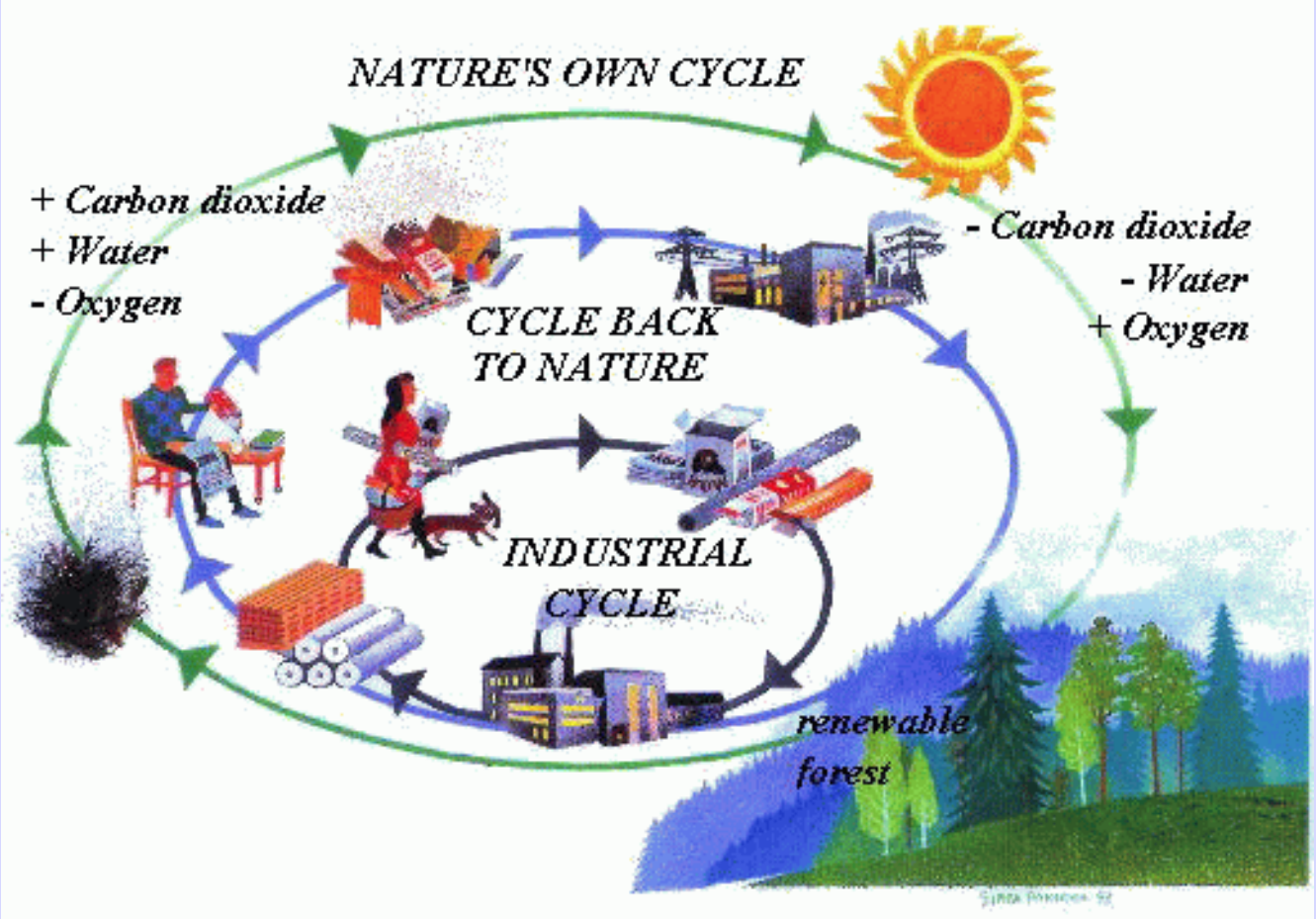
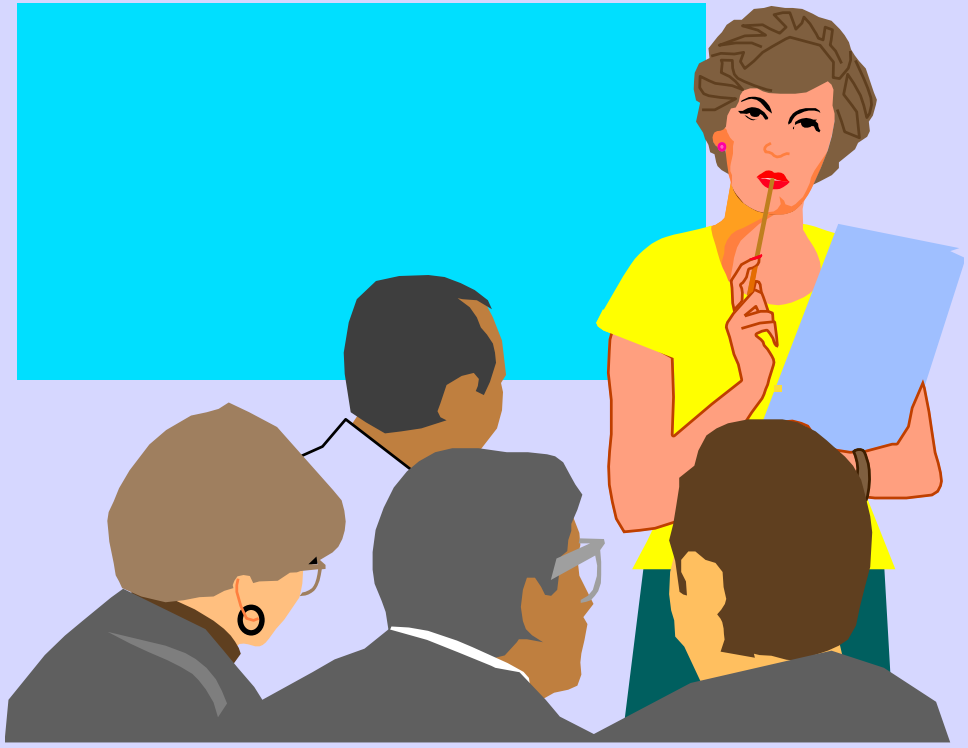
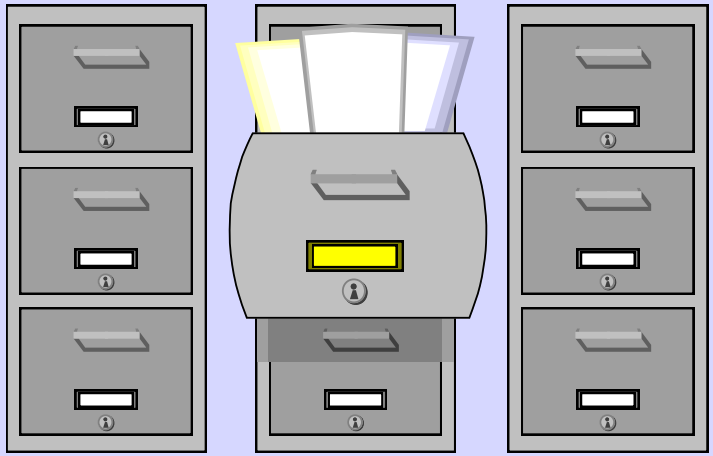
Environmental Technology
Industrial Ecology



