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ABSTRACT

The October 1973 in-service session held in Atlanta, Georgia was the first of two in-service sessions held as a follow-up to the Summer 1973 Information Management Training Institute held in Nashville, Tennessee in June 1973. The purpose of the in-service sessions was to ascertain the progress made as a result of the summer programs by the various participants on the individual campuses represented at the Summer Institute. This report presents follow-up reports by participants of the summer institute. Topic cover: (1) Step-by-step development of an information system; conversion from manual to automatic data control center. (2) Overview of the Tuskeegee management information systems: designing specifications to serve the institution; (3) Organizational strategies for instituting a management information system; (4) Development of a student guidance and counseling system; (5) Methods of determining departmental and institutional costs; (6) Building process for a management information system; (7) A planning, management, and evaluation system for the new advanced institutional development program. (MJM)

PROCEEDINGS

of the

MANAGEMENT INFORMATION SYSTEMS
October 1973 In-Service Session

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

Ramada Inn
Atlanta, Georgia
October 18-19, 1973

ACTICS PROGRAM

Management Information Systems Directorate
Institute for Services to Education, Inc.
2001 S Street, N.W., Washington, D.C. 20009

INSTITUTE FOR SERVICES TO EDUCATION, INC.

President: Elias Blake, Jr.

Vice President: Frederick Humphries

The Institute for Services to Education (ISE) was incorporated as a non-profit organization in 1965 and subsequently received a basic grant from the Carnegie Corporation of New York. The organization is founded on the principle that education today requires a fresh examination of what is worth teaching and how to teach it. ISE is a catalyst for change. Under grants from government agencies and private foundations, ISE undertakes a variety of educational tasks working cooperatively with other educational institutions. It does not just produce educational materials or techniques that are innovative; it develops, in cooperation with teachers and administrators, procedures for effective installation of successful materials and techniques in the field of education.

TACTICS (Technical Assistance Consortium to Improve College Services)

Executive Director: Van S. Allen

Assistant Director: Mahlon Griffith

TACTICS is a program which provides technical assistance to the Black colleges and universities to enable them to develop whatever expertise they need to be more effective in achieving their goals. The TACTICS efforts have as their primary goals:

- ☐ To create a pool of deployable manpower using the most highly trained personnel in these colleges as well as in the nation, to deal with specific institutional problems identified by the colleges themselves
- ☐ To assist the colleges in their efforts to strengthen academic programs by helping them design academic and administrative support systems
- ☐ To establish a closer interface between federal programs and the institutions
- ☐ To ensure that the colleges become knowledgeable about federal funding programs as well as non-governmental programs from which they can benefit

Management Information Systems Directorate

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James A. Welch
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Systems Analyst:
Sondra O. Ferguson
Data Clerk:
Kevin M. Thomas
Research Assistant:
Linda M. Jackson

The Management Information Systems portion of the TACTICS program under the aegis of the Institute for Services to Education, Inc., has as one of its mandates to train college administrators in the development of information systems. This particular institute was designed for that purpose.

ED 093209

PROCEEDINGS OF THE MANAGEMENT INFORMATION SYSTEMS OCTOBER 1973 IN-SERVICE SESSION

RAMADA INN

ATLANTA, GEORGIA

OCTOBER 18-19, 1973

Prepared by

MANAGEMENT INFORMATION SYSTEMS DIRECTORATE
INSTITUTE FOR SERVICES TO EDUCATION, INC.
WASHINGTON, D.C.

FEBRUARY, 1974

ERIC

PREFACE

The October 1973 In-service Session held in Atlanta, Georgia, October 18-19, 1973 was the first of two in-service session held as a follow-up to the Summer 1973 Information Management Training Institute* held in Nashville, Tennessee from June 10-21, 1973.

The purpose of the in-service sessions is to ascertain the progress made as a result of the summer program, by the various participants (and their colleagues) on the individual campuses represented at the Summer Institute. It was intended--by MIS--that the information and technical knowledge acquired by the participants during the summer was not to remain in the heads of those participants *only*. Instead, the institute was designed so that the team approaches to solving institutional problems would be carried over onto the participant's campus, with that person acting as a resource for conveying the ideas acquired in the summer program to the rest of the campus personnel, thereby establishing a team effort on their campus. The team concept materialized on a number of campuses according to questionnaires received from the summer participants. Management Information Systems program personnel visited some of the schools and lent technical assistance when requested. Most of the follow-up activities on campus dealt with establishing an information systems module; others were involved in shaping their freshman information or admissions and registration procedures. In still other cases, the teams were more concerned with curriculum development and planning.

As a result of the Management Information Systems staff's visitations to the campuses, teams from seven (7) TACTICS schools were identified as possible significant contributors to the first (of the two) in-service session. These teams were involved in a number of activities and the team "leaders" were notified and requested to participate as moderators in the various special interest group (SIG) sessions. The following is a list of the topics presented together with their presentors.

