Major surgery saves boiler

A $20,000 boiler retubing operation is under way at the Central Utilities Plant. One of the boilers, in use for 20 years, has become heavily corroded by dilute sulphuric acid which is formed when bunker oil comes into contact with live steam.

The boiler, one of four that deliver live steam into the University's heating system, has a life expectancy of 50 years. New boilers cost up to $500,000, so the task of refurbishing the existing equipment was considered, according to Chief Engineer John Vandermolen.

Replacing the tubes is a major operation. The original manufacturer has long since gone out of business and the 1,200 two-inch tubes, each approximately 15 feet long, had to be custom bent to conform to a number of different profiles. This meant that the original tubes had to be carefully removed and shipped to the factory to serve as models for their replacements.
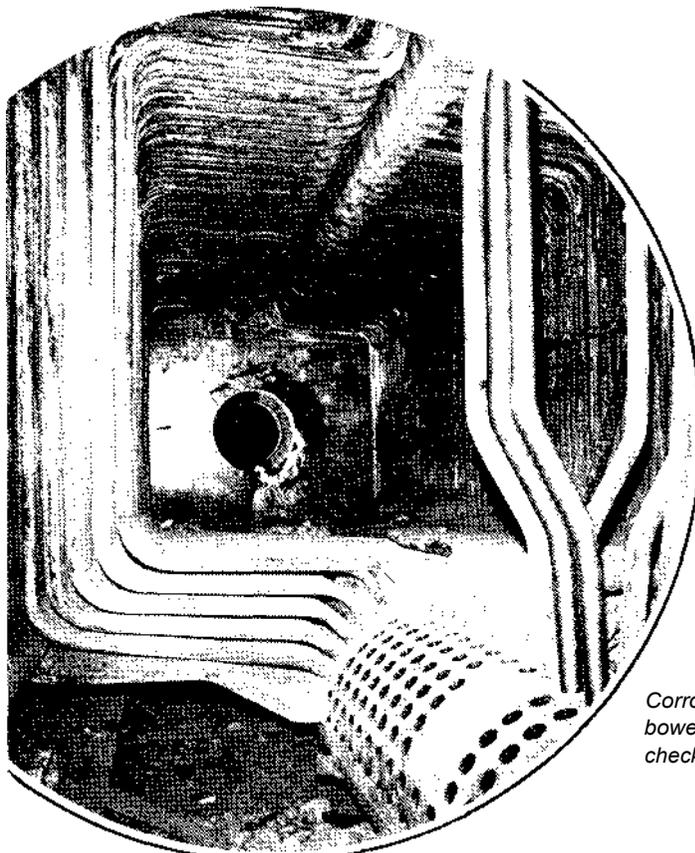
Dismantling began last winter and the new replacement tubes are now being installed by a Toronto company of boiler specialists.

The job is expected to be finished this spring. In the meantime, the plant's three other boilers are keeping us warm — a task well within their capacity, assures Mr. Vandermolen.

Once the boiler is refired, the corrosion process will begin all over again. Mr. Vandermolen says the answer to the problem of corrosion probably lies in converting to gas firing. This, however, would cost another $50,000, and funds are not yet available. ❏

Corroded tubing in the bowels of boiler #1 is checked by a technician.

Graduate degree in agriculture designed for high-tech careers

A new graduate degree, a Master of Agriculture, is designed to prepare candidates for professional careers in technical and highly specialized fields of the agriculture industry. The non-thesis degree, recently approved by Senate, will require students to take 10 courses and obtain specific on-the-job experience.

The professional program will provide training in fields of rapidly expanding technical knowledge such as pest management and food technology. It should prove particularly valuable to people in government and industry positions where educational leave programs are in effect.

OAC Dean Clayton Switzer explains that the program will serve a completely different clientele, but will be equally as rigorous as the traditional research-oriented M.Sc. degree. Students will follow a course of studies designed to complement their own professional interests and will be required to serve an internship related to their studies. For example, a pest management student might manage a crop for a grower for a season.

Thus far, four disciplines within the OAC have expressed an interest in developing a Master of Agriculture program. These are animal science, agricultural economics, environmental biology and food science.

Dean Switzer is now preparing a submission to go to the Ontario Council on Graduate Studies for its approval. He hopes that students will be able to enter the program by early 1984. ❏

Meeting of December 21, 1982.

Ten resolutions to set in place Guelph's commitment to liberal education were presented to senators at the last meeting of the 1982 year.

Tabled as notices of motion for resolution sometime in the new year, the recommendations come two years and 60 meetings after Guelph reaffirmed its commitment to liberal education in a report, *Liberal Education: Affirming a Commitment.*

Contained in a report, *Liberal Education: A Time for Action,* the resolutions were explained to Senate by the chairman of the Advisory Committee on Liberal Education, Biomedical Sciences professor, Harold Chapman. He told Senate that the recommendations will help translate the resolutions passed by Senate in 1980 into reality.

The *Time for Action* report is divided into two main sections — one dealing with the review of programs and the other with the review of liberal elective courses.

