the co-op rates are much less than the Village rates (which don't vary term-by-term with the demand). I am currently in a large single at the co-op residence, paying $1255 for the term, while a Village resident is paying $1715.

The rates given above for the co-op residence don't include a $75 performance (read damages/lost keys) deposit, plus a few other incidentals that add up to $20-$30.

Food: This is important. In the Village you have more choice, but in my opinion, the quality is, well, not like mom's at all. The food in co-op is generally better, but when it is bad, you don't have the option of eating tons of dessert like you do in the Village. In co-op, you can eat in your room, outside, or wherever you want. In the Village you either eat the meals you get in the cafeteria, you don't eat their meals, or you get fined for 'stealing'.

But don't take my word for this. Go there and look around for yourself. Talk to the people who live there and get their opinions. As for me, I'm going outside to lie in the sun. Bye!

Fred Walter (grwalter@watmath)

Off-Campus Housing

Now that you've been accepted into the Faculty of Mathematics at UW, you're probably going to need a place to stay. If you aren't staying in one of the residences, or if you are but think you might like to move off campus in a later term, then some of the following information may be useful to you.

The place to start looking is the Housing Administration Office on the roof of Village One. They have housing lists for Kitchener-Waterloo as well as for other large cities in Ontario for those going on a work term. These housing lists are specifically for students. The accommodation listed is inexpensive and usually no more than a 45 minute walk from campus. Additional rental listings can be found in the local paper, The Kitchener-Waterloo Record, and in a flyer called Read It'n'Rent. Check the bulletin boards in the Housing Office, the Campus Centre and the various buildings around campus for posters advertising houses, apartments and rooms for rent.

Very few students can afford a place to themselves, so one of the first realities you'll have to face is: roommates. Being off campus, you have some control over who you'll live with. You're going to have to show some respect for them, do your share of household chores (dishes! cooking! cleaning (yech)!), and be quiet when they need to study. If everyone works together, you can have a lot of fun learning to be self-sufficient. If you don't get along, four months can seem like forever.

Someone else you're going to have to get along with is *the landlord*. Some are very understanding of students needs and can be very obliging. Others can be downright difficult to please. Just remember, it's a seller's market, so you have to try to placate the landlord. However, if something goes wrong, consult the legal resources offices in the Campus Centre *Immediately*. [I can't stress this enough. I learned this the hard way. -Ed.] If you're polite to the landlord, and obey the rules, you should have no problems.

Some landlords may require that you sign a lease for a minimum of one year. Even if you are in the co-op program and will only be here for four months at a time, this can be advantageous. You can make arrangements with students who are off-stream to let them sublet your townhouse or apartment. This way, you can have the place for four months, then they stay there while you are on a work term, and then you have a place to come back to for your next school term. This will save you the trouble of having to look for a new home every term that you return to Waterloo.

The reasonable price range fluctuates with the housing market. The current price range, for a livable but not luxurious place, is $170 to $250 a month, depending on furnishings and location. Be sure and shop around before you take a place, but beware! Good deals can be snapped up fast!

Penguins, Inc.

Co-op

If you have registered in Waterloo's world-renowned Co-operative education program, then you may wonder what special procedures you'll be going through. If you're in 4-Stream, you'll go through the job placement process this term. If you're in 8-Stream, you wait until next term.

In case that snuck by you, allow me to explain. 4-Stream refers to the class of students who will be going on their first work-term in January 1987, and coming back for 1B in Summer '87. [It's not so bad here in the summer. Honest.] The rest of the class will stay at Waterloo in January for 1B, and take their work-terms in May 1987. The two classes aren't on campus together again until 4B, when 4-Stream does their double school term, in Winter 1991. There's a chart in the Undergrad Calendar which shows this graphically. (Certain options, like teaching, have special streaming. Check the calendar.)

The Co-op orientation sessions occur in the term before your first work term (1A for 4-Stream, 1B for 8-Stream). You will be taking a special course called *Math 000*, held once a week to provide you with all sorts of information on Co-op. Make sure you attend every session, as they are *very* important.

One of the first things Co-ordination (the people who run Co-op, who live at Needles Hall) will demand of you is a **resume**. This is a crucial step in getting a job. You *must* have thirty copies handed in on the due date, as they will *not* accept them late. Co-ordination will give you guidelines on writing a resume, but you have to put some work into it. The purpose of the resume is to sell **you** to the prospective employer. Without a good resume, you won't get interviews for the jobs you want.

Next come "the Want Ads", a listing of all the available jobs for the upcoming work term. Normally, you get these on a Friday, and your completed job selection form is due the next Monday. This is a terrifyingly short time for such a major task. You will be selecting up to fifteen jobs from the want ads, for which you would like an interview, and giving this list to co-ordination. As well, job listings which didn't reach Co-ordination in time to make the Want Ads are posted in Needles Hall as 'Late Postings'. You may sign up for these jobs as well (usually while standing five people deep in a narrow subhallway in Needles Hall, with a hundred other co-ops doing the same thing.)

After this comes the moment you've all been waiting for, *Interviews*. For a couple of weeks, which unavoidably conflict with mid-term exams, you will get to dress up and head over to Needles Hall for job interviews with potential employers. Every afternoon, you should go over to Needles Hall and check to see whether or not any of the employers you selected have granted you an interview. If they have, jot down time and place (usually in Needles Hall, almost all employers come here to see you!) and then research the company, so you can ask intelligent questions. The interview itself calls for formal dress (business best). It will run from five to twenty minutes. During the interview, you and the employer exchange information, and decide if you each like what the other has to offer. *Math 000* will tell you all about interview skills.

After interviews are over, you rank the interviews you had in terms of the desirability of the job (and how much you think the employer liked you.) Again, you get an appallingly brief time for this. Co-ordination puts the resulting forms into an arcane computer program, which matches your rankings with the employers' ranking of you. Math is doing very well right now, so most of you should get jobs. For those who don't get jobs, there are 'second round' interviews, when co-ordination tries to match up unplaced employers and co-ops. [My first job came through second rounds, and was quite good. These jobs are not necessarily cast-offs, many were just too late for first rounds - Editor.] By the time the work term starts, almost everybody will have a job.

Then it's off to work-term, in Toronto, Ottawa, Pinawa (Manitoba) or other exotic places. You *do* have to do real work, eight hours a day, but you can also have a lot of fun. Not only that, you get PAID, too! You also get to write an essay known as a work term report. *Math 000* will acquaint you with this custom.

Co-op is a fantastic educational opportunity, and a lot of fun. The two years worth of working experience you have upon graduation is of unmatched value in looking for a full-time job. Waterloo has the best co-op system running, and I wish you good luck for your part of it!