Environmental Technology

Limited Mainframe use ‘70-79

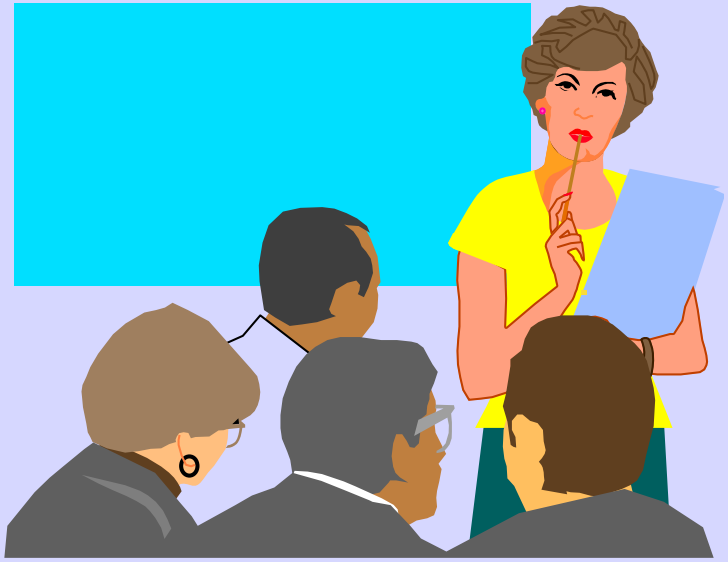


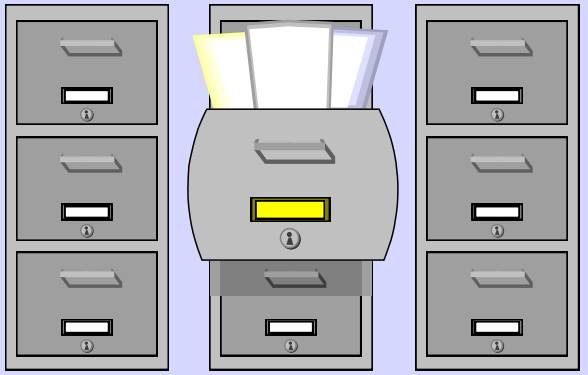


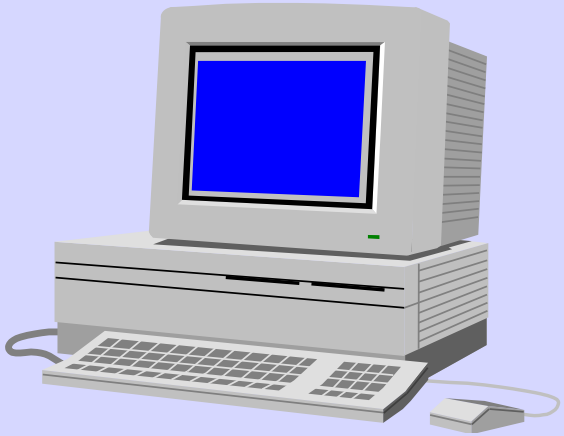
U of C Dial Up access