	TOPIC	PRESENTORS
1.	"Step-by-step Development of an Information System: Conversion from Manual to Automatic Data Control Center"	Joseph L. White, Moderator Pauline Ferguson Genel Hairston Elva J. Jones Winston-Salem State University Winston-Salem, North Carolina

Mr. White, and his associates, shared with the participants, the development of the Winston-Salem State University (WSSU) information system. He offered examples of the pre-printed forms in use at WSSU, and detailed the steps taken in their changeover from unit record equipment to an IBM 360/20 data processing system. Plans for the future development were also discussed.

2.	"Overview of the Tuskegee Management Information System: Designing Specifications to Serve your Institution."	Matt R. Ward, III, Moderator Glenell S. Smoot Albert S. Tammany Tuskegee Institute Tuskegee, Alabama

This presentation dealt with an overview of the Tuskegee Management Information System as well as offering suggestions to the participants on the design of an information system at their institutions. Mr. Ward states that, "The design of an information system is a process wherein no 'foolproof' rules exist which can

*Details on the summer portion of the training program are available in the "Report on the Information Management Training Institute; 1973" – Volumes I and II.

guarantee an optimal or even satisfactory solution". Mr. Ward's associate, Mr. Tammany discussed the Tuskegee Planning, Programming and Budgeting System.

3. "Organizational Strategies for Instituting a Management Information System: Leadership Roles for Coordinating and Identifying New Responsibilities on Campus"

Lloyd R. Howell, Moderator
Knoxville College
Knoxville, Tennessee

Mr. Howell discussed some of the human factors involved in establishing an information system, and the kinds of qualities necessary for that person who is or will be in the leadership role.

4. "Freshman Research Project: Development of a Student Guidance and Counseling System"

Walter C. Howard, Moderator
George B. Tutt
Miles College
Birmingham, Alabama

Miles College recently decided that their system for gathering data on their freshman students was not adequate enough to meet their counseling needs. Mr. Howard and Mr. Tutt gave a step-by-step procedure on the development of their data base for incoming students.

5. "Methods of Determining Departmental and Institutional Costs: Survival of Educational Programs in the Curriculum"

Lawrence Jacobs, Moderator
Roger Mikesell
Oakwood College
Huntsville, Alabama

"Some of the issues at [Oakwood College] have been, who gets the new teacher, or who gets the new classroom or office." Mr. Jacobs' mission was to establish a methodology for resolving the aforementioned issues. He and Mr. Mikesell shared these findings with the participants.

6. "Building Process for a Management Information System: Planning – Implementation – Execution"

Joseph White, Moderator
Mr. George F. Bowie, III
Mrs. Ziner J. Reid
Mrs. Doris G. Sawyer
Mr. James Swimpson

Elizabeth City State University's information system was developed as a response to some problems they were experiencing as the University operation became more complex. Mr. White, and his associates, offered some insights into how they implemented solutions to some of their problems.

7. "A Planning, Management, and Evaluation System for the New Advanced Institutional Development Program: A Design for Accountability"

Oscar A. Rogers, Moderator
Hilliard L. Lackey
Jackson State College
Jackson, Mississippi

Dr. Rogers and Mr. Lackey provided the participants with some of the criteria necessary for accountability, particularly as it relates to the Advanced Institutional Development Program of the Office of Education. In the discussion, he offered some examples of information requirements for applying for AIDP funds.

* * * * *

The topics presented during the October 1973 In-service Session provided a forum in which the participants from the summer, and other interested persons, could draw from the experiences of the teams involved in the presentations. Recognizing their similarities, they could relate to the progress made or problems encountered by members of the different schools involved in the presentations. In addition, suggestions were made to presentors on how they might utilize their resources better, to solve some of their problems as well as accomplish some of their goals and objectives, as seen by the participants.

Attendance at the October session was excellent. Ninety-two (92) persons were in attendance from 45 colleges/universities and 3 agencies in 15 states, as indicated during registration. In many cases, entire teams from each campus attended. Evaluation questionnaires, distributed to the participatns, indicated that the In-service session had served its purpose. All of the respondents rated the conference, as a whole, good to excellent, and indicated that it provided a learning experience which few similarly structured conferences could match.

James A. Welch
Linda M. Jackson

ACKNOWLEDGEMENTS*

This October 1973 In-service Session represents the third of its kind to be sponsored by the Management Information Systems Directorate of the Institute for Services to Education, Inc. As in the past, the participants and presentors have largely determined the success of the in-service sessions. For this reason and because the October 1973 In-service Session was such an overwhelming success, the Directorate wishes to thank the persons who made it possible. To the presentors/consultants and participants, representing the various TACTICS colleges, who gave of their time and energy to make the In-service Session what it was, we extend our whole-hearted thanks. Appreviation is also extended to the MIS staff, who, as usual, worked at their best to assist in the planning and implementation of an effective program.

The following list of presentors/consultants and participants is provided so that the reader of this report may know who they are.