Stuart L. Hodgins

Co-op Contemplations

Co-operative education is a cornerstone of the University of Waterloo. When it started classes in 1957 the only program available was co-op engineering. (Yes, it is hard to admit, but the engineers were here first.) It gave students opportunities to gain valuable work experience while they were studying, to apply and reinforce classroom instruction, and to learn on the job things that were not part of the set curriculum and use that in later coursework. Now students in almost any academic program at Waterloo have the option of doing their program through the co-op system or the "regular" system.

If you have this choice (some don't; for example, engineering and architecture are strictly co-op), which do you choose? To choose wisely you should know the advantages and disadvantages of each.

One advantage of the co-op system has already been mentioned–that of gaining experience and knowledge and being able to apply it in both the working and academic worlds.

A second advantage to the co-op system is that it allows you to be financially self-sufficient. In most cases, you can live comfortably on work term earnings without government or parental assistance. [on both work and school terms - Ed.].

The co-op system provides you with a convenient four-month long break after an intensive academic term. This break is a great way to unwind and prepare for another four-month struggle.

The co-op system helps you to individualise your job skills. You will have a personal and unique set of skills and abilities upon graduation, different from any of your classmates. Further, the synthesis of work term knowledge in class makes for lively discussions, which often teach the professor as well as the student.

There is less course continuity for co-op students. Just as you are mastering 2A calculus, you'll be sent off on a work term that likely won't require or encourage you to use that knowledge. Then you come back to face 2B calculus, by which time you may have forgotten the first half of the course.

The added cost of co-op programs at Waterloo can make a significant difference between the co-op and regular systems. The $195 per term co-op fee is the University's administrative fee for the co-op system. (It is tax-deductible, and is treated just as tuition. The problem with the fee is that it will continue to go up as the University tries to recover more of the overhead cost of running co-op programs.)

Co-op students (generally, but not always) move every four months. This takes a lot of time and costs real money. It can also lead to a rootless or alienated feeling. That can be alleviated through strong friendships within your stream, but it is an unavoidable element of co-op life.

So, what does the regular system of study have to offer? Well, not moving every four months is a distinct advantage. You can lease an apartment for a year and sublet it for the summer. [You can put roots down in the community, because you can stay a while - Ed.]

There is no co-op fee to contend with. Thus, budgets can be smaller (though tighter).

Finally, most degree programs take one less year when done through the regular system than through the co-op system. For some people this year is an important thing to consider.

The main problem with the regular system of study is that immediately after one four-month term of intense work and play, you have to come back for a second one. The feeling of burn-out runs dangerously high around mid-February of every year for regular students, and for Stream 4 co-op students in fourth year as well.

The regular system may also let you miss the "real world" experiences of co-op, such as leasing an apartment, having business meetings, and so on. Some of this missed experience can be obtained through internship programs (offered at other universities) or good summer jobs, depending on where and how hard you look.

These are some issues to consider when presented with a choice of regular or co-op. The choice depends on personal concerns, goals and desires. Remember that there is nothing intrinsically "right" or "wrong" about either system of study, and it makes no difference in what you learn at Waterloo. It is what you make of your elective courses, your opportunities for work (during summers, work terms, part-time, and so on), your spare time, and your own goals, ideals and plans that add value to the degree you are working toward, not the presence of the words "Co-operative program" on the diploma.

W. Jim Jordan

Prof Quotes

For the past few months **mathNEWS** has been receiving a steady stream of little pieces of paper or photocopies of notes containing little pearls of off-the-cuff humour (intentional and otherwise) which professors and instructors have made during their lectures. We print the best of them in our regular issues, with the intent of showing that profs can be funny, too. If you hear an amusing comment in a lecture setting (it doesn't matter what course it is), write it down and drop it in our **Black Box** across from the C&D on the third floor.

Here's a sample from the past year's issues of **mathNEWS**:

"We take this weird thing, with peculiar properties, and we call it normal."

Keith A. Rowe, Math 234A

"Degeneracy does not have to be a bad thing."

Bill R. Pulleyblank, C&O 350

"If you add a number of trivial statements together, you get a theorem"

Francis C. Y. Tang, Math 234B

"Ignore the fact that you can't read this. I don't care."

Erich Fraga, CS 337

"If you feel cheated by me stopping early, you can stay for a few minutes and watch me erase the boards."

Chris Springer, ACTSC 221

"Since we're near the end of the proof, it's OK if I mess this up."

Angus Kerr-Lawson, Math 130B

"$\frac{1}{k!}$ leaves $\frac{1}{k^2}$ behind in a trail of smoke after two or three seconds."

John Baker, Math 130B

" 'Strong typing' does not mean pounding the keyboard."

Kelly Booth, CS 140

"There's no point in lecturing this material if it doesn't make any sense."

C. Small, Stat 333

"It takes longer to state it than to prove it. This is very common in advanced mathematics."

G. Thompson, Math 240A

"It doesn't matter; the point of it is that it doesn't make any sense."

Dave Easton, Math 130B

"Learning is not fun. I don't want to promote that idea."

Ian "Stud" McGee, Math 130B

"The good ones never get into **mathNEWS**."

Ross Honsberger, C&O 380

The Hierarchy of Life

The Natural Log
The Pink Tie
mathNEWS
FASS
MathSoc
Chocolate Doughnuts and Earl Grey Tea
Opus
Math Frosh
Coke Classic
Club 750 (Fed Hall)
Hot Pepper Pizza
The Princess Cinema
The Warriors Band
π
Cinema Gratis
Aerobie
Ferris Bueller
WKRP
CKMS
Pizza
Popcorn
Green Men (Janitors)
Water Pistols
Canadian Beer
Floppy Things
Artsies
8:30 Classes
n
Campus Sculptures
Syntax Erors
The Billy Building
American Beer
CHYM
New Coke
Village "Food"
Imprint
Engineers
ξ
Engsoc
The Ridgid Tool
Hierarchies of Things

The Pink Tie lives on!
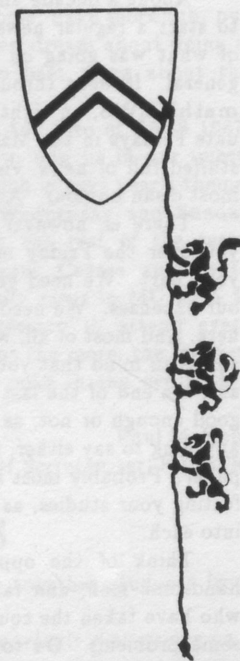
Money!!!