Environmental Technology

Microcomputers - 1979



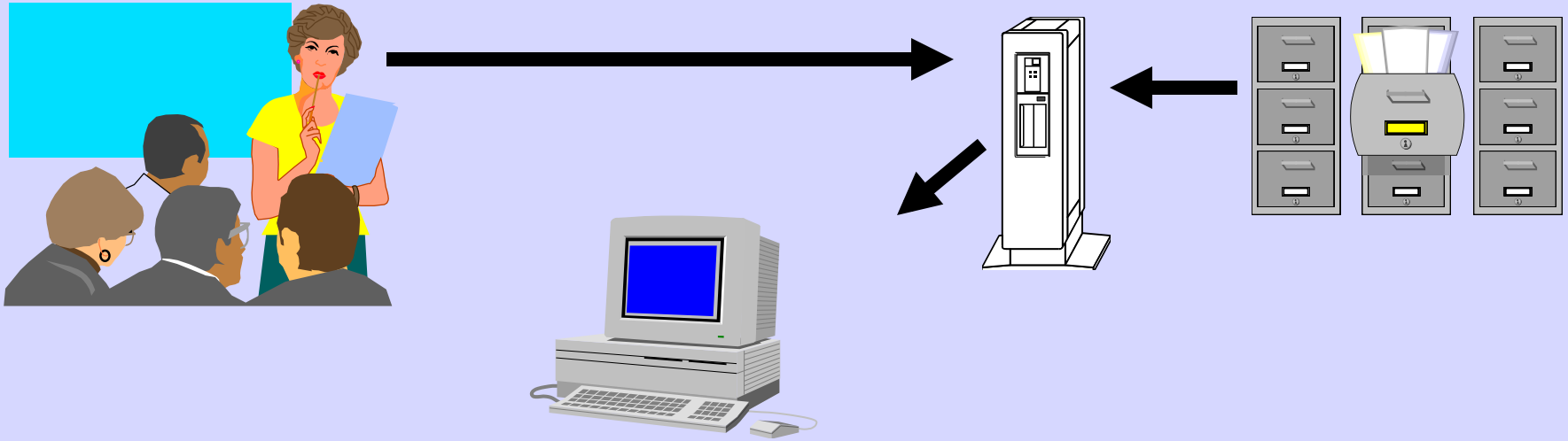




IMSAI VDP-80

Environmental Technology

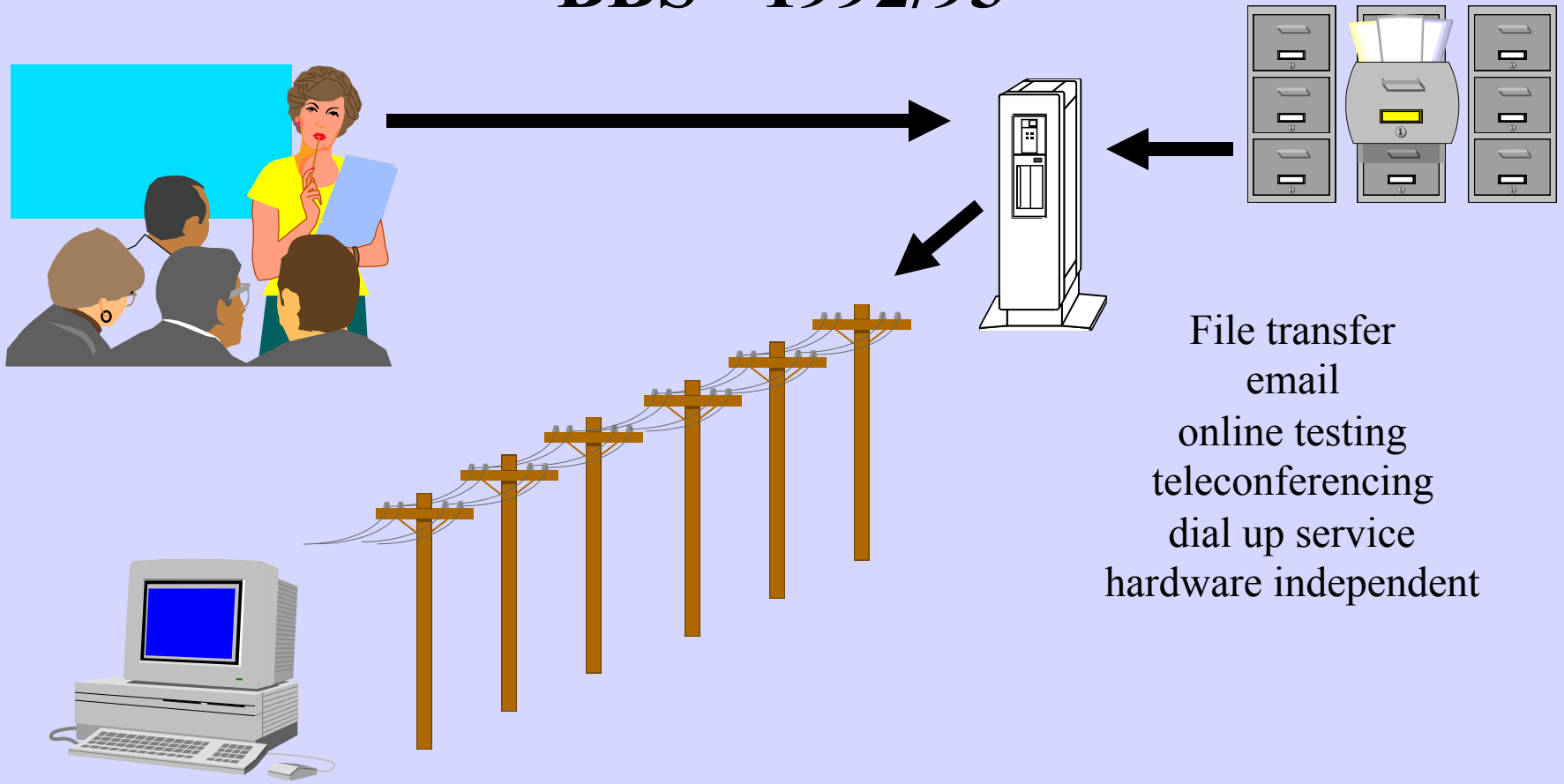
Interactive Electronics ‘85 - ‘90