The advisory committee found that there is much misunderstanding of the 1980 report; many people restrict the term liberal education to what the report calls "breadth of education." The 1980 report defined liberal education much more widely, he said.

The first aspect of the academic program that the advisory committee addressed was "depth of study." The committee was pleased to find that the programs met the criteria of the 1980 report even in the General B.A. Program with its shorter three-year duration.

The advisory committee also examined the development of independent critical judgment and various skills. Here, all is not well, and the committee has recommended that program committees be required to report to the Board of Undergraduate Studies on measures that will address the deficiencies. One specific measure suggested by the committee is the designation of courses with significant writing requirements.

The report also addressed the question of "breadth of study," and one of the recommendations is that each program require at least two courses from outside the area of concentration and chosen from a list of liberal electives recommended by the committee. Almost all programs have a requirement of this type now, noted Prof. Chapman. What is new, however, is a recommendation that the courses come from a list prepared by the advisory committee.

The second part of the report discussed the criteria which were used to draw up the list of recommended courses. Unfortunately, said Prof. Chapman, there are too few courses at Guelph that satisfy a significant portion of criteria set out in the 1980 report. In particular, there are very few courses suitable for non-specialists where they can compare approaches or methodology in other areas.

Prof. Chapman said that several courses on the list may need to be modified. Those courses that are not on the list should be redesigned, or new courses introduced.

Many senators felt that the resolutions — some with deadlines — would be tough to implement, especially in times of restraint and increasing class sizes.

Three Deans — John Vanderkamp, CSS; Clay Switzer, OAC, and Dave Murray, Arts — argued that more dialogue is needed on the list of courses and any proposed changes between the program committees, the Departments, and the advisory committee. Chairman of Senate, President Donald Forster, recognized this concern and called for an amendment to the original motion, which called for resolution of the recommendations at this month's meeting of Senate, whereby the resolutions will be voted on after there has been an opportunity for further discussion among the various committees.

In other business, Senate accepted the *Report on Research Funding for 1981-1982.* Dean of Research Bill Tossell noted that while the dollar amounts received have increased three-fold in the last decade, because of inflation, we are just holding our own. The gradual decline in OMAF real dollars is being balanced by growth in real dollars from NSERC, MRS and SSHRC. The Dean noted the very significant increase in funding from SSHRC over the last three years. He also noted the healthy balance between basic research grants and applied contract research funds.

MOTIONS

Striking Committee
• Senate approved changes to Board and Committee membership for 1982-1983.

Board of Graduate Studies
• Senate approved the course changes for the 1983-1984 *Graduate Calendar.*
• Senate approved the change in regulation to permit transfers from Master's to Ph.D. programs no sooner than the end of the second semester and no later than the end of the fourth semester
• Senate approved in principle the participation of the Department of Physics in a joint graduate program with the Department of Physics of the University of Waterloo.
• Senate received a report for information on additions to graduate faculty and associated graduate faculty. They are:

Graduate Faculty — A.H. Houston, Brock University/Zoology.

Associated Graduate Faculty — B.R. Buttery, Agriculture Canada/Horticultural Science; D.G. Harcourt, Agriculture Canada/Environmental Biology; P.J. O'Donnell, University of Toronto/Physics; Y. Piche, University of Guelph/Botany and Genetics; R.P. Rand, Brock University/Physics; J.C. Waddington, McMaster University/Physics, and M.C. Zerner, University of Florida/Chemistry.

Report from the Research Board
• Senate approved the revised *Policy for Control of Drugs in Academic Programs.*
• Senate approved the *Report on Research Funding for 1981-1982* for information.

New Business

▪ Senate received the report *Liberal Education: A Time for Action.*
▪ Senate accepted the 10 recommendations contained in the report as notices of motion. These are:

Recommendation 1: that program committees report to the Board of Undergraduate Studies by April 1 on current or proposed measures which develop in students a capacity for independent critical judgment, such as a requirement that all students in four-year programs take at least one senior seminar or research project course;

Recommendation 2: that program committees report to the Board of Undergraduate Studies by April 1 on measures which ensure that the writing and reading criteria are met in the programs for which they are responsible;

Recommendation 3: that Departments report, through the appropriate program committees, to the Board of Undergraduate Studies by April 1 on which of their courses have a significant writing requirement so that these can be identified in the *Calendar;*

Recommendation 4: that the Faculty Policies Committee develop mechanisms by which Departments will take into account the extra work involved in teaching courses with significant writing requirements when assigning courses and making merit, promotion and tenure decisions;

Recommendation 5: that program committees report to the Board of Undergraduate Studies by April 1 on measures which enable students within their programs to integrate their knowledge and to compare the methods and concepts of different subjects;

Recommendation 6: that program committees by 1984-1985 require all students to take two liberal elective courses from the list in *Appendix I.* In the case of B.A. students these would be the natural or mathematical science courses presently required while in other programs the courses would be in the humanities or the social sciences;

Recommendation 7: that program committees amend their schedules of studies for 1984-1985 to require at least one of the two liberal elective courses to be taken in the second or third year of the program;

Recommendation 8: that Department chairmen encourage instructors to introduce, wherever possible, moral and aesthetic concerns into their courses and, in doing so, to indicate to their students that there are rigorous ways of dealing with such questions;

Recommendation 9: that Departments review the courses that appear on the list (Appendix I) and where appropriate modify them to more fully meet the liberal education criteria, submitting amended course descriptions to the Board of Undergraduate Studies, and,

Recommendation 10: that Deans encourage their Departments to offer liberal education courses at the 200 and 300 level ❑

CLASSES begin Thursday for students entering the winter semester. Orientation continues, however, and among the highlights is the President's new student luncheon, Thursday, January 6. Details: "Next Week at Guelph."