PRESENTORS/CONSULTANTS	INSTITUTION
George Bowie, III	Elizabeth City State University
Pauline Ferguson	Winston-Salem State University
Genel Hairston	Winston-Salem State University
William Henderson	Atlanta University Complex
Walter C. Howard	Miles College
Lloyd Howell	Knoxville College
Laurence Jacobs	Oakwood College
Elva J. Jones	Winston-Salem State University
Hilliard Lackey	Jackson State College
Roger Mikesell	Oakwood College
Ziner Reid	Elizabeth City State University
Oscar A. Rogers	Jackson State College
Doris Sawyer	Elizabeth City State University
Glenell Smoot	Tuskegee Institute
James Swimpson	Elizabeth City State University
Albert Tammany	Tuskegee Institute
George B. Tutt	Miles College
Matt Ward	Tuskegee Institute
Joseph L. White	Winston-Salem State University
Joseph S. White	Elizabeth City State University

*Funding for this In-service Session was made available through the U.S. Office of Education, Department of Health, Education, and Welfare, under the Education Professions Development Act, Section V-E.

PARTICIPANTS

John Baker, Jr.
Alabama State University

Haskell S. Bingham
Jackson State College

George F. Bowie, III
Elizabeth City State University

Jack S. Brayboy
Johnson C. Smith University

Susan H. Brooks
Wilberforce University

George W. Brown
Fayetteville State University

Vera B. Brown
Albany State College

Leonard L. Burke
Alabama State University

Mrs. Jacquelyn M. Byers
Savannah State College

Thomas Byers
Savannah State College

Lamore J. Carter
Grambling College

Alvin Collins
Savannah State College

L. C. Collins
Johnson C. Smith University

Thomas J. Crawford
South Carolina State College

A. M. Davenport, II
Southern University in New Orleans

Mack L. Davidson, Jr.
Johnson C. Smith University

Franklin D. Dyson
Tennessee State University

M. F. Dyson
Southern University in New Orleans

Charles F. Easley
Morris Brown College

Willie T. Ellis
North Carolina A&T State University

S. L. Evans
Friendship College

Pauline Ferguson
Winston-Salem State University

Christopher T. Fisher
Virginia Union University

David W. Friedrichs
Shaw College at Detroit

William F. Furr
Southern University in New Orleans

Franklin Gayles
Virginia Union University

Charles F. George
Knoxville College

Benjamin H. Groomes
Albany State College

Genel Hairston
Winston-Salem State University

Emily H. Harper
Livingstone College

James E. Harris
LeMoyne-Owen College

Charles L. Hayes
Albany State College

Claire Hibbert
United Negro College Fund

Billie J. Hooker
Office for the Advancement of the Public Negro Colleges

W. C. Howard
Miles College

Lloyd R. Howell
Knoxville College

Arthur F. Jackson
North Carolina A&T State University

Laurence Jacobs
Oakwood College

Patricia Johnson
Albany State College

David Jones
Saint's College

Elva J. Jones
Winston-Salem State University

Dan Joslyn
Clark College

E. J. Junior, Jr.
Meharry Medical College

Mildred B. Kennedy
Miles College

Charles L. Knight
Clark College

E. L. Kirby, Jr.
Albany State College

Hilliard L. Lackey
Jackson State College

Dwight Lahr
Savannah State College

Alfred Lang
Knoxville College

Virginia L. Lewis
Huston-Tillotson College

J. A. Lockett
Johnson C. Smith University

Edward Lundin
Spelman College

Arenia Mallory
Saint's College

Sister Patricia Marshall
Xavier University

Richard McCoy
Savannah State College

Mary McKinney
Jarvis Christian College

Theophilus E. McKinney, Jr.
United Negro College Fund

Annie Mai Miller
Lane College

Roger Mikesell
Oakwood College

Leonard W. Morgan
Paul Quinn College

Michael K. Neal
Ohio State University

Benedict Njoku
Rust College

Oliver L. Norrell, Jr.
Cheyney State College

Burnetta Pearson
Lane College

Dayton C. Pegues
Livingstone College

Mary H. Platt
Johnson C. Smith University

Gwendolyn H. Porter
Hampton Institute

L. E. McMurtry-Reed
Utica Junior College

Annie T. Reid
Bowie State College

Ziner J. Reid
Elizabeth City State University

Edward E. Riley, Jr.
Spelman College

Imogene Robinson
Bowie State College

O. A. Rogers, Jr.
Jackson State College

Doris G. Sawyer
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M. F. Shute
Bennett College

Bessie F. Simpson
Hampton Institute

Lillie K. Singleton
Lawson State Junior College

Bernard S. Smith
United Board for College Development

Glennell Strum Smoot
Tuskegee Institute

Agal E. Spraggins
St. Augustine's College

James Swimpson
Elizabeth City State University

Albany S. Tammany, III
Tuskegee Institute

RuVenia S. Tolen
Edward Waters College

John E. Toppins
Stillman College

George B. Tutt
Miles College

Charles Varner, Jr.
Albama State University

Matt R. Ward, III
Tuskegee Institute

Joseph L. White
Winston-Salem State University

Joseph S. White
Elizabeth City State University

John Williams
Knoxville College

Rudolph A. Williams
Kittrell College

Martha W. Wilson
Savannah State College

WHAT FOLLOWS ARE THE INDIVIDUAL REPORTS SUBMITTED BY EACH MODERATOR BASED ON THE TOPIC PRESENTED BY THEM IN THE SESSIONS.