Digital Authoring Language (DAL)
sold to Dupont, TN

Environmental Technology

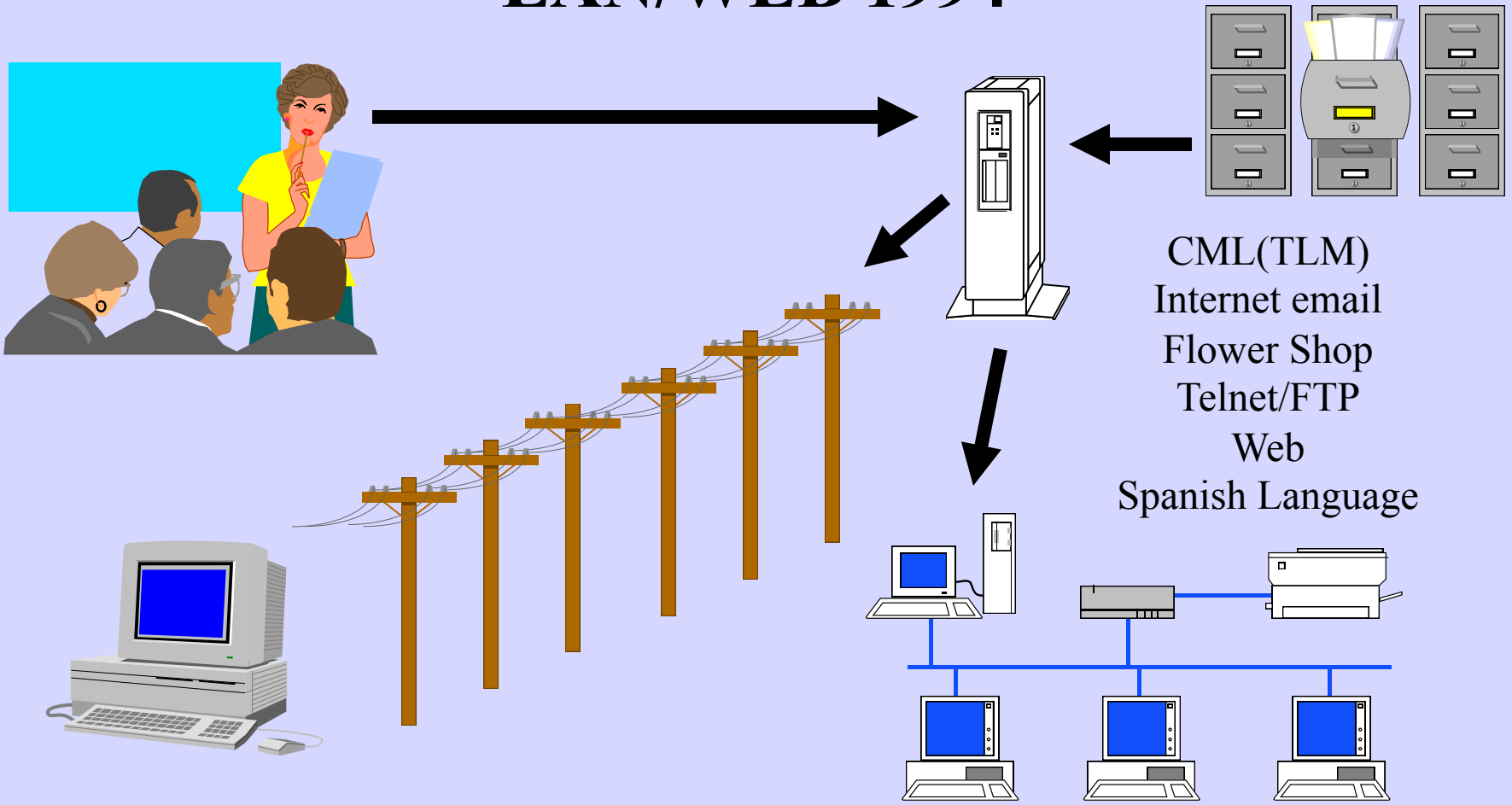
BBS - 1992/93



File transfer
email
online testing
teleconferencing
dial up service
hardware independent