AN **INTERACTION** evening for all mature students will be held Thursday, January 13 at 7:30 p.m. in the Older-Than-Average Student Lounge, level 5, University Centre. A discussion on funding issues will be led by Gerry Davidson, Student Awards, Office of the Registrar.

THE ROYAL ALEX SHUTTLE offers a trip to Toronto to see the Broadway musical show, *Barnum.* A travel cruiser is scheduled to leave the University Centre at 6:30 p.m., January 27 and return immediately after the show. Tickets, available at the University Centre box office, are $32.50 for the show and transportation. Details: Ext. 3940.

PHYSICS students recently received over $15,000 in scholarships, not $1,500, as reported in the *News Bulletin* of 82 12 16.

VOLUNTEERS are needed to assist in an English as a second language preschool program on Mondays and or Thursdays. Details: Pat Restivo, 822-2538.

THURSDAY marks the last day of the annual OAC Agricultural Conferences (see *News Bulletin* 82 12 16.) Some 1,500 are attending the events which provide people with up-to-date information on findings at the University and in the Ontario Ministry of Agriculture and Food. Details: Professor Stan Young, Ext. 3933.

LEADERSHIP CONFERENCE '83, a conference to build the leadership skills of students, will be held Friday evening, January 14, and Saturday, January 15, sponsored by the Student Counselling and Resource Centre. Workshops will be offered on leadership styles, motivating the group, assertiveness, and planning and priority setting.
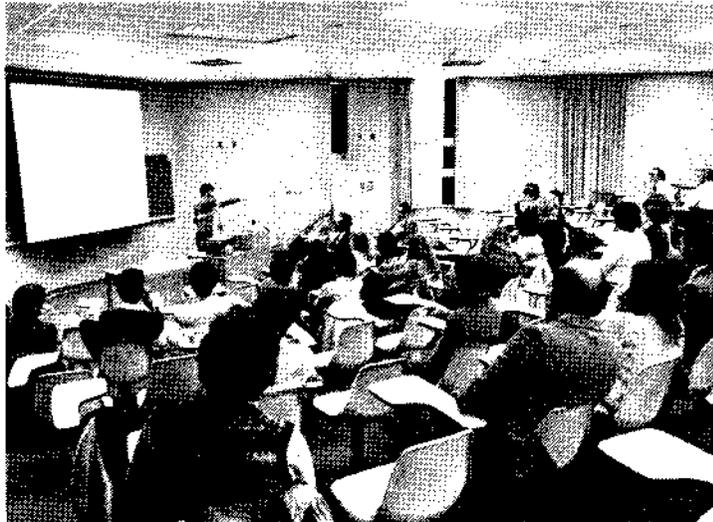
Details: contact the Connection Desk, level 3, University Centre, 836-4444. Registration is required before January 12. There is a fee to cover costs.

SEVERAL EXHIBITIONS are on show at the Macdonald Stewart Art Centre. "Images of the Madonna," features 25 years of sculpture by Rockwood artist Josef Drenters. Art Centre Curator Ingrid Jenkner put together the exhibition with an illustrated catalogue containing a comprehensive essay on the artist's influences, stylistic inspirations and unique approach to his work and materials. The exhibition continues to February 6. There will be an opportunity to meet Josef Drenters Sunday, January 23 at a 3:15 p.m. coffee reception when David Kaye will also be present.

"Engaged Reliefs" by artist/weaver David H. Kaye is another exhibition. It features sculptural woven reliefs. Although most works are woven on a traditional loom, Kaye uses several techniques to pull and shape the individual pieces into forms and shapes which, when combined with paint or graphite, achieve a marriage of art and craft.

Also continuing to February 6 is an exhibition of decorative art in brass, copper and iron by turn-of-the:century Montreal metalsmith, Paul Beau.

Admission to the Art Centre is free, and everyone is welcome.

Minds and math meet in this exchange of ideas between high school students and faculty members of the Department of Mathematics and Statistics. Further meetings of the Super Math Club are planned.

Local high schools and University form Super Math Club

The Wellington County-University of Guelph Super Math Club held its inaugural meeting recently. Thirty top-notch math students from eight area high schools, along with a teacher from each school, met with members of the Department of Mathematics and Statistics for an initial exchange of ideas.