"Step-By-Step Development of a Small College Information System"

Presentor(s) Joseph L. White, Moderator
Ms. Pauline Ferguson
Mrs. Genel Hairston
Mrs. Elva J. Jones

Winston-Salem State University
Winston-Salem, North Carolina

SUBJECT:

Step-By-Step Development of a small College Information System

TEAM MEMBERS:

Mrs. Elva J. Jones, Instructor of Computer Programming

Mrs. Genel Hairston, In Charge of Student Personnel Computer Files

Ms. Pauline Ferguson, In Charge of Student Aid, Student Payrolls, Alumni Records, Library Inventory and all Miscellaneous Applications. Really our girl Friday.

Mrs. Evelyn H. Henighan, Computer Programmer (Not Present)

Joseph L. White, Data Processing Manager

The members of our M.I.S. Team were chosen because of their knowledge of the flow of the different types of information to and from the University Computer Center.

TEAM OBJECTIVE:

To develop an information center at Winston-Salem State University that could truly be defined as a complete information system.

We would like to share with you:

1. Some things about our Institution;
2. Tell you how you can get into electronic data processing at your institution for around $600.00 rental per month.
3. To show, as the result of processing data with data processing equipment renting for only $600.00, how many reports can be derived as by-products.
4. To share with you how we made our changeover from unit record equipment to the small 360/20 System.
5. To talk about some of the applications we now have on with the system.
6. And to share with you some of our plans for the future development of our system.

TO DISCUSS WITH YOU

7. Our information flow;
8. Show you some of our reports;
9. Pass out to you a copy of some of our major forms for comments and evaluation;
10. Have an open discussion on what you are doing at your institutions that we can help you with, or what you feel might be of help to us in developing our information system.

To begin, I would like to tell you a little about our institution.

Winston-Salem State is a small Liberal Arts University with a total enrollment of 1,895 students for the 1972-73 school year. The enrollment for the Fall Semester of the 1973-74 school year is 1,653. Of this total, 934 are classified as boarding students.

Majors are offered in the following fields:

Education
Liberal Arts
Business
Nursing

Natural Science
Social Science

Winston-Salem State University is a well-rounded institution of which the faculty, staff and students are very proud. We all take an active part in improving the conditions as they exist at the University.

It is well known for its fine basketball team, and especially for sending Earl "The Pearl" Monroe to the Pros.

It is also known for its famous Basketball Coach C.E. "Bighouse" Gaines, who is the third winningest coach in the history of basketball.

So much for "tooting our own horn".

Winston-Salem State University got its first Data Processing equipment in 1964. However, it was not until the fall of 1966 that it began to develop its information system.

The development started with:

One 082 Sorter;
One 402 Accounting Machine;
One 514 Reproducer;
One 085 Collator;
One 026 Key Punch Interpreter;
One 056 Verifier;
Later a 602 Calculator was added.

This equipment was used to process many of the reports that are now being processed on the small 360/20 8K Card System.

I would like to point out that although when one talks about developing an information system, automatically we think that a computer is needed. I agree that as you develop your system one will be needed, but there are many college applications that can be processed using the equipment that we have shown you.

This equipment, although not as fast, and with its limitations, is a step in the right direction.

ADVANTAGES

1. It is faster, more flexible and more accurate than a manual system;
2. Also much cheaper than s small computer system;
3. It gives small colleges who might not be financially able to rent or lease their own computer system, limited electronic automatic data processing capabilities at an economical cost.

The combination you just saw costs approximately $600.00 per month. If you are in the market for this type of equipment it would help to contact a variety of vendors to see just what each one has to offer. Companies such as T.L.W. Company here in Atlanta would be an ideal place to start.

4. Many times businesses in your communities will have this type of equipment available and will be willing to donate it to an institution so they can use it as a tax write-off.

I would like to share with you some of the applications that were put on at Winston-Salem State University using this type of equipment.

Course and Class Admissions Cards
Add and Drop Reports
Class Rolls, Grades, and Grade Labels
Graduating Seniors' Class Rolls
Student Schedules
Daily Registration Enrollment Totals
Student Payrolls
Student Statistical Reports
Student Address Listing (Permanent and Local)
Student Accounts Receivable Report

You will find that by using electronic data processing equipment whether the type just shown, or some type of computer system, that many times information desired, but not feasible manually become readily available. Oftentimes this information is a by-product of another report or data gathered for another report.