Environmental Technology

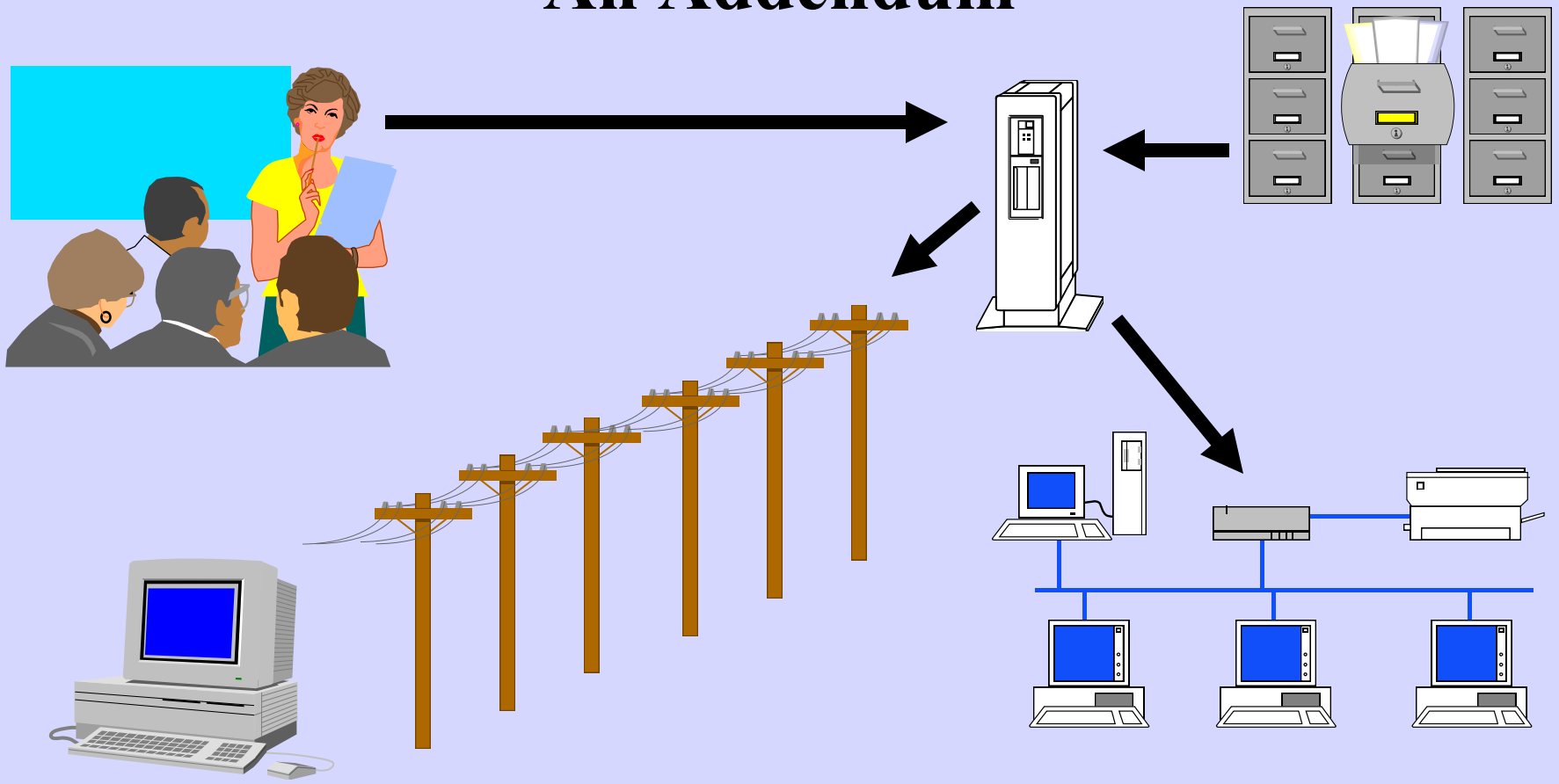
LAN/WEB 1994



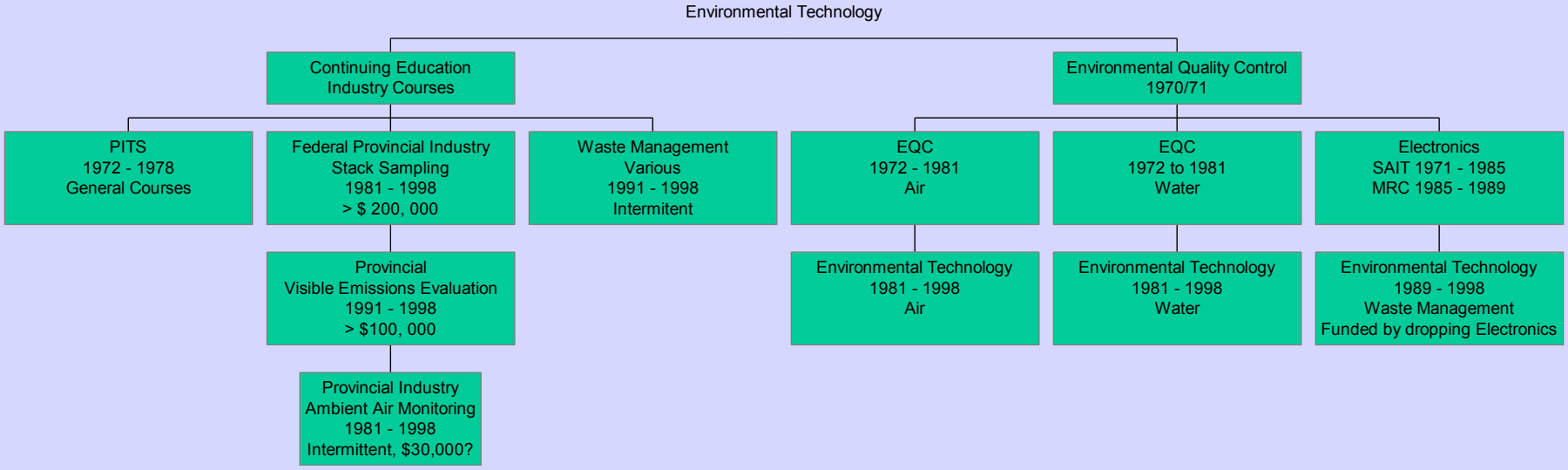
CML(TLM)
Internet email
Flower Shop
Telnet/FTP
Web
Spanish Language