After an official welcome by Departmental Chairman, Professor W.R. Smith, Professor Jack Weiner, Mathematics and Statistics, gave a talk on "Collapsing Sums and $1^k + 2^k + \quad + n^k$ -POWE Rful Formulae."

The club has been organized by Gary Flewelling, mathematics consultant for the Wellington County Board of Education and Prof. Jack Weiner, co-ordinator of student relations in the Department of Mathematics and Statistics. They plan to hold one meeting a month from December through April, held alternately on campus and at one of the local high schools. Future talks include "Instant Insanity; The Forerunner of Rubik's Cube," by Professor Gary Spoar, Mathematics and Statistics and "How Do They Invent These Games, Any Way?" by Mr. F lewelling.

Prof. Weiner and Mr. Flewelling believe the students will benefit from working with mathematics that goes beyond the high school curricula. As a vital part of each presentation, the students will receive a set of consolidation and extension and,in some cases, research problems. The emphasis is on participation and follow-through by the students.

The organizers also believe this club will foster communication between high school teachers and the faculty members of the Department of Mathematics and Statistics. A better understanding of each other's needs and expectations will benefit all concerned, they say. ❏

Winter at the Arboretum

The Arboretum has a new series of nature interpretation programs for winter and spring.

Some of the special programs planned include a winter bird survey January 8; a night stalker's owl prowl in February; a maple syrup exhibit in March, and the Alumni Maple Syrup and Pancake Festival in April.

The Sunday afternoon nature walks led by naturalists continue. Participants leave from the J.C. Taylor Nature Centre each Sunday at 2 p.m. In addition, snowshoes are available at the Nature Centre, along with hot chocolate and tea. The trails are open to snowshoers, walkers and skiers.

In the spring, nature lovers, armed with cameras and binoculars, can view wildflowers and birds along the Arboretum's nature trails. For complete details about the Arboretum's programs, telephone Ext. 3932 or consult "Next Week at Guelph" in the *News Bulletin.*[]

Anne Callagan

A funeral service was held Monday for Family Studies professor Anne Rosemary Callagan who died December 30.

Mrs. Callagan is survived by her husband, Psychology professor John Callagan, and two daughters, Sandra and Janet.❏

ics non-credit course descriptions

An Introduction to Computing

JANUARY 12, 19:00-22:00

This course will introduce novice users to terms such as hardware, software, configuration, and what they all mean. Services provided by ICS will be explained, and the strengths and weaknesses of the two timesharing systems, APL and CMS, described. The purpose of this course is to give potential computer users information to aid them in deciding which non-credit courses best fulfil their needs.

Computer Concepts

JANUARY 18,20, FEBRUARY 24,25 13:30-16:30

Computer Concepts describes the basic components of a computer system, using the university environment as an example. The course is open to all members of the university community, and will be useful for those people with little knowledge of computers.

The first session covers two topics: a description of computer system machinery (hardware), and a description of the programs (software) that get us the results we want. In the second session the importance of planning and future trends in computing will be emphasized.

The presentation is part lecture, part discussion, and some "hands on' computer experience will be provided for attendees. This course is not recommended for students. Registration is limited to 20.

Test Scoring System

JANUARY 25 13:30.16:30

The Test Scoring System is an interactive APL system produced to assist faculty in scoring multiple choice examinations.

Course content will include what the system will and will not do, how to code student answer cards, and correct data, what reports are available, and how to create a file containing results for use by the MARKS system. The Test Scoring Manual required for this course is available in the campus bookstore.

Prerequisite: None.

Marks Record Keeping System

FEBRUARY 1 13:15-16:00

MARKS is an interactive APL program intended for use by faculty to record student assignment marks over a semester and to calculate student percentages.
It allows up to 15 assignment marks to be entered and provides reports by class or by section. Assignments may be weighted, and overall student percentages are calculated using the weighting factors specified. Class and section mean and standard deviation are given, along with various other statistics.

If a file containing students' results was created in the Test Scoring System, this data can be recorded automatically for one of the 15 assignments in MARKS.

Knowledge of APL would be helpful, but not essential. The MARKS system will be presented in sufficient detail to enable its use by faculty without prior computing experience.

The MARKS user manual is available in the campus bookstore and is required for this course.

Prerequisite: None.

Introduction to Script

JANUARY 12,14,17,19,24 09:00-12:00

(FOR OFFICE PERSONNEL)

This course is designed for office personnel who wish to spend less time retyping reports, memos and research proposals. Using the SCRIPT program, parts of a document can be revised or deleted without retyping the entire work. Manuals for the course will distributed in class.
Registration is limited to 15.

(FOR FACULTY AND GRAD STUDENTS)

FEBRUARY 14,16,18,22,25 09:00.12:00

This course is designed for faculty and graduate students who are involved in producing large documents and theses. You will learn how to enter, modify, and print text according to a specified format.

Topics discussed include creating and deleting text files, entering and modifying text, the use of Syspub, and the printing options available. Registration is limited to 25.

