

# THE INSTRUCTIONAL PROGRAMS TOWARD GREATER FLEXIBILITY

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One governing principle at NTID is that of *flexibility*. This principle is of special concern with regard to the educational placement and educational programming of a given student. Since it is felt that such programming should be individualized, the more options that can be worked out for the students, the better. Though the sponsoring institution, the Rochester Institute of Technology, has a large battery of study programs available, successful completion of most of these programs is contingent upon a stronger educational background than most of the entering deaf students have. NTID, therefore, must develop additional programs which these students can pursue successfully.

## THE VESTIBULE PROGRAMS

*The Policies, Guidelines and Application Procedures* for NTID, published in 1966, did not include the word "vestibule." However, those guidelines did suggest that the programs of instruction at NTID should make available; 1) basic, preparatory, and remedial programs in English, reading, mathematics, and science and 2) orientation to the postsecondary experience which should aid in the development of programs of study for each individual. This is currently done at NTID through its Vestibule programs.

It is expected that most new students will participate primarily in Vestibule programs as the first phase of their work at NTID. As the programs gain more experience, refinements will occur. It is anticipated within the next two years Vestibule programs will be making maximal use of such educational technologies as computer

assisted instruction, mediated lectures, educational television, laboratory classrooms, and programmed learning.

### *CERTIFICATE-DIPLOMA-ASSOCIATE PROGRAMS*

Four new technical curricula were designed in 1969 and made available to NTID students in the fall quarter. These were Diploma programs in architectural drafting, mechanical drafting, machine tool operation, and office practice.

Experience thus far indicates that this set of technical programs is not expansive enough and is not going to satisfy varying levels of aspiration among the deaf students. The efforts of the next two years will implement a set of curricula for Associate programs for deaf students which allow for 1) granting a certificate for successful accomplishment at any point in a given Associate program, 2) granting a diploma for prescribed sets of credits from a given Associate program, and 3) exiting into varying employment opportunities at various levels of academic accomplishment.

Several new certificate, diploma, and associate curricula were instituted in September, 1970 in the general areas of paramedical technologies, mechanical and electrical technologies, business technologies, and visual communication technologies. These programs are listed in Chart 1.

### *CROSS-REGISTERED PROGRAMS*

The principle of *integration* is also important to NTID. It is more majorly operative in the social than in the academic life of the deaf students, but it is made operative in the latter as well through a policy of *cross-registration*. This policy adds to the flexibility of programming for individual students. Deaf students may be cross-registered into many of the vast array of courses offered by the sponsoring institution, RIT. Chart 2 indicates what programs are available in the various colleges of RIT.

### *THE POSSIBLE PROGRAM SEQUENCES*

A summary of possible program sequences for NTID students is presented in Chart 3. However, it should be noted that this sum-

mary does not completely exemplify the flexibility with which NTID students are presently handled. Programs may be tailored for the particular student, whereby that student may have some courses in the Vestibule programs and some in certificate, diploma, or associate programs, or some for which he must be cross-registered. In addition, certificates and diplomas can be awarded at NTID without *strict* adherence to prescribed curricula.

#### COMPUTER ASSISTED INSTRUCTION

A considerable amount of energy has been spent in 1969 in the development of programs and materials for Computer Assisted Instruction (CAI).

An evaluation of the 70 deaf students who entered NTID in the fall of 1968 revealed considerable deficiencies in the area of secondary mathematics. Since these deficiencies vary with each student, it was proposed that a computer based system which could diagnose individual deficiencies and then remediate those deficiencies would be a most effective and advantageous way of meeting the needs of these students and of using CAI.