How much will I need?? Well, you should be prepared for the following items for a four-month term:

• Housing expense: $750 to $1000.
• Utilities costs: If not included in housing. (Find out now!!)
• Telephone bills: These can be excessive. Be careful, long distance charges can mount up fast.
• Food: $350 for basics should get you through the term.
• Entertainment: This is a matter of personal taste. Again, caution is in order. This can skyrocket without you noticing.
• Text books: $150 to $200 per term. Price has no apparent relationship to size.
• Transportation: $100 if you'll be using Kitchener Chancit. Look into the four-month pass at the Fed office. Budget more for trips home.
• Co-op costs: resume preparation, dress clothes if you haven't got them.
• Incidental course fees: Take some money to class, you may have to shell out for supplementary notes.

What is mathNEWS?

Long, long ago in a land far, far away, two cavemen made the long trek to Waterloo and started two newspapers, Iron Warrior and Enginews. A civilisation of highly advanced extraterrestrial geniuses took pity on the lack of intelligent life on this planet and sent out an expedition to this remote area bringing along wondrous gifts, including such things as the UNIX, the mysteries of the Break and CS statues, several of their most brilliant who stayed on to become our math professors, and most important, the Pink Tie and **mathNEWS**.

They gave **mathNEWS** to the students. After a few centuries of development, it eventually linked with another gift from the stars, the UNIX. Linking as well with the inducer of great intelligence, the Pink Tie, the paper shines forth with full brilliance to educate the inhabitants of this primitive planet. {The editor is shaking his head and saying that no one would believe that, except maybe an artsie.}

Second Attempt:

Who knows?

{The editor says that I should try it yet again.}

Third Attempt:

About a decade and a half ago, a group of mathies decided to try to start a regular newspaper for other mathies which informed them of what was going on in the Math Faculty and in the University in general. It went through several formats and titles before it became **mathNEWS**, an eight to fourteen page publication distributed alternate Fridays in the Math and Computer building free of charge. It is stuffed full of news, views, general information, reviews and good, almost clean humour. And best of all, it is all yours.

There is, however, a catch. If you want **mathNEWS** to help you over the Friday morning hump, it takes a bit of investment on your part. We need you to pay your Society fees, part of which pay our expenses. We need to know what you think of what we are doing here. And most of all, we need you to help us by writing anything that comes to mind that you think we should have between our front cover and the end of the last page. Don't worry whether you think you are good enough or not, as none of us are. Don't worry if you don't have anything to say either, as none of us did until we got working with the paper. Probably most important, don't worry about this adversely affecting your studies, as it is totally up to you how much time you put into each.

Think of the opportunities! You can meet beautiful women, handsome men, and fancy coat racks. You can get to know people who have taken the courses you are now taking and can help you with some problems. On top of it all, you can help eat up (literally) our pizza budget on production nights. And if that weren't enough, if you come to production night (dates and times are posted in the third floor lobby of the Math building and outside MC3036), you get to read the paper as it is being put together.

What are you waiting for? Come on out and see us at the organisational meeting or ask the MathSoc secretary to refer you to a **mathNEWS**-type person who will welcome you with open arms. It's one of the few fun things to do that is still legal!

Scooter

THIS ASSIGNMENT WILL BE VERY SAFE AND LOTS OF FUN FOR ALL OF YOU.

THERE IS NOTHING WRONG WITH YOUR EQUIPMENT. YOU WILL STOP GLOWING SHORTLY.

The Math Society Office

MathSoc

That's a name you'll be hearing frequently around here; it actually stands for the Mathematics Undergraduate (that's you) Society.

The Math Society represents math students to faculty, administration and other programs. Representatives from all years also have a vote in planning social and fund-raising events, and deciding how your $5 will be spent.

Among other things, your money is used for **mathNEWS**, Orientation, the Grad Committee (for those of us who finally see a light at the end of the tunnel), the Computer Science Club, the Applied Math Club, and all sorts of useful services in the MathSoc office.

The office at MC (Math and Computer Building) 3038, is found at the SouthEast corner of the 3rd floor (the hallway by the men's washroom by the lounges). Aside from a part-time secretary, the office is staffed by volunteers (like you - we always need more office workers), and is open most weekdays.

Services offered by the MathSoc office include:
- a photocopier (5 cents a copy)
- an old exam/midterm file
- sales of math T-shirts, rulers, buttons, pink ties, etc.
- change for the photocopier, vending machines, etc.
- staplers, 3-hole punch, tape, pencil sharpener, paper cutter, and other such useful tools.
- course calendars and "anti-cals" (professor/course evaluations - what the calendar doesn't tell you!)
- games (cards, cribbage boards, Monopoly)
- first-aid kit
- Lost and Found (valuable items go to Security)
- assorted publications, including Federation of Students and Administration info.
- telephone, typewriter, computer terminal, if they're not needed by office staff

British Petroleum

The Tutorial Centre

The Tutorial Centre is located in MC3032 and is one place students in first and second year can go to seek help solving problems assigned by their professors or with course material with which they are having difficulty. This assistance is provided by students in second, third or fourth year on a one-to-one basis.

Two types of tutorials are operated in the centre. One of these is the closed tutorial. Each student in first year is scheduled in a closed tutorial for Math 130 and for Math 134. The student's professor and two tutors will be in the room at this time to answer questions about the particular course and assignment problems. The second type is the open tutorial. At these times students may come in and ask questions about any of the following : Math 130 A/B, Math 134 A/B, Math 230 A/B, Math 234 A/B or Statistics 230/231. There will be two or three tutors on hand to help.

The student will also find solutions to completed problem sets for some subjects posted in or near the tutorial centre.

University Calendars

Even if you've already lifted one from your high school, you're entitled to your very own copy of the University Undergraduate Calendar. It's the big, thick, red, black and yellow book that contains all the faculty and course information. You need to have a copy of this, because the rules established in it are the ones that will govern you until you graduate. Even if the rules change later, you are still protected by whatever was is in effect now. To get one, troop over to the second floor of Needles Hall (watch out for the stairs !!) and present your student ID at the Registrar's office. Get 'em while they last!

Join the Warriors Band

(Why? Is it coming apart?)

For Twenty years the University of Waterloo Warriors Band has provided a musical safety valve for the UW community. The group's primary purpose is to promote a healthy spirit at University of Waterloo athletic events. What that means is that we play at all UW football and basketball games (and many other athletic encounters) in an often successful attempt to suggest that beating the other team would be a good idea.

Yes, we're a group of athletic supporters. But we're more than that.

The Band occupies an interesting niche in the campus musical spectrum, falling somewhere between the UW concert band and the Laurel Creek Ducks. It's also a great social organisation, where fun is valued above all else, except maybe the Bass Drum and our mascot, Bob the Duck. Although we encourage musical talent in the Warriors Band, it is by no means essential; neither is owning an instrument. The Band has, through the years, (and by various methods) acquired an interesting assortment of once-proud band instruments. These are available for loan to enthusiastic, but hornless, members. Rehearsals, as we like to call them, are held every Thursday in the classrooms near PAC 1081. We actually DO use music, and we play a wide variety of tunes: from Elgar to Elton John, from Largo to Allegro molto con brio. But we usually don't let musical quality get in the way of having a good time.