Prerequisite: An Introduction to Computing

Post - Script

MARCH 19,22 13:30-16:00

These seminars are for secretarial staff who are already familiar with the use of SCRIPT. Participants will be introduced to unfamiliar formatting control words, the form letters packages, and will be encouraged to discuss their experiences and concerns about the use of the SCRIPT word processing program.

XEDIT for Volker Craig Terminals

JANUARY 11,27 13:30-15:30

A new editor is now available for anyone using CMS. The use of this editor can reduce the time taken for entering and modifying information. The course will explain how to use the new editor and allow some hands-on experience. It is directed towards users who are currently using a CMS editor but have little or no experience with XEDIT.

There will be a limited enrolment of 10 people.

Introduction to Sharp APL

JANUARY 18,20,25, FEBRUARY 1,8,15 17:00-19:00

This course is an introduction to one of the most concise, consistent and powerful programming languages currently available.

The course is designed so that a student with some previous knowledge of APL may take only those sections in which help is needed. Those unfamiliar with the APL language should take the entire course. Each section will build upon the material covered in the previous section.

The topics to be discussed include:
Lecture 1:
— Rudiments of the APL language

Lecture 2:
— Management of APL workspaces
— Using the APL public library

Lecture 3:
— More of the APL language

Lectures 4 and 5:
— Writing APL programs

Lecture 6:
— Using the APL FILE system

At the end of the course, the student will be able to use APL in calculator mode, enter and manipulate data, use and manage stored workspaces, and write and modify simple APL programs.

Independent practice on the APL system is essential for students to get the full benefit of this course, and assignments which provide such practice will be given. Students should purchase copies of the ICS manual, "An Introduction to Sharp APL", available in the campus bookstore. Additional recommended text (though not required) is "APL — An Interactive Approach" by Gilman and Rose.

Prerequisite: None

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Intermediate APL

MARCH 1,3,8,10 13:30.16:00

This course is intended as a continuation of the "Introduction to Sharp APL" course. However, it should NOT be taken in the same semester; the prerequisite is that you have used APL for at least one or two semesters. The objective of this course is to improve the skills of the APL'er by introducing and studying other facilities available, sharing programming techniques, and exploring innovative designs and considerations. Please feel free to attend only those lectures which interest you.

Lecture 1:
System functions and system variables

Lecture 2:
Packages, event trapping and batch APL

Lecture 3:
APL data base design.

Lecture 4:
Sharing files with other users.

Prerequisites: Intro to Sharp APL or equivalent experience.

Mabra Seminar

FEBRUARY 11 10:00-12:00

MABRA is an easy-to-use interactive record-keeping package which will allow you to store, retrieve, update and analyze data. The purpose of the seminar is to show you what MABRA is capable of doing. In this seminar, an existing MABRA system will be demonstrated by the user who created it, a new MABRA system will be created, and other possible applications will be discussed.

Introduction to CMS

JANUARY 17,19,24,31 FEBRUARY 7
19:00-21:00

CMS (Conversational Monitor System) provides an interactive facility for creating and editing files, executing computer programs and submitting jobs to the batch facility.

The first two lectures are prerequisites for the latter ones.
This course is divided into six modules:

1. Virtual machine concepts and use of the CMS editor
2. Editor and basic CMS commands
3. Text processing and implementing output options
4. Data processing and use of statistical packages
5. Programming using the compilers
6. CMS batch processing and the archiving of files

Prerequisite: Introduction to Computing or computer experience.

The CMS EXEC Processor

JANUARY 26,28 10:30-12:00

This course will cover programming techniques and the use of EXEC files under the Conversational Monitor System (CMS). The course will benefit those people who know a programming language. (This course has nothing to do with SCRIPT.)

If you plan to attend, please bring your questions and problems regarding CMS to the class.

Prerequisite: Introduction to CMS

Introduction to SPSS

FEBRUARY 7,9,11,14,16 12:00-13:00

SPSS (Statistical Package for the Social Sciences) is a series of programs designed for data manipulation and statistical analysis. This course will teach you the basic skills needed for using the SPSS programs. Participants will be shown a variety of ways to collect input survey data, as well as the fundamentals of SPSS programming. A knowledge of the use of the CMS editor is essential for the successful use of course material.

Prerequisite: Introduction to CMS

Prerequisite: Introduction to SPSS

Introduction to SAS

FEBRUARY 7,9,15,17 11:00-12:00

SAS (Statistical Analysis System) is a comprehensive package of computer programs for data analysis. It offers a wide range of statistical procedures (especially in the analysis of designed experiments), extensive data management tools (reads data in almost any format, updates, sorts and merges files), and report-writing features.

The course is designed to provide the student with enough exposure to SAS in order to use the statistical procedures. The student is expected to submit exercises using his/her own data or using a common dataset to be provided in class.

Prerequisite: A basic knowledge of statistics and Introduction to CMS, Module 1.

SAS/Graph Seminar

FEBRUARY 21,23 13:30.15:30

SAS/GRAPH is a general purpose colour graphics package which is operating under CMS. It allows users to create scatter diagrams, line plots, histograms, bar charts, maps in various projections, contour and 3 dimensional plots. These can be annotated in a wide variety of type styles.