By changing the data around you are able to get the desired information in the desired format.

An example of what I am talking about as a by-product:

Using the course cards, we run the class rolls for each class with the student I.D. number and name.

For the Spring Semester each year, we are able to separate the course cards of graduating seniors from the non-graduating students' course cards and run official class rolls for graduating seniors only.

This has several advantages:

1. A control for getting senior grades in on time.
2. Allows us to know a week in advance who is to graduate.
3. Allows graduates-to-be to have a copy of their final grade sheets in their hands three working days before graduation.
4. Allows graduates to have a complete transcript of their grades sent to prospective employers by date of graduation.

This may seem like a small problem to solve, but if you have to work directly with the problem or if you were a senior that was on the borderline, you would understand the importance of this simple operation. Graduating Seniors' Official Class Rolls came about without really any extra work or time being spent.

Other examples are Student Payroll Checks, Quarterly FICA Report, and W-2 Forms. Once we started doing the student payroll, it was very simple to take the same cards and in about 10 minutes run the checks for 650 students.

This, if being done manually, would take at least 16 hours, or if sent out to a bank or outside computer center would cost 5 to 10 cents a check or more.

The Quarterly FICA Report becomes also a by-product, because it is just a matter of taking the payroll cards for the 3 month period and sorting them together and running the report. Yet manually, this would be a time consuming operation.

W-2 Forms become a by-product of your quarterly FICA report. For each person you would have a Quarterly FICA summary card for each of the four quarters worked and it is a simple matter to put them together and come up with the needed data for the W-2 forms.

Student local and permanent address labels for mailing is another by-product. Once the address information is punched into cards, it can be used to run address labels instead of having someone to spend hours typing them.

A little nicety is the addresses can also be broken down by classification and the President or Advisor of each class can have a copy for class contact or labels for mailing.

By Religion for the Chaplain
In alpha order by parent for reference

There are many other jobs that when done manually allow no ready way to get a by-product. However, with good planning, electronic data processing equipment can most of the time give you the additional information desired.

Our change-over from what we call unit record equipment to the small 360/20 8K card system was made after doing a study to decide:

1. What the University wanted and needed to have done?
2. If a system for the amount of money available could be leased that would fulfill the answer to the previous question?
3. What would be the cost for the center to be converted from unit record equipment to the new system?
4. If there would be a need for additional personnel?
5. What jobs would have priority in being added?
6. How long would the conversion take?
7. What would be the best time for the conversion to take place?
8. If the small system being leased could be expanded for future growth?
9. How much training would be needed by the center personnel?

We were lucky to have a part-time instructor who knew the computer language of the system we were going to lease, and this allowed us to have all of our major programs ready when our system was put into operation.

Recommendation: If you are planning to lease your own system, it would be good to look around to see if there is someone in your town who can assist you with your initial programs; this will save you both time and money.

We still have on all the jobs we had using the other equipment, but almost all have been changed to give more needed information and the time needed to produce this information has been greatly decreased.

Many new applications have been added that were of vital need to the University to assist the administration in decision-making.

Also, some jobs that were not feasible before with the old system and therefore had to be done manually, making them history before they were available, now become time-saving, current information.

The new system has greatly curtailed overtime for the Computer Center, the Registrar's Office and the Business Office.

ADDITIONAL APPLICATIONS THAT HAVE BEEN ADDED

****Spread of Student Semester Charges****

This job was always a manual nightmare for the Business Office because of the time it took at a very busy period, yet it also was a must to get done. It lead to over 50 hours of overtime. Now the entire job takes only 2 1/2 hours.

Some of the other applications that were added include:

Student Aid Timesheets
Library Inventory
Physical Inventory
Maintenance Vehicle Report
Alumni Records
Space Utilization
Book Inventory
Recruiting Report
Book Store Charges

With the old equipment, it took 20 hours to process the grade report. With the Computer system, this time has been decreased to three hours.

I could go on and on about the blessings of our step up to the small computer system, and the improvement it has made in the administrative functions of our institution.

FUTURE PLANS

Our plans for the future are the continued development and expansion of our information system.

This fiscal year the computer center received an increase of $34,000 in its budget.

This money is being used to:

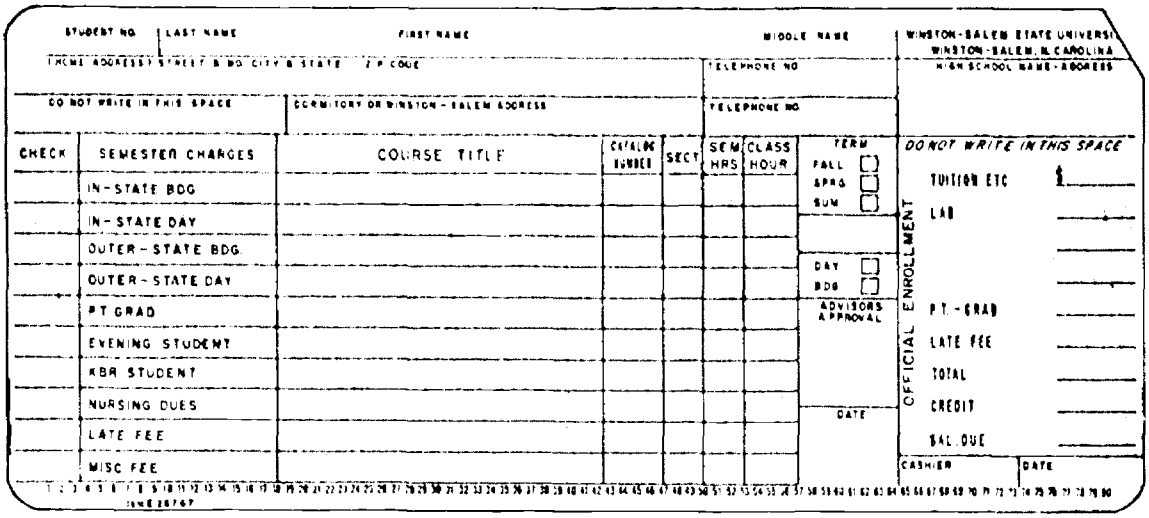
1. Upgrade our computer system from an 8K Card System to a 16K Disk System with 5.7 million bytes of magnetic storage. The new system is now on order.
2. To hire a full-time programmer. (Which we have done)
3. To lease a terminal for instruction. (Thus leaving more computer time for administrative data processing)
4. To continue our participation in M.I.S., so that we might have its assistance in our development in the future as we have in the past. (You can see we have been indoctrinated.)

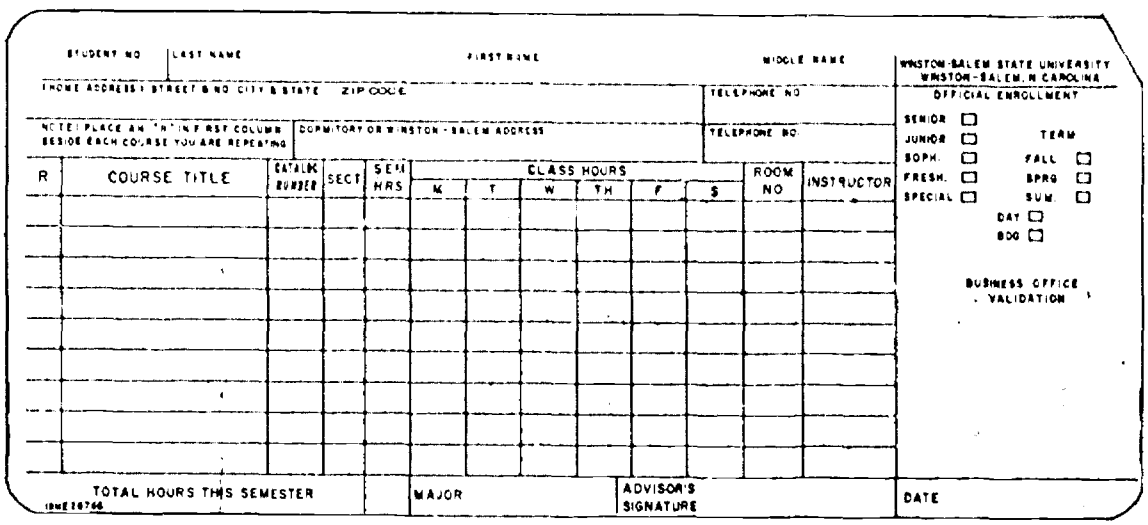
We would like to share with you some of the applications we plan to put on with our step up to magnetic storage.

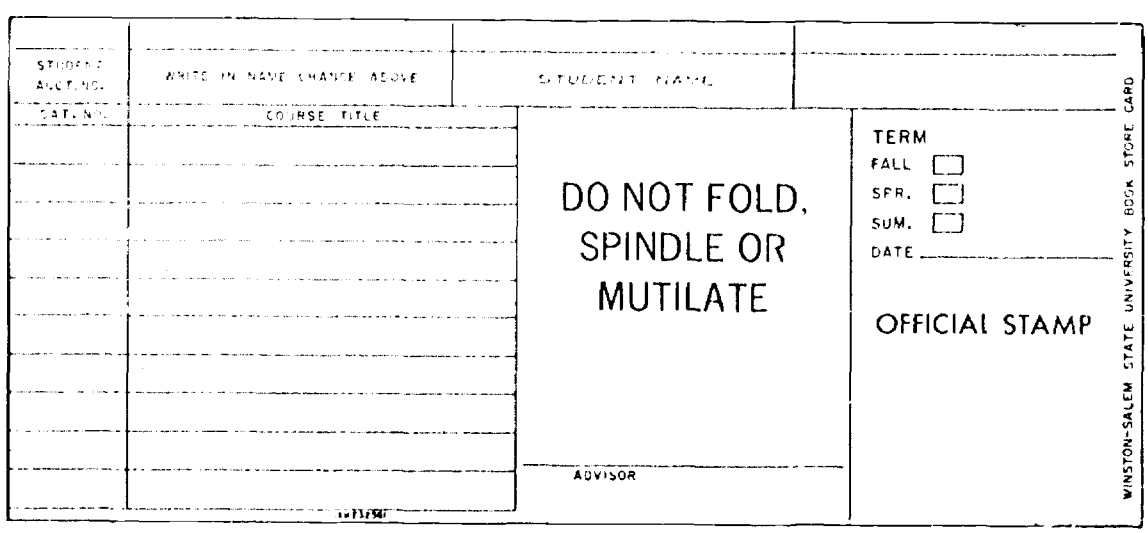
School Budget
Course Master Schedule
Library Circulation
Student Transcript Information
Faculty and Staff Information
Admissions Information