Not that we don't present quality material, mind you. A few years ago the Band was named as the Official Band of the Canadian Olympic Basketball Team, in recognition of its contributions at a number of international basketball games.

Yes, really. We learned the national anthems of West Germany, Israel and Korea last year.

And they even RECOGNISED them!

As well, we have followed the UW basketball Warriors to Halifax for the Canadian championship tournament, where we delighted the fans with renditions of classics like "Tuxedo Junction", "Ghostbusters", "Hawaii Five-O" and that old favourite, "Waterloo, Waterloo".

We are often called upon by the University to lend an appropriate festive air to building openings, sod turnings and computer shutdowns. We also represent UW in various municipal events: "Here Comes Peter Cottontail" has become a standard at the Santa Claus Parade.

The band was founded in 1966 by Dr. Dave Greenberg, who also managed to get UW to give him a Ph.D. in Applied Math. Over the years a large number of talented musicians have left their marks on this group, (but they're healing very nicely, thank you...) and, as a result, we are now a vital part of the University Community.

And certainly a lot better than the Western Band.

If you'd like to become a part of this proud musical tradition, simply show up ready to play at any Warrior football game, or come to a practice at 5:45 Thursdays in the PAC (Rm 1081). Watch, too, for our information booth in the Campus Center during Club Information Days. Drop in and meet the current leader, Chief Centurion Rick Yazwinski. Or you can give me, Steve Hayman, a call at 749-1707.

The Warriors Band.

It's been called "One of the Bands in Canada".

Come out and find out why.

What is OSAP?

OSAP stands for the Ontario Student Assistance Program. [Sometimes called the Ontario Stereo Acquisition Program.] Students may be able to obtain loans or grants from the program to help finance their education. For more information contact the Registrar's Office at Needles Hall when you arrive on campus, and/or pick up the OSAP application forms. Warning ... don't falsify any of the information, as this could get you in *serious* trouble.

FASS 1987

Waterloo Looks at Itself and Laughs

How many times have you thought of the perfect thing to say, the ideal retort, only to find that the topic of conversation has changed and nobody understands your joke? One of the beauties of writing is that you can condense all that thinking time into neat contiguous conversation, so that what may have taken ages to conceive and hone comes across as smooth, facile, and funny. And one of the beauties of writing for FASS is that you'll be surrounded by other people just like you.

For those of you who have never been on campus during the month of February (you remember February: nasty weather, much the same as now), FASS is a social group which gets together to have a lot of fun and, coincidentally, produce one of the freshest, most locally-oriented musical comedies you've ever seen. (When was the last time Second City made a joke about the Kent Hotel? Or sang about the joys of a Liberal Arts Degree?)

What makes it so fresh, so funny, so fully-packed? Why, the people, of course! FASS is made up of Faculty, Administration, Staff and Students (ten points to those who now know what FASS is an acronym for), who like to have fun, meet new people, have more fun, put on a great show, have even more fun, and then dream about doing it all again next year. And do you know the best thing about the members of FASS? It's easy to become one!

Right now we are getting ready to start Act Two of FASS 1987, our twenty-fifth show, and we need writers to join us in our quest: writing a show about "Putting on a Show" which is next year's theme. Regular writing sessions will be held every Wednesday and Sunday evening (with the exception of holidays) for the rest of the term. Check out our bulletin boards in the Campus Centre and South Campus Hall for places and times. (We usually meet in MC 5045 at 7:00 but, hey!, we're creative.) It isn't necessary to attend every meeting (that's the Chief Scriptwriter's job) but the more, the merrier.

So come on out. It's more fun than a poke in the eye with a sharp schtick.

Paul McKone
Chief Scriptwriter, FASS '87

THEMAS

THEMAS is a club which tries to bring together students from different faculties and different backgrounds.

Mostly what THEMAS does is to organise weekly discussions on a wide variety of topics, and give its members a chance to socialise and meet other people with diverse interests.

The activities of THEMAS are wide-ranging and open-ended. Among the events they've organised over the last three terms are an electronic concert, a slide show of computer graphics art, and a series of exciting outings that have taken THEMAS members throughout the KW area and beyond.

They are always on the lookout for interesting new ideas; all members are encouraged to contribute suggestions for what the club should do next.

The name THEMAS wasn't originally intended to be an acronym, but it's been pointed out that it could stand for "Together - Health, Engineering, Math, Arts and Science" (That's not to say Optometry students aren't welcome, too!). It's also a reference to Douglas Hofstadter's book, "Metamagical Themas", which deals with some topics that the group has discussed.

THEMAS is open to everyone. You don't have to have a high IQ, and you don't have to read any particular books (though book reviewing is one of the things THEMAS gets involved in). All you need is an interest in discussing things with other people.

If you'd like to get involved in THEMAS, or even just sit in on one of the meetings, check the Imprint for meeting notices, or inquire at the Turnkey desk in the Campus Centre.

What's a CSC?
(other than a trig function)

At Waterloo CSC means the Computer Science Club, the campus student chapter of the Association for Computing Machinery. The CSC tries to make life and work with computers easier and more enjoyable by technical and non-technical people alike. One way this is done by running a free consulting and referral service. If the office is open, pop in and ask your question; if someone's feeling weird you'll get a wise-crack answer, and then someone will try to give you a serious answer, or send you to someone who can. The CSC also offers tutorials on unfamiliar systems ('Bun (Honeywell) and VAX Unix/Ultrix), a small reference library and just a place to drop in, sit down, have a cup of tea and enjoy a quiet conversation.

The CSC also organises meetings, open to the University and community at large, where guest speakers from the world of computing give short talks on their field of interest. For example, Brian Kernighan spoke on "Little Languages" here in April. Other speakers come from the business and academic worlds to speak on aspects of computing related to their work.

If you are interested in working with computers as more than a user, the CSC can provide help in getting you involved with research projects around the University. This experience cannot be gained entirely from courses and work term jobs.

You can join the CSC by dropping in to the office (MC 3037, right across the hall from MathSoc) saying, "I'd like to buy a membership," and handing a dollar to the most official-looking person in the room and persuading him or her to give you a little blue wallet-sized membership card.

Watch for posters announcing CSC meetings, events and field trips. Drop in, introduce yourself (many members aren't in CS, so you shouldn't feel intimidated), peruse the library and check us out.

Survival Kit

Here are a few things that you may wish to bring with you when you come to Waterloo. Besides the essential stereo systems or ghetto blasters, or a frisbee and a water pistol (especially if you live in one of the villages), you may find some or all of the following items useful. Remember, in most cases, it's a long way back home!