This seminar is aimed at providing new users with the basic knowledge to get started on SAS/GRAPH and should also be of interest to existing SAS users seeking to present their analyses in graphic form. The flexible nature of this product will be demonstrated on the first day using hard copy output and foils from sample teaching programs. The second day will be devoted to a more in depth treatment of the package.

The SAS/GRAPH Users Guide provides a good starting point to learn about this package and is available at the Campus Bookstore.

Graphics for Managers/Supervisors

MARCH 17,18 13:30-16:00

This course will explain how presentation material can be prepared using a package called SAS/GRAPH that runs under CMS on the AMDAHL. No prior knowledge of either SAS/GRAPH or CMS is required and instruction will be given as if this is your first session at a terminal. The aim is to show you how both text and charts can be produced professionally on either transparencies or paper, with a minimum of computing expertise. The Hewlett Packard desktop plotter will be used during the course to show how the material is actually created. There will also be a demonstration showing how this material can be directed to the screen of an IBM Personal Computer and subsequently printed on a printer connected to it.

Microcomputer Concepts

JANUARY 31, FEBRUARY 2 13:30-16:30

Micro Concepts will provide entry level information on the components of a small computer, with an emphasis of what is involved in buying your own "personal" computer system. Topics discussed will be: strategies for evaluating the marketplace, office design, "ergonomics', vendor reliability, availability of service, importance of communications, and what is meant by user responsibility and control. The course will not tell you what computer to buy, but rather it will offer information which may make your evaluation process easier. Information will be provided in simple. jargon-free English.

Attention will focus on the three or four most representative micros on this campus, with a discussion on the tasks being done by these small systems. Specific features, such as budget management tools, or report writing abilities will be demonstrated.

Who Should Attend? Anyone who is curious about adding microcomputers to their working environment.

Who should NOT Attend? Anyone who is intersted in digital to analog conversion, busboards, 8088s, or digital filtering.

Institute of Computer Science

University of

Guelph

More on Microcomputers

FEBRUARY 3,8,10,14 09:00-10:30

If you are involved in research and would like to automate or control more precisely part of the experimental process, microcomputers may be the answer. This course has two sections and is designed to introduce the burgeoning world of small computer systems. In the first section, participants will be taught techniques for connecting microprocessors to motors, heaters, and a variety of scientific sensing devices. There will be a discussion on digital filtering as well as analog-to-digital conversions. The use and relationship of software to hardware will be explored.

The last three lectures will provide a brief survey of microcomputer software: it's history and it's programming languages. Upon completion of the course, you should have a basic knowledge of how to use a microcomputer for problem-solving.

Programming Language for Small Computers

FEBRUARY 21,23,28 MARCH 2 09:00-10:30

Basic is a popular programming language for microcomputers. It is can be easily learned and quickly put to use. This course will cover the fundamental aspects of programming in BASIC, using both interpreted BASIC and compiled BASIC. language. Although the course is designed for individuals with little or no knowledge of programming languages, participants are expected to have access to a microcomputer. Assignments will be given, and to obtain full benefit from the course participants are encouraged to complete these. Registration is limited to 25.

Introduction to Fortran

JANUARY 17,19,24,26,28 13:30-16:00

This course is for users interested in obtaining programming skills in the FORTRAN computer language.

The course will concentrate on the basics of the new FORTRAN 77 package recently introduced on CMS. This version of FORTRAN is likely to become the successor to the earlier compilers still being run on the system.

Students will be given programming assignments in CMS which are designed to increase understanding of the basic language syntax and develop programming skills. At the end of the course students should be able to design, code and debug their own programs.

Participants may find "Fortran IV with WATFOR and WATFIV" by Cress, Dirksen and Graham, or "WATFIV" by John B. Moore, useful references. These should be available at the campus bookstore.

Computer Networks

FEBRUARY 24,28 MARCH 2 09:00.12:00

This course is for computer users who want some insights on how information gets to the computer and back. An elementary knowledge of electrical principles is helpful. Topics to be covered include: serial vs parallel; asynchronous vs synchronous; baudrate; duplex; protocol; modems; datasets; RS232; errors; error detection; GANDALF PACX switch; front-end processors (the front door of the computer); multiplexors; DATAPAC and dialup.

Several short exercises and demonstrations will be used to illustrate the concepts. The third meeting will be a discussion of some of the newer equipment that will become part of our system: ETHERNET; Pack switching and Digital Telephone Network.

Manuals

Some courses may require manuals which can now be purchased at the campus bookstore.

Seminars

In addition to the scheduled courses being offered by ICS, a number of general interest seminars are held from time to time.

Details on the content and scope of these seminars are announced in the University News Bulletin and in notices which are sent to University Departments.

Instructional Staff

Staff of the Institute of Computer Science participate in the training program as instructors. Whenever necessary, computer professionals from outside the University or from other departments may be used as lecturers.

Registration

You can register for these courses by calling Lisa Menegon at extension 3046, or by coming in to see her in Room 215, ICS building. Office hours are from 8:30-12:00 and from 13:00-16:00.