Faculty of Science & Technology

An Addendum



Environmental Technology

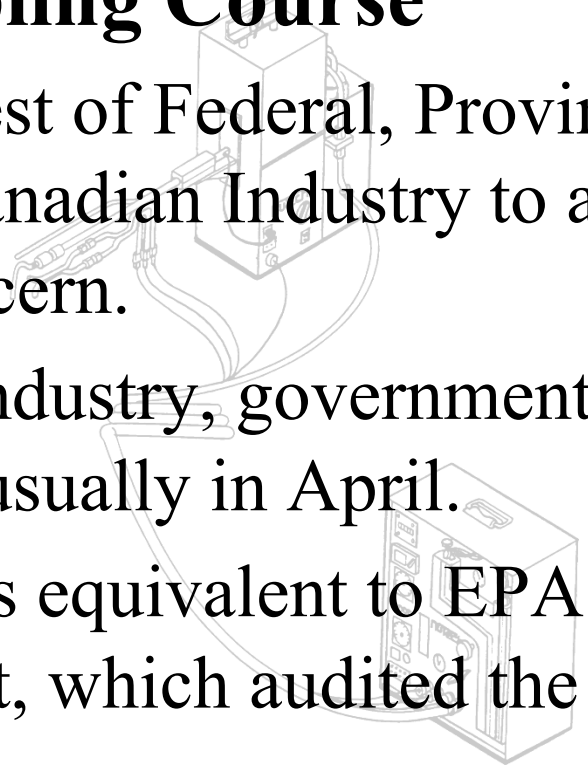


Environmental Technology - Water

- **Student Summer Work Project**
  - Phosphorous in Bow River below Bonnybrook
  - Instructor validated student results
  - led to tertiary recovery process at Bonnybrook
- **Student Summer Work Project**
  - Sewer outflows to Glenmore Reservoir identified
  - city action to limit outflows
- **Trout Studies Foothills (10+ years)**

Environmental Technology - Air

- **Stack Sampling Course**
  - at the request of Federal, Provincial, and Western Canadian Industry to address areas of unique concern.
  - taught by industry, government and academics each year, usually in April.
  - Accepted as equivalent to EPA courses by B.C. government, which audited the credit course.



Environmental Technology - Air

- **Visible Emissions Evaluation**
  - at the request of Provincial Government to certify industry and government personnel involved in monitoring visible emissions as required by legislation.
  - attracts students from across Canada.
  - special sessions run for industries from British Columbia to Manitoba.
  - sessions given in Edmonton at industry request.

Environmental Technology - Air

- **Ambient Air Monitoring**
  - at request of industry in Western Canada
  - low turnover, so intermittent offering, about once per 4 years.
  - joint industry, government, academic instructors.

Environmental Technology - Waste and Groundwater

- **Studies of and courses in**
  - Groundwater contamination by feedlots.
  - Remediation of Oilfield sites.
  - Management of Underground Storage Tanks.
  - Hazardous Waste Management and Packing.
  - Site Assessment.
  - Applied Research in remediation with industry.
- **Waste audits**
  - at SAIT and U of C by request.

Environmental Technology / Industrial Ecology

- **Environmental Technology**
  - Remediation
  - Reclamation
  - Command and Control
- of importance for at least the next 50 years in Alberta because of resource development.

- **Industrial Ecology**
  - Sustainable Development
  - Pollution Prevention
  - Energy Efficiency
- Becoming an international standard for doing business.

Environmental Technology

- Initially about 20% of diploma graduates returned to school to attain a Bachelors Degree.
- Currently almost half of our students.
  - want a degree option (Industrial Ecology)
    or
  - have a degree (Environmental Technology).
- Week long practicum for Environmental Technology students, in the Fall and Winter semesters in Business, Industry and Government (Municipal and Provincial).

Environmental Technology - Transfer Arrangements

- **Montana Tech**
  B.Sc.(Environmental Engineering) for past decade with Environment courses transferring as 3 and 4 year options.

- **U of A**
  Full 2 year transfer to B.Sc. (Environmental Science).

Environmental Technology - Transfer Arrangements

- **U of Regina**
  Transfer agreement of specific courses offered by their Engineering Department.

- **U Victoria**
  Transfer to their Biology programs with Environmental Biology courses transferring directly, including E.T. statistics course.

Environmental Technology - Transfer Arrangements

- **Royal Rhodes**
  2 year transfer to Environmental Science program.

- **Others**

  Students have transferred to Universities across Canada.