Official Papers
- registration & fee statement
- financial items, bank passbook, chequebook, convenience card, charge cards
- parking stickers, PAC cards, Health Insurance card
- ID, driver's licence (if you have one)

Stationery
- notepaper (lots of it, for those endless assignments and class notes)
- pens, pencils, erasers, rulers
- binders
- scientific pocket calculator (occasionally useful during final exams)

Miscellaneous
- towels, extra sheets, blankets and pillows
- clothing and hangers
- winter clothing (lest we forget the change of season)
- umbrella, K-way, etc. to keep you safe from typical *Waterloo* days
- small kettle, cups, dishes, cutlery (to accommodate caffeine & pizza fits – for long assignment nights)
- alarm clock (with snooze bar – for those 8:30 classes)
- toiletry items incl. soap, toothpaste, toothbrush, toilet paper
- laundry and dish detergent
- quarters (for video games and possibly laundry)
- sewing kit
- bike

The Pink Tie ♂

Waterloo has led the world (or at least Canada) in many things. Now we can boast leading the fashion world, too. Many people have taken to wearing pink ties as part of their everyday attire. Many people don't know that Waterloo started this fashion trend. You see, the Pink Tie was the official mascot of the University of Waterloo Mathematics Society.

How did Waterloo manage to start this trend? Well, as the story goes (passed down from grads to frosh over the decades), there once was a particular professor of mathematics who loved to wear outlandish gaudily-coloured ties. One of these ties was mostly pink with strange lines on it. This particular professor also happened to be the founding dean of the fledgling Faculty of Mathematics, lending some importance to his attire.

Mathematics students, being the unconventional bunch they usually are (and I hope you are no different), seized the wonderful opportunity for being completely irreverent but non-destructive and chose a tie as their official symbol, and pink as its official colour.

The original Pink Tie is on display on the fifth floor of the Math and Computer building in a display case outside the Math Undergraduate Office.

During the construction of the Mathematics and Computer building in November 1967, some of the aforementioned math students decided that the new building was a monstrosity and could use some decoration. (Some people still say that. Maybe that's why they're putting up the Billding–to do MC right.) Late one Sunday night a few weeks later, a handful of brave mathies found their way on to the roof of the brand new building. On Monday morning the campus awoke to see an 85-foot Pink Tie hanging from the spot where the students were the night before.

MathSoc adopted the tie, and inherited the dry-cleaning bills, until the tie was stolen for a final time and irreversibly desecrated by heathen engineering students.

Now the Pink Tie is a symbol of the Faculty of Mathematics and the Math Orientation Committee. **mathNEWS** has also adopted the Pink Tie as the symbol of all things good and mathematic. (Someone decided that a pink tie was not good enough for the Mathematics Society and named the Natural Log as the official mathscot.) As the legend of the Pink Tie lives on, it is commemorated in the fashionable item of clothing you wear as a Waterloo Math frosh. Wear the Pink Tie with pride.

dwarf

The Applied Math Club

The Applied Math Club was founded in 1985, making it one of the newest clubs on campus. You can obtain a membership by paying a one time charge of 50c - one of the best bargains on campus! For this nominal fee, you receive both a membership card and an 'Applied Magic' button (as well as free coffee, tea and doughnuts at seminars.)

The club has an office which is located on the fifth floor. There you can obtain information on Applied Math jobs in industry, and graduate programs in AM. You can also take the opportunity to read some of the current mathematical periodicals which are kept there. The AM Club also sponsors undergraduate seminars (past topics have included Magnetic Resonance Imaging, Fluid Dynamics, and Compact Discs), and information sessions to answer your questions about post graduate studies, and the AM related job market.

By the way, everyone is welcome (you don't have to be in AM to join.) So, if you want to be a part of one of the most interesting and dynamic groups on campus, come up to room 5168 and visit.

MED

Coarse Selections

Sleeping Accommodations for Mathies

The following course descriptions have been assembled by math-NEWS staffers to balance and augment the UW calendar descriptions. Take 'em with a grain of salt.

ACC 101: Accounting for accountants, this course can be pretty hard. If you haven't had high school accounting, find someone who has to help you. If you have, you'll still have to work for this one.

ACC 121/122: 121 requires little effort, unless you've taken accounting before, in which case it takes no effort at all. 122 does teach a few new concepts, and requires a bit of work. These are the non-specialist counterparts to ACC 101, and provide a general overview (these are called 'survey courses').

BUS 111/121: Taught at WLU, these courses teach you the basics about the business world (and the stock market!) Business courses are WLU's specialty, and these two are always well taught.

CHEM 123: Introductory Chemistry. Follows from Grade 13 concepts. Might get a bit nasty towards the end of the term, but it can't hurt. You can also take an optional quarter-credit lab with this course.

CHEM 124: This is an introductory course in organic chemistry. It is demanding and requires a lot of memorisation, but is quite interesting. There is also an optional quarter credit lab for this course.

CS 140: The aim of CS 140 is to develop good programming skills and problem solving techniques. The concentration is on developing algorithms in pseudo-code to solve mathematical problems. The M0 section of this course uses FORTRAN and the M1 section uses Pascal, for those already familiar with FORTRAN. The assignments, exams, and textbooks are virtually identical for each section.

CS 180: This course teaches record and file processing, and helps you to be useful in a business environment as you modify programs to work properly. The catch is that you will be using COBOL. This course is not required, but the faculty likes you to take it. (It does help in getting first work term employment in many companies.)

ECON 101/102: Slightly dry (unless Larry Smith teaches) but beneficial. Provides all the economics a non-major will ever need.

FR 192A/B: These courses are taught entirely in French and build upon Grade 13 oral, reading, and writing skills. They consist of three hours of lectures, a one hour conversation class and a one hour listening lab per week. If you are taking these courses, you must write the French Placement Test on September 4.

MATH 130 A/B: Better known as Calculus. You'll learn about derivatives evaluation of integrals, differential equations and sequences of real numbers. If you can find one, a set of course notes by Professor Wainwright can be extremely useful (It may even be one of the recommended texts).

MATH 134 A/B: These are the first year algebra courses. In MATH 134 A you will learn classical algebra, a topic that began in ancient Greece. MATH 134 B follows from the Grade 13 material on matrix algebra.

MTHEL 100: An ornithological monstrosity (i.e. bird course) as the instructor will tell you in the first class. The course deals mostly with contract law but also gives some instruction in the laws of tort and the structure of courts. A great deal of memorising is required to obtain a good mark in the course. There are no theorems, no proofs, just facts to know.

MUSIC 100: Introduction to Music. This is a music appreciation course so you get to listen to a lot of music. Practice quizes help with the course studying. You may even get to do concert reviews, too. Recommended.