Tentative Schedule for Winter Courses, 1983

COURSE	DATES	TIME	INSTRUCTOR
Introduction to Computing	Jan. 12	19:00-22:00	A. Stewart L. Ross
Computer Concepts (2 lectures given twice)	Jan. 18, 20 Feb. 24, 25	13:30-16:30	M. Brochet
Introduction to Sharp APL (6 sessions given once)	Jan. 18, 20, 25 Feb. 1, 8, 15	17:00-19:00	A. Mayer
Intermediate APL (4 lectures given once)	March 1, 3, 8, 10	13:30-16:00	L. Dunn
MARKS	Feb. 1	13:15-16:00	J. Mathews
Test Scoring	Jan. 25	13:30-16:30	J. Mathews
Mabra Seminar (1 seminar given once)	Feb. 11	10:00-12:00	M. Brochet
Introduction to CMS (5 lectures given once)	Jan. 17, 19, 24, 31 Feb. 7	19:00-21:00	F. Bruckner
The CMS Exec Processor (2 lectures given once)	Jan. 26, 28	10:30-12:00	R. Creedy
XEDIT for Volker Craig Terminals	Jan. 11, 27	13:30-15:30	R. Creedy M. Torrance
Fortran (5 lectures given once)	Jan. 17, 19, 24, 26, 28	13:30-16:00	T. MacKay
Introduction to SAS (5 lectures given once)	Feb. 7, 9, 15, 17	11:00-12:00	T. MacKay
SAS Graphics (2 lectures given once)	Feb. 21, 23	13:30-15:30	T. MacKay
Introduction to SPSS (5 lectures given once)	Feb. 7, 9, 11, 14, 16	12:00-13:00	T. Colwell
Introduction to SCRIPT for Office Personnel (5 lectures given once)	Jan. 12, 14, 17, 19, 24	09:00-12:00	M. Brochet
Introduction to SCRIPT for Grad Students and Faculty (5 lectures given once)	Feb. 14, 16, 18, 22, 25	09:00-12:00	J. Bell
Post Script (1 seminar)	March 19, 22	13:30-16:00	M. Brochet A. Stewart
Microcomputer Concepts (2 lectures given once)	Jan. 31 Feb. 2	13:30-16:30	M. Brochet
More on Microcomputers (4 lectures given once)	Feb. 3, 8, 10, 14	09:00-11:30	D. Genner D. Hood
BASIC: Programming Language for Small Computers	Feb. 21, 23, 28 March 2	09:00-10:30	D. Genner
Computer Networks (3 lectures given once)	Feb. 24, 28 March 2	09:00-12:00	K. Percival
Graphics for Managers/Supervisors	March 17, 18	13:30-15:30	T. MacKay
SAS/GRAPH for Managers/Supervisors	March 17, 18	13:30-16:00	M. Torrance

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Travels and Seminars

Professor Doug Auld, Chairman, Economics, presented a paper at the Atlantic Canada Economists Association Conference on "Provincial-Local Government Equalization Grants."

Professor H.D. Ayers, School of Engineering, was at the College of Engineering, University of Saskatchewan, Saskatoon to attend the opening of a new engineering building. He also attended an alumni reunion, the 70th anniversary of the College, and 40th anniversary of his own graduation.

Prof. Ayers also chaired a meeting of the expert committee on soil and water engineering of Canada committee on agricultural engineering services in Saskatoon. He also attended a meeting of the Canada Committee on Agricultural Engineering Services held at Fredericton.

Professor J.L. Campbell, Physics, was a visitor at Atomic Energy of Canada Research Co. at Chalk River, Ontario and at the Physics Division of the National Research Council in Ottawa. At each of these institutions he presented an invited talk entitled "The Proton Microprobe."

Professor P.S. Chisholm, School of Engineering, presented a discussion about problem-solving at the inaugural meeting of the colloquium for the critical approach to science and technology which was held on campus.

Professor W.T. Dickinson, School of Engineering, was in Burlington Vermont to attend the Acid Precipitation Conference which was co-sponsored by the Ontario chapter and Vermont/New Hampshire chapter of the SCSA. He assisted in the leadership of discussion groups, and represented the Ontario chapter as president-elect.

Professor C.A. Fyfe, Chemistry, was an invited speaker at the department of chemistry, York University, where he presented a lecture, "Analytical Chemical Applications of High-Resolution NMR Spectroscopy of Solids." He described recent work carried out in the Guelph-Waterloo Centre for Graduate Work in Chemistry.

Prof. Fyfe was also an invited speaker at the department of chemistry, Queen's University, where he presented a lecture "Chemical Applications of High-Resolution NMR Spectroscopy of Solids." He described the resent research work by his group in the Guelph-Waterloo Centre for Graduate Work in Chemistry.

He also was an invited speaker in the department of chemistry, University of Cambridge, England, where he presented a seminar on the topic, "High-Resolution NMR Spectroscopy of Solid Materials."

