

TRAINING AND EDUCATION ENSEIGNEMENT

INFORMATICS TUTORIALS 1989

Announcement

Title Graphics Systems and GKS – An Introduction
By DD Division, User Support – Graphics Section
When Monday 29 May to Friday 2 June (Mornings)
Where Divisional Workstation Training Room, bldg 513/1-21

Subject

The course provides an introduction to computer graphics with an emphasis on the Graphical Kernel System (GKS). It is foreseen that a second series treating more advanced concepts will be organized in the autumn.

The first half-day will be devoted to the subject of interactive computing and graphics and introduce basic terminology and concepts. The technology of display systems and architectures and hardcopy devices will be reviewed and graphics input discussed. The subject of graphics standard will be developed.

The remaining four mornings are devoted to the GKS system and its functionality. The idea of workstations, primitives, simple attributes, transformations, logical input devices, segments and metafiles will be explained with the help of example programs. These will be developed interactively by the participants, who will thus be able to put what they learnt directly into practice. Moreover the various support facilities available at CERN will be introduced (documentation, libraries and include files, list of available drivers, GKSTV with the graphics editor, plotting commands including the use of SGML and an introduction to layered products, such as GKSPACK, HPLOT, the NAGLIB Graphical supplement,...)

Registration

For practical reasons the number of participants will be limited to sixteen. If you want to attend this series you should discuss the matter with your direct supervisor, and if he/she agrees send an electronic mail message to INFOTUTO@CERNVM, indicating your preferred electronic mail address.

Lecturers

Ian McLaren is a member of the Graphics section in the User Support group in DD Division. He is mainly involved in installing GKS-GRAL package on the various computer systems and output devices available at CERN.

Jan Moebes is a Professor at Krefeld University (FRG) and has a long experience in teaching graphics to students. While working at CERN on a sabbatical recently he developed a GKS graphics editor, which he will use extensively during the course.

David Myers is head of the Graphics Section. He is involved in the development of the GKS-3D and PHIGS standards in ISO.

ENSEIGNEMENT GENERAL **Tél. 2844-5811**

Jeudi 18 mai

de 13.00 h à 13.30 h – Amphithéâtre

Science pour tous

par R. CARRERAS

ACADEMIC TRAINING **Tel. 2844-3364**

22, 23, 24 May

11.00 to 12.00 hrs – Auditorium

Major mathematical achievements of recent years

by R. F. CHURCHHOUSE / Department of
Computing Mathematics, University of Wales,
College of Cardiff

In recent years a number of long-standing conjectures in various branches of mathematics including Number Theory, Graph Theory, Analysis and Group Theory have been proved or disproved and, in addition, significant advances have been made towards the solution of a number of other outstanding problems. In these lectures, which are intended for non-specialists, the history of these conjectures and problems will be given and the methods leading to their complete or partial solution will be summarized. Specific problems to be considered include the representation of irrationals by rationals, transcendence, the Mertens Conjecture, Fermat's Last Theorem and the Euler Generalisation and the Four Colour Theorem.



**ENSEIGNEMENT TECHNIQUE
TECHNICAL TRAINING**

Tél. Secrétariat : 44.60

June 5 to 7, 1989

CAE IN ELECTRONICS

by **Dr. Lawrence ODESS**
Israel Aircraft Industries

Monday, June 5 - Main Auditorium
From 9 h.00 to 12 h.00 and 14 h.00 to 16 h.00
Open session

- **CAE : what ? why ? how ?**
- **New concepts in electronics development**
the various steps from conception to manufacture - the use of databases throughout all the design phases - tests philosophy - top down design approach - reduction of number of design cycles.
- **New technologies**
why design your own integrated circuit ? - alternative solutions : PLD, gate arrays, standard cells, full custom - characteristics of ASIC's (performances, volume of production and design cycles, analog ASIC) - CAE techniques - dangers to be avoided.
- **New development tools**
trends in the industrial tools - compatibility between those products (EDIF, VHDL, etc.) - use and limitations of PC's - use of main frames - the role of the workstation - integrated CAE facility for a large and diverse community of designers - how to get started.

25 & 26 May

11.00 to 12.00 hrs - Auditorium

Fractals

by **R. F. CHURCHHOUSE** / Department of
Computing Mathematics, University of Wales,
College of Cardiff

Although the concept and construction of curves, surfaces and solids of fractional dimension goes back almost 100 years it is only since the work of Mandelbrot (1975) illustrated through the medium of high quality computer graphics that the extraordinary complexity and diversity of fractals has been revealed. The lectures will be concerned with the theory, generation and various aspects of fractals.

Tuesday June 6 - TT Auditorium - blg 593
Closed sessions

- 9 h.00 Analog simulation**
role of analog simulation - fundamental theory - behavioral and mixed level simulation techniques - use of simulation tools - components modelling and librairies - review of main industrial programmes - trends.
- 14 h.00 Digital simulation**
the design process (from conception to manufacture, CAD, CAM, CAT tools, data capture) - role of the logic simulator - fundamental of logic simulator - component modelling and librairies - automatic testing of digital circuits (fault simulation, test pattern generation, design of test ability) - review of the main industrial programmes - trends.

Wednesday June 7 - TT Auditorium - blg 593
Closed session

- 9 h.00 Exploitation of an integrated CAE facility**
problems related to a large and dispersed community of designers - problems related to a large variety of techniques - compatibility between tools, standards - management of component librairies - organizational considerations.

Participation in the closed sessions is subject to prior enrolment. The number of participants is limited to 25 for each session. Those interested are requested to fill in and to return the application form below to the Technical Training Secretariat.

To : Technical Training Secretariat

I would like to participate in the sessions marked by a X

- ☐ Analog simulation
☐ Digital simulation
☐ Exploitation of an integrated CAE facility

Name : Div :