1. INFORMATION FLOW
   Show Chart and Explain
2. We have brought along copies of some of our major reports that you might be interested in seeing. They will be over on the table and the last 10 minutes of this presentation will be spent letting you browse through them and we will be around to answer your questions or to take suggestions on how they may be improved.
3. At this time we would like to pass out a booklet of the major pre-printed forms at Winston-Salem State University and share with you how they are used by the computer center.
   NUMBER OF PEOPLE
   COURSE CARD

Winston-Salem State University
Major Pre-Printed Forms


STUDENT NO.
LAST NAME
FIRST NAME
MIDDLE NAME
WINSTON-SALEM STATE UNIVERSITY
WINSTON-SALEM, N. CAROLINA
HOME ADDRESS: STREET & NO. CITY & STATE ZIP CODE
TELEPHONE NO.
HIGH SCHOOL NAME-ADDRESS
DO NOT WRITE IN THIS SPACE
DORMITORY OR WINSTON-SALEM ADDRESS
TELEPHONE NO.
CHECK
SEMESTER CHARGES
IN-STATE BDG
IN-STATE DAY
OUTER-STATE BDG
OUTER-STATE DAY
PT GRAD
EVENING STUDENT
KBR STUDENT
NURSING DUES
LATE FEE
MISC FEE
COURSE TITLE
CATALOG NUMBER
SECT
SEM HRS
CLASS HOUR
TERM
FALL
SPRG
SUM
DAY
BDG
ADVISORS APPROVAL
DATE
DO NOT WRITE IN THIS SPACE
OFFICIAL ENROLLMENT
TUITION ETC
LAB
P.T.-GRAD
LATE FEE
TOTAL
CREDIT
BAL DUE
CASHIER
DATE


STUDENT NO.
LAST NAME
FIRST NAME
MIDDLE NAME
WINSTON-SALEM STATE UNIVERSITY
WINSTON-SALEM, N CAROLINA
OFFICIAL ENROLLMENT
HOME ADDRESS: STREET & NO. CITY & STATE ZIP CODE
TELEPHONE NO.
NOTE: PLACE AN "X" IN FIRST COLUMN BESIDE EACH COURSE YOU ARE REPEATING
DORMITORY OR WINSTON-SALEM ADDRESS
TELEPHONE NO.
SENIOR
JUNIOR
SOPH.
FRESH.
SPECIAL
TERM
FALL
SPRG
SUM
DAY
BDG
BUSINESS OFFICE VALIDATION
R
COURSE TITLE
CATALOG NUMBER
SECT
SEM HRS
CLASS HOURS
M
T
W
TH
F
S
ROOM NO
INSTRUCTOR
TOTAL HOURS THIS SEMESTER
MAJOR
ADVISOR'S SIGNATURE
DATE


STUDENT ACCT. NO.
WRITE IN NAME CHANGE ABOVE
STUDENT NAME
CAT. NO.
COURSE TITLE
DO NOT FOLD, SPINDLE OR MUTILATE
ADVISOR
TERM
FALL
SPR.
SUM.
DATE
OFFICIAL STAMP
WINSTON-SALEM STATE UNIVERSITY BOOK STORE CARD