Dr. Peter Physick-Sheard, Clinical Studies, presented a paper at the First International Symposium on Equine Exercise Physiology in Oxford, England. He also presented two papers at a conference in Mississippi on computer applications in veterinary medicine.

Professor R.E. Vosburgh, Consumer Studies, was speaker at the consumer education seminar organized by the International Organization of Consumers Unions in Ottawa. His presentation was "Recent Developments in Consumer Education in Canada."

Professor Dan Yarmey, Psychology, was an invited speaker at the symposium, "It's Fun to Learn in Our World Today," held at the Lifelong Learning Institute, The Bernard Betel Centre for Creative Living, Toronto. Prof. Yarmey's paper was entitled "Can I Remember Things."

Next Week at Guelph

THURSDAY, 83 01 06

First Day of **Classes**
Sports - MEN'S VOLLEYBALL, Waterloo at Guelph.
Winter Orientation - NEW STUDENT LUNCHEON, 1200, President's House; LIBRARY ORIENTATION, McLaughlin Library.
OAC **Agricultural Conference -** EARTHEN MANURE STORAGES, 945, Royal Canadian Legion, Guelph; TIPS FOR MINIMIZING COSTS AND MAXIMIZING CROP PROFITS, 945, Royal Canadian Legion, Guelph; ONTARIO FOOD PROCESSORS FIELDMAN'S CONFERENCE, 800, Italian Club, Guelph.
Spotlight on the University of Guelph - UNIVERSITY BOBSLED TEAM, with John Guest and Bruce Webb, 1900, cable 8.

FRIDAY, 83 01 07

Worship - ANGLICAN EUCHARIST, 1700, Johnston Hall 158.
Friday Flix - SHARKEY'S MACHINE, 1900 and 2115, PS105.
Sports - WOMEN'S HOCKEY, Guelph at McMaster.

SATURDAY, 83 01 08

Arboretum Program - WINTER BIRD SURVEY, 900, J.C. Taylor Nature Centre.
Sports - MEN'S BASKETBALL, Guelph at Waterloo; MEN'S HOCKEY, Laurentian at Guelph.

SUNDAY, 83 01 09

Worship - CATHOLIC MASS, 1010, PCH; CAMPUS CHURCH SERVICE, 1030, PS113.
Sunday Cinema - RAIDERS OF THE LOST ARK, 1900 and 2115, WMH.

MONDAY, 83 01 10

Instructional Development Workshop - LEADING TUTORIALS SEMINARS AND DISCUSSIONS, 900; MASTERING 16mm FILM/VIDEO-TAPE EQUIPMENT, 1400, Ext. 3522.
Spotlight on the University of Guelph - UNIVERSITY BOBSLED TEAM, with John Guest and Bruce Webb, 1830, cable 8.
Rovers Pub - 2000, PCH.

TUESDAY, 83 **01 11**

Faculty Association - EXECUTIVE MEETING, 1200, Board Room, Faculty Club.
Worship - CATHOLIC MASS, 1710, chapel, level 5, UC.
Symposium - ONTARIO GOLF SUPERINTENDENTS ASSOCIATION, PCH.

WEDNESDAY, 83 01 12

Continuing Education - SOLVING THE PROBLEM OF THE PROBLEM EMPLOYEE, 900, Ext. 3956 for details.
Worship - ANGLICAN EUCHARIST, 1200, Johnston Hall 158; CATHOLIC MASS, 1200, chapel, level 5, UC.
Sports - WOMEN'S BASKETBALL, McMaster at Guelph, 1800; MEN'S BASKETBALL, McMaster at Guelph, 2000.

THURSDAY, 83 01 13

Spotlight **on** the University of Guelph - UNIVERSITY BOBSLED TEAM, with John Guest and Bruce Webb, 1900, cable 8.

Telephone Directory
The 1983 University of Guelph telephone directory will be available Friday, January 7 for Departments to pick up at the Switchboard Office, Room 017, basement, Johnston Hall.

Montreal school children surround Mr. and Mrs. David Stewart of the Macdonald Stewart Foundation (rear, left) and Judith Nasby, Director of the Macdonald Stewart Art Centre, at the opening of the exhibition "Noel au Château" at the Château Dufresne Museum of Decorative Arts in Montreal. Inuit art from the Macdonald Stewart Art Centre and the University Art Collection was included in this exhibition. The felt appliqué wallhanging in the background, by Inuit artist Yuusipik, was donated to the University in 1981 by Mr. Donald Harvie of Winnipeg. It usually hangs in the chapel at the University Centre and was borrowed for the Montreal exhibition.

The School of Hotel and Food Administration recently presented scholarships to some of its outstanding students. The University of Guelph Scholarship winners were: left to right, (front) Elizabeth Fyfe, Mississauga, Stephanie Bates, Owen Sound, Karen Maki, Kitchener, Linda Craenen, Strathroy, (back) Prof. E. Fletcher, Chairman, B. Comm. Awards Committee, John Hanlon, Edmonton, Alta., Deborah Lefebure, Millgrove, Carol Wirth, Pembroke and Prof. T.F. Powers, Director of the School of Hotel and Food Administration.

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