Chart 1-A summary of the certificate, diploma, and associate curricula initiated by NTID in September, 1970

#### BUSINESS TECHNOLOGIES

Certificate:	Accounting Technology Data Processing Office Practice and Procedures
Diploma:	Accounting Technology Data Processing Office Practice and Procedures
Associate:	Accounting Technology Data Processing Office Practice and Procedures

*MEHCANICAL AND ELECTRICAL TECHNOLOGIES*

- Certificate:      Basic Technical Drafting
- Diploma:          Architectural Drafting  
                       Electronics  
                       Machine Tool Operation  
                       Mechanical Drafting  
                       Numerical Control Programming
- Associate:        Architectural Technology  
                       Civil Technology  
                       Electrical Technology  
                       Mechanical Technology

*TECHNICAL SCIENCES*

- Certificate:      Histologic Technicians  
                       Physician's Office Technicians
- Diploma:          Clinical Chemistry Assistants  
                       Hematology Assistants  
                       Medical Record Technicians  
                       Microbiology Assistants
- Associate:        Medical Laboratory Technicians  
                       Medical Record Technicians

*VISUAL COMMUNICATION TECHNOLOGIES*

- Certificate:      Applied Photography  
                       Printing Technology
- Diploma:          Applied Photography  
                       Graphic Communications  
                       Ingerior and Window Display  
                       Printing Technology  
                       Textile Design
- Associate:        Applies Photography  
                       Printing Technology

Chart 2-A summary of the major programs available through the day colleges of RIT

*COLLEGE OF BUSINESS*

Accounting  
Business Administration  
Food Service Management  
Hospital Dietetics  
Retail Management  
Secretarial, Executive  
Secretarial, Medical

*COLLEGE OF ENGINEERING*

Electrical Engineering  
Electrical Technology  
Industrial Engineering  
Mechanical Engineering  
Mechanical Technology

*COLLEGE OF FINE AND APPLIED ARTS*

Advertising Design  
Ceramics  
Illustration  
Industrial Design  
Metalwork and Jewelry  
Weaving and Textile Design  
Woodworking and Furniture Design

*COLLEGE OF GRAPHIC ARTS AND PHOTOGRAPHY*

General Printing  
Journalism-Printing  
Printing Education  
Printing Management

*COLLEGE OF SCIENCE*

Biology  
Chemistry  
Mathematics  
Medical Technology  
Physics

Chart 3-A summary of the possible program sequences of NTID students

*POSSIBLE PROGRAM SEQUENCES:*

V -- E  
V -- C -- E  
V -- C -- D -- E  
V -- C -- D -- A -- E  
V -- C -- D -- A -- B -- E  
V -- D -- E  
V -- D -- A -- E  
V -- D -- A -- B -- E  
V -- A -- E  
V -- A -- B -- E  
C -- E  
C -- D -- E  
C -- D -- A -- E  
C -- D -- A -- B -- E  
C -- A -- E  
C -- A -- B -- E  
D -- E  
D -- A -- E  
  
A -- E  
A -- B -- E

*KEY:*

A — Associate Programs  
B — Baccalaureate Programs  
  
D — Diploma Programs  
E — Employment or educational  
Placement Elsewhere  
V — Vestibule Programs

Using a task analysis of the requirements for entry into Calculus 75-101 (a basic calculus course at Rochester Institute of Technology), objectives were established for a comprehensive Mathematics Diagnostic System (MDS).

By the fall quarter of 1969, the first version of the MDS was ready for a field test. A total of 10 students, 9 deaf and one hearing, participated in the field test. The success of this MDS may be demonstrated by the fact that six of the nine deaf students entered Calculus 75-101 in the winter quarter.

A variety of beginnings have been made in the area of short-term course development. First, the programming language APL has been acquired. The value of this language is that it allows the student to solve mathematics problems which range from simple arithmetic to very abstruse mathematics; it allows "regular Programming;" and it allows simulation and model building. This may all be done with the student in a "conversational mode" with the computer; that is, he may sit at a terminal and command the attention of the computer to *interact* with him on a real-time basis.

#### THE COMMUNICATION CENTER

The Division of Instructional Affairs is also responsible for the Communications Center. This Center devotes its energies primarily to improving speech production and speechreading skills of the deaf students, fostering their utilization of residual hearing, and providing training in manual communication for those who desire it.

This variety of instructional programs and the flexibility which they provide aids tremendously in NTID's ability to live with the combined principles of open admissions and minimal attrition.