MUSIC 125: Not necessarily easy to ace, but very, very difficult to fail (or even get a low mark). Talk about videos, see videos. Could even be interesting if you take it seriously.

MUSIC 150: Survey of western music from 10th to 18th century. If you don't have a good memory for music, forget it. Music major level music history (but still interesting).

MUSIC 250: Music theory up to dominant 7th Chords. Not for those not musically inclined. Really easy for those who are.

PHIL 140: Introduction to Formal Logic. It's not so much Philosophy as Introductory Boolean Algebra. Generally easy for Mathies.

PHIL 145: Critical Thinking. This course teaches you how to analyze simple arguments for logical fallacies. It is interesting and not too difficult.

PHYS 121/122: These are the introductory physics courses that all physics students are required to take. Many math students intending to take applied mathematics or computer science with electrical engineering electives will also find these courses beneficial. The topics follow from Grade 13 physics but you will probably find these courses more difficult. Two optional quarter credit labs are offered.

SCI 205: The infamous 'Sci-Fi-Hi-Fi' course that teaches concepts about stereo systems. Multiple guess midterms and exams. Should boost your average, so save it for a later, difficult term.

MATT THE MATHIE

BIOL 111 F 2C 0.5 Introductory Biology 1

DOESN'T LOOK TOO BAD... NO LABS...

I WAS ALWAYS GOOD WITH A SCALPEL... EVOLUTION WAS FUN. QUITE INTRIGUING... SO MANY THEORIES.

...I, OF COURSE, ALWAYS TOOK THE LOGICAL POINT OF VIEW ABOUT IT...

IF GOD DIDN'T BELIEVE IN EVOLUTION, WHY WOULD HE HAVE CREATED DARWIN?

THAT WAS NOT CALLED FOR!

Next Week: MATT FLUNKS PHIL 140!

The Meaning of Life

The University of Waterloo is such a self-contained community that sometimes students (and not just frosh) start classes in September and wake up two months later to find that they haven't strayed off campus once. We at **mathNEWS** want to remedy that in advance, because whether you hail from a small town or from Hogtown, the "Twin Cities" have something to offer. (What's that? The Chamber of Commerce phoned to say my cheque's in the mail?)

Listening The easist radio station to get is CKMS 94.5, the campus radio station. Its programming caters to various minority groups ('West Indian Hour', 'Gay News and Views', 'Leaping Lesbians', etc.) and includes programs for more specific tastes (jazz, rock, classical, reggae, etc.). Watch for the monthly CKMS program guide, sometimes found on the information table in the Campus Centre. Other FM radio stations include CKGL 96.7 (country & western), CFCA 105.3 (easy listening) and CKLA 106. On the AM dial you have the ever-popular 570 CHYM, CFTJ 960 (top 40), and CKKW 1090 (top 40 & older rock).

Reading K-W has two newspapers, the Waterloo Chronicle and the K-W Record. The weekly Chronicle is much like any other small-town newspaper, reporting local news and views, while the daily Record has more national and provincial as well as local news. Both papers afford us a glimpse of what the outside community thinks of the students at UW and Wilfrid Laurier ("the high school down the street"). Read the Record's Thursday entertainment section for reviews, movie and TV listings, and news of upcoming concerts at Kitchener's excellent hall, the Centre in the Square.

Eating Tired of residence food (or your own cooking) already? Realising that man cannot live on C+D alone? The nearest off-campus eateries are McGuiness Landing and the Wah-Ming in the University Plaza. McGuiness serves good standard grub (eg. wings, pasta, potato skins, good salads), while the Wah-Ming serves mild Szechuan fare downed with oodles of steamed rice and Chinese tea. Downtown in Waterloo we have Angie's Kitchen on Erb Street (cheap food at reasonable prices), the Duke of Wellington in the Atrium on Erb (good food at expensive prices), the Ali Baba Steak House, and Shin-shin's, arguably the best Oriental restaurant around. For alternative menus and ulterior prices go to Marbles (on William off King) or Aphorisms (north on King); for pub grub and Chocolate Cheesecake go to the Olde English Parlour at King and Bridgeport. Also for the sweet of tooth are Smitty's at Westmount (pancake breakfasts) and Cafe Mozart across from Waterloo Square (coffee and exquisite German pastry).

Watching If you tire of Fed Flicks every weekend in AL 116, or can't find a seat on Wednesday nights at Cinema Gratis in the Campus Centre, don't despair. Waterloo has one large theatre (the Town Cinema) and Kitchener boasts three big ones (the Odeon, Lyric and Capitol) and Cineplex, all on King Street. (I forgot to mention the Hyland on Ontario St., where I saw such memorables as Amadeus, 1984 and Brazil, in Dolby stereo yet.) Chances are there is something playing you haven't seen.

The best thing to happen movie-wise in the last year has been the Princess Cinema. This small repertory cinema, tucked in behind the Kent Hotel in Waterloo, has something for everyone: horror classics, comedy, art films, cult films, avant-garde films, and the kind of films that you heard a lot about when they came out a few years ago but which you never got a chance to see. Admission is $3.75 or $2.75 for members; watch for their flyers, often available at the CC.

Doing While you're at that information table in the CC, turn around and look at the map of Waterloo and the surrounding countryside. You'll find cycling and hiking routes taking you to nearby "picturesque" places like St. Jacob's, Petersburg, Elora, Elora Gorge (it's gorgeous), Heidelburg, Wellesley, St. Agatha, and many more. The UW Outer's Club usually organises cycling tours, hikes, camping and ski trips, and for those of you with more insurance than I there is also a Skydiving Club.

While you're up early Saturday morning to go cycling, why not stop at the Market? If you follow Weber Street north out of the city you can buy fresh produce from rustic people (or is it rustic produce from fresh people?) at the Waterloo Farmer's Market. The Kitchener Farmer's Market, downtown at King & Scott St., is more of a tourist trap, but still has lots of meat, cheese, bread and crafts for your delectation. Either way, get there early to avoid the crowds.

If you're downtown on a sunny day you can get a flavour of old Kitchener (ie. Berlin) by walking north on Queen St. and seeing the beautiful old houses on such side streets as Ahrens and Margaret Avenue. A word on directions, however: Kitchenerites think King St. runs west toward Waterloo, while Waterlooers think it runs south toward Kitchener; the two main streets, King and Weber, are parallel but meet three times; the shortest distance between two points is usually a curve.