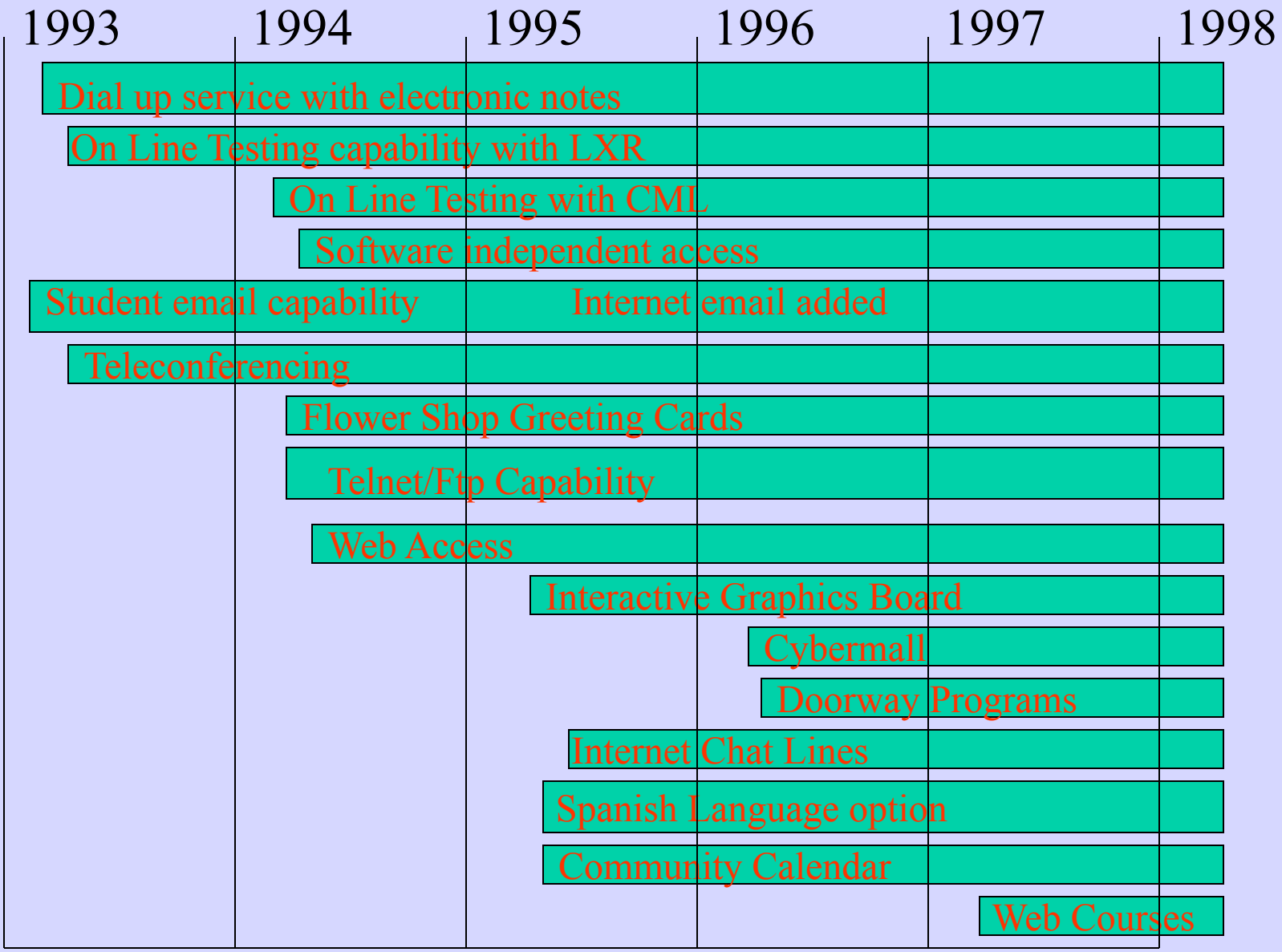
Environmental Technology Course Delivery

- **Goals**
  - **24 h/day, 7 days/week, 365 days/year** using our BBS/ ISP technology
  - **On-Line interactive courseware** with open access by students (Microsoft BackOffice, Frontpage98)
  - **Backward compatibility** with Galacticomm software
  - **Virtual Laboratory** with Labview
    - Step 1 - Computer Model (Fall, 1998 - ENVI 1214)
    - Step 2 - Stationary simulator
    - Step 3 - Virtual simulator

Environmental Technology Course Delivery

- **Courses on system**
  - Envi 1214, 1223, 1236, 1240
  - Ntsc 1112
  - Biol 1210
- **Computer based examinations**
  - Envi 1214 - Final interactive and task oriented
  - Envi 1240 - Midterm & Final as above
- **Fall, 1998**
  - CD textbooks in Envi 1214
  - First Virtual Lab with LabView in Envi 1214

Development of the Scitech ISP



SCITECH ISP

- CD available for browsing history of site.
- http://SciTech.mtroyal.ab.ca
  BBS/FTP/TELNET/WEB
- http://IndEcol.mtroyal.ab.ca
  WEB BASED
- SciTech and IndEcol linked.
- links to Mount Royal College.