If you're a classical music lover, be sure to pick up brochures for the KW Symphony Orchestra, the KW Chamber Music Society, and watch for concerts at Centre in the Square, on campus at the Theatre of the Arts, at Conrad Grebel College (the music school), at Laurier (the better music school) and at the Seagram Museum on Erb. If polka music is more your style, I needn't tell you about Oktoberfest, a stein-toting beer-guzzling bird-dancing bus-riding song-singing ein-prositing beauty-pageant-parading Bavarian-in-origin-but-successfully-transplanted-into-Canada week-long festival early in (you guessed it) October. Be sure to get you tickets at MathSoc early to avoid disappointment.

The above is only a smattering of the things to see and do around K-W. Since most of you will be around here for four or five years (modulo work terms) the place is well worth exploring!

Waterloo, Waterloo

Alternate School Song

[This nifty little number comes to us courtesy of Steve Hayman (lyricist) and the Warriors Band. Learn it (not too tough), it's fun to sing along!]

Waterloo, Waterloo
Dum dum dum da dummmmmm
Waterloo, Waterloo
Dum dum dum da dummmmm
We dum da dum dum deeeee
and dum da dum dum daaaaah
Waterloo
Waterloo
Waterloo

Laurier, Laurier
pfffft to Laurier
U of T, U of T
pffft to U of T
We pfffft to Brock and Guelph
and pffft to York and Mac...
Western U
Windsor tooo
pfffft to you....

Tune - "Denis Moore"

ALL FROSH *STOP* HERE

WHY?   In order to ATTEND ANY EVENTS you must REGISTER

(pay $20 for Frosh Package)

WHERE?   MATH LOUNGE (3rd floor Math & Computer Building).

WHEN?   Tuesday Sept 2nd, 9am – 12:30pm.

Here you will meet your BIG BROTHER & SISTER (BB&BS)

(Look for them on the PICTURE BOARD.)

They will look after you and the half dozen other Frosh

in your Family, starting with the MMT after Registration.

Your PINK TIE (Frosh Pckg) is your TICKET to ALL EVENTS.

(Yes, there's another reason, besides pride, to wear it.)

Handicapped? Need help getting around?

Call David Charleson at (416) 299-5332.

He's expecting to hear from you.

Bring your lock. Lockers are available for the week

in the Math & Computer Building (M&C), 3rd floor.

Orientation Director's Message

So you've been accepted by the Math Faculty of Waterloo ... very impressive, Congratulations! Now, you may be wondering what we're like down here. Are we shy, conservative, conventional and reserved? Will you fit into our Friday gathering where we sit around to discuss and prove our favourite theorems? Forget it!! You are about to be embraced by a group of party-hardy people who will make your life worth living again!! The Faculty's responsibility is to introduce you to academic life and the M & C (Math and Computer building). But the dirty job of keeping your social life together is all up to us. Who are we anyway? We are MathSoc (Mathematics Society). You see that line on your tuition statement for student society fee? That's us, and if you've paid then you're part of MathSoc too!

Over one hundred mathies have courageously volunteered their time to organise and run a week of events for all you frosh. In order for you to get to know us and everyone else, you've been grouped into "families", each of which is headed by a volunteer Big Brother and Big Sister. These two are upper-year students who'll ensure you don't get lost in the crowd. Throughout the week they'll be helping you get adjusted to life at UW and hopefully this friendship will last all term and beyond. After they help you survive frosh week perhaps they'll help with course selections and tell you where the best eats are. In this issue of **mathNEWS** you'll find adverts for all the different events we have planned, so I'll let them speak for themselves. We'll also be giving away billions and billions of prizes during the week.

I know what you're thinking. You're shouting "How do I get involved?", "Where do I sign up?". Easy, just come up to the third floor of the M & C during the Registration Centre hours. This is where, for a minimal fee, you can purchase your indispensible Frosh Package. Contained in this package is the infamous Official Math Pink Tie which is your ticket to ALL Math orientation events. You MUST wear it all week. And when you're picking up your tie you can meet your Big Bro and Big Sis while enjoying free coffee and doughnuts. Your Big Siblings will be easy to spot as all committee members are wearing BRIGHT PINK shirts with their names on them. And if that doesn't help you then just check the picture board at the Registration Centre and you'll know who you're looking for.

IMPORTANT -- *Buy your tie BEFORE the MAGICAL MYSTERY TOUR.* Any Mathie who has ever attended this event will tell you "It's AMAZING." So be ready.

Will all this end on Sunday? Come On! MathSoc sponsors events all throughout the term. Expect to see Pubs, Road Trips, Mathie paraphernaila and, of course, the spectacular Math Wine and Cheese (Pretty in Pink III). Bonus - wearing your Pink Tie gets you discounts throughout the duration of your sentence here.

Math Orientation '86 --   See ya there
                            Lisa Seabrooke
                            Co-Chairman of Math Orientation '86

DETACH HERE. WRITE NAME ON TICKET. BRING WITH YOU ON TUESDAY

MATHSOC ORIENTATION PRESENTS

FUN IN THE SUN '86

?? MAGICAL MYSTERY TOUR ??

RAIN OR SHINE

TUESDAY SEPTEMBER 2, 1986

FREE BUS 12:30 OUTSIDE MATH BUILDING

LATE DEPARTURE 1:30

SUBJECT TO CONDITION YOU HAVE A GREAT TIME

REFRESHMENTS AND FOOD INCLUDED

MMT
event code
GEN
ADM
gate/aisle
PARTY
sec/box
HUMA 1
GEN
row
A60115
ADM
column

EN ADM
gate/aisle
GALA EVENT OF WEEK
sec/box   row

ADULT
admission
FREE

BASS
NO REFUNDS NO EXCHANGES

Tues Sept 2, 12:30 ... *THE MAGICAL MYSTERY TOUR*

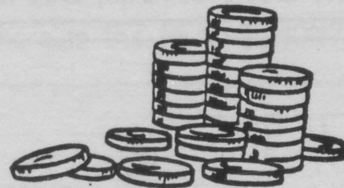(See ad on previous page for bus schedule.)
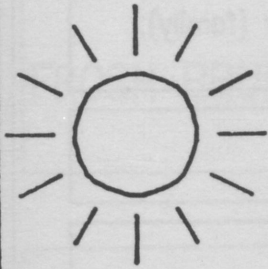
This is our Best Event.
We take you away ... for Fun in the Sun!
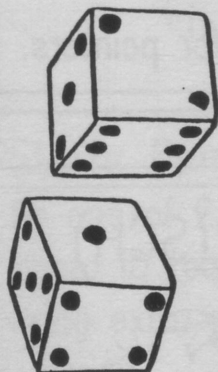Don't worry about food or drink (especially drink).
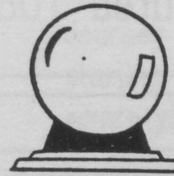
then ...

8:30 is ... $ MONTE CARLO NIGHT $

(with SciSoc)

(No Age Restriction.)

It's time for Big Time Gambling!
The Cash is Fake, but the Fun Ain't!
With Thousands of Dollars Each, try your luck on ...
'live' Horse Racing, Craps, Black Jack, Lucky 7, Crown & Ankers ...
win spot prizes or just dance the night away
at the Largest (and most expensive) University Pub in Canada!
(Ask your Big Bro/Sis where to meet.)

Wed Sept 3 starts slowly (Thank God) ...

with the Drop-In-Centre from 9am–4:30

And take the ET CETERA TOUR for interesting and useful information.
This is also another chance to Register and meet your Big Brother & Sister (family).

... or, at about the same time

Faculty Lectures 10am–3pm

(yawn) Enough said.

Getting hungry?

Faculty BBQ (foood) 4:45–6:45 Lower Columbia Field

Meet your Profs as they slave over hot coals to cook Your dinner.

Don't Get Nervous, But ...

ELPE 7pm–8pm

The English Language Proficiency Test. Ask your Big Bro/Sis for pointers.

(Yeah, I passed! / S---, I failed) where's the party?

Caribbean Pub, 8pm, South Campus Hall (SCH)

Wear Bermuda Shorts if you have them for ...
Limbo Contests,
Tropical Punch, **Rum rum rum** ...

(No Age Restriction.)
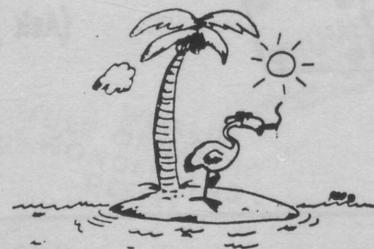
Thurs Sept 4 starts serious but ends...

University Registration
 —Pay tuition fees, (bring cheque book and ID)
 —get Photo ID taken (for tonight's Pub Crawl)
Ask your Big Bro/Sis how to avoid line ups.

Time for some free food.

FROSH BRUNCH 11am—1pm

Big Bro/Sis for whereabouts.

THE FROSH CAMPUS TOUR '86   1—3pm

Journey into the Unknown starting in the same place where you 1st registered.

FAMILY GET TOGETHER 3—5pm

Go out for dinner, meet other Frosh families in a less hectic atmosphere.

But where is the REAL ACTION??

THE PUB CRAWL   THE FUN CRAWL
"These two are what University is all about."

Starts 6pm.
Be one of 2,300 drunk Frosh.
Photo ID required (19 yrs or older).
Bring extra money.

5—11pm
GoCarts,WaterSlides,BumperBoats,MiniGolf
WavePool,Giant HotTub,Dry Dance

Buses leave outside Math&Computer Building.

Terminating in a BIG party at Bingeman Park

Fri Sept 5 has two main events ...

FED's FROSH DAY 1–7pm

(Notice how nice we are, starting so late. How's the HANGOVER? Shhhhh.)

1pm: Meet in the PAC (Physical Area Complex).
2pm: Crazy Games.
5pm: BBQ on the Village Green (near Village I).
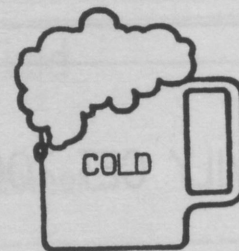5:30 Aerial photo. Come out so we can outdo those Engineers.

SUNSET PARTIES AT SUNNYDALE 9pm

3 or more themed Parties!
Ask your Big Siblings what to wear and where to meet.
(Bring crazy clothes from home.)

Sat Sept 6 starts with

SHINERAMA 9am–12pm

Free Lunch for Shiners (you).
Big Point Value.
All faculties washing cars for Charity. Help us outdo those Engineers.
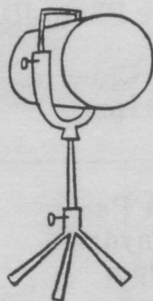
Saturday continued ...

ELORA GORGE   12:30–4:30pm

Bring your towel, we're going swimming!
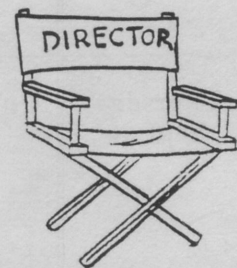Buses leave behind the M&C Building,

but if you want to bike it, meet at the CS sculpture (funny blue thing) beside the M&C.

HOLLYWOOD PUB (with SciSoc) 8:30 SCH

Meet Frosh from another Faculty.
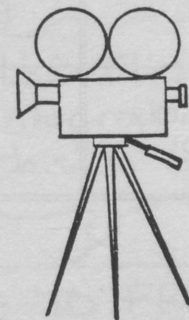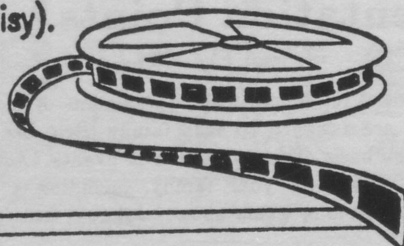(Don't forget to wear your shades!)

(No Age Restriction.)

Sun Sept 7 is a day of (semi) rest:
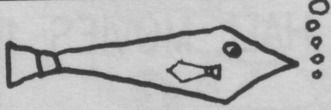
FED HALL MOVIES 12–7pm

We're starting late so you can nurse your hangover:
Movies & Games (nothing noisy).

Be the one who's lasted the longest.

Math Orientation '86

Excitement! Adventure! Really *Wild* Things!

	Morning	Afternoon	Evening
Monday **Sept. 1**			Village Raid
Tuesday **Sept. 2**	Registration Centre 9-12:30	MMT 12:30-6:30	Casino Night with SciSoc at Fed Hall 8:30pm
Wednesday **Sept. 3**	Faculty Lectures Drop-In Centre 9am-4:30pm	Faculty Lectures Faculty BBQ 4:45-6:45 Lower Columbia Field	ELPE 7-8 Caribbean Pub 8pm SCH
Thursday **Sept. 4**	University Registration Frosh Brunch 11am-1pm	Foot Rally 1-3pm Family Get Together 3-5pm	Pub Crawl 6pm Must Have Photo-ID Fun Crawl 5-11pm
Friday **Sept. 5**		Fed's Frosh Day 1-7pm Fed BBQ Village Green	Sunset Parties Sunnydale 9pm
Saturday **Sept. 6**	Shinerama 9-12 Free lunch for Shiners Big Point Value	Elora Gorge 12:30-4:30	Hollywood Pub Good Tuna 8:30pm
Sunday **Sept. 7**		Fed Hall Movies	

Orientation Points

You may have noticed references to points in some of the preceding ads. These points are assigned to each family (Brig Bro/Sis and associated Frosh) on the basis of participation in events. Accumulated points may obtain prizes for your family, including a fabulous Grand Prize. Like a week-long game show. Johnny, tell 'em what they've won ...