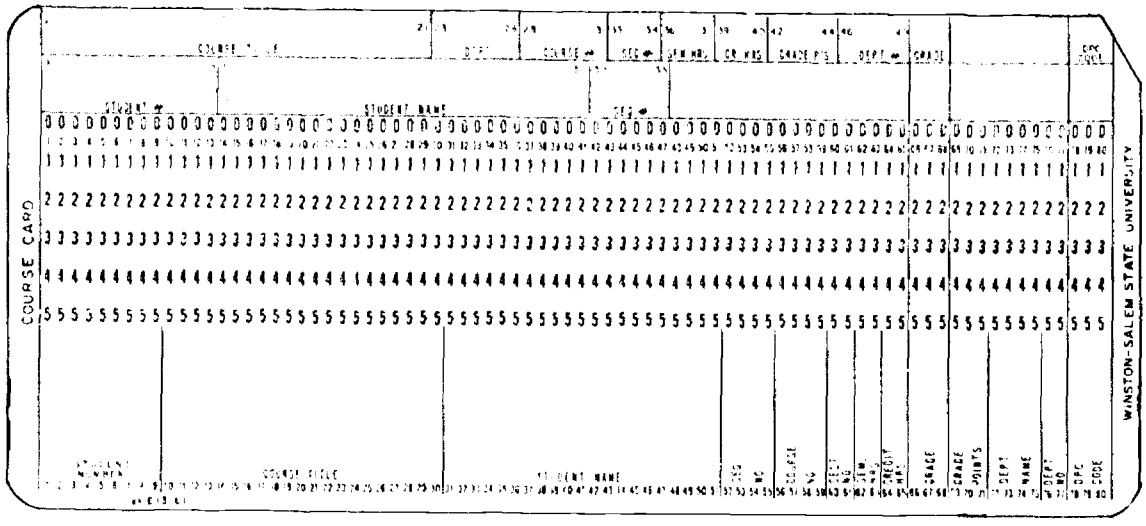
STUDENT ACCT. NO. | STUDENT NAME | Advisor No.

PERMIT TO ENROLL

THIS CARD MUST BE PRESENTED AT REGISTRATION

FRANCES R. COBLE
REGISTRAR
WINSTON-SALEM STATE UNIVERSITY

DO NOT FOLD, SPINDLE OR MUTILATE



COURSE TITLE | DEPT. | COURSE # | SEC. # | SEM. HRS.

CLASS ADMISSION CARD

CLASS ADMISSION CARD

STUDENT NAME LAST FIRST MIDDLE STUDENT NUMBER

THIS CARD ADMITS ABOVE NAMED STUDENT ONLY TO THE COURSE AND SECTION INDICATED. NO STUDEN MAY BE ADMITTED WITHOUT SUCH A COURSE PERM

CLASS ADMISSION CARD
WINSTON-SALEM STATE UNIVERSITY

STUDENT NAME

GRADE AVERAGE FOR COURSE ☐ D ☐ F

REASON/S FOR UNSATISFACTORY WORK (CHECK ONE OR MORE)

1 ☐ FAILURE TO DO REQUIRED WORK
2 ☐ LACK OF CLASS PARTICIPATION
3 ☐ POOR STUDY HABITS
4 ☐ FAILURE TO SEEK EXTRA HELP

DATE INSTRUCTOR

WINSTON SALEM STATE UNIVERSITY WINSTON SALEM, N.C. 27102

STUDENT NAME MAJOR STUDENT NUMBER MO. YR.

COURSE TITLE	DEPT NAME	COURSE NUMBER	SECT	GRADE	REASONS

CODE FOR REASONS
1 FAILURE TO DO REQUIRED WORK
2 LACK OF CLASS PARTICIPATION
3 POOR STUDY HABITS
4 FAILURE TO SEEK EXTRA HELP

MID-TERM GRADE REPORT – COUNSELOR COPY

WINSTON SALEM STATE UNIVERSITY WINSTON SALEM, N.C. 27102

STUDENT NAME MAJOR STUDENT NUMBER MO. YR.

COURSE TITLE	DEPT NAME	COURSE NUMBER	SECT	GRADE	REASONS

CODE FOR REASONS
1 FAILURE TO DO REQUIRED WORK
2 LACK OF CLASS PARTICIPATION
3 POOR STUDY HABITS
4 FAILURE TO SEEK EXTRA HELP

MID-TERM GRADE REPORT – ADVISOR COPY

8801

WINSTON-SALEM STATE UNIVERSITY
WINSTON-SALEM, NORTH CAROLINA

STUDENT IDENTIFICATION CARD ISSUED TO

STUDENT SIGNATURE

ID NUMBER

THIS CARD IS ISSUED FOR YOUR USE ONLY. REPORT ITS LOSS TO THE BURSAR'S OFFICE. IF FOUND, MAIL TO THE BUSINESS OFFICE. IF A STUDENT WITHDRAWS FROM THE UNIVERSITY, THIS CARD MUST BE RETURNED TO THE BUSINESS OFFICE.

WINSTON - SALEM STATE UNIVERSITY - WINSTON - SALEM, N.C.

OFFICIAL GRADE REPORT

INSTRUCTOR	COURSE TITLE	DEPT	COURSE NO	SECT	MO	YR

STUDENT NO	STUDENT NAME	GRADE		HRS	REMARKS
1			1		
2			2		
3			3		
4			4		
5			5		
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7			7		
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57			57		

OFFICIAL GRADE REPORT

DEPT	COURSE NO	SECT

STUDENT NO	GRADE
1	1
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3	3
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5	5
6	6
7	7
8	8
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51	51
52	52
53	53
54	54
55	55
56	56
57	57

DATE	A	B	C	D	F	I	S	U	P	W	OTHER	TOTAL

TEXT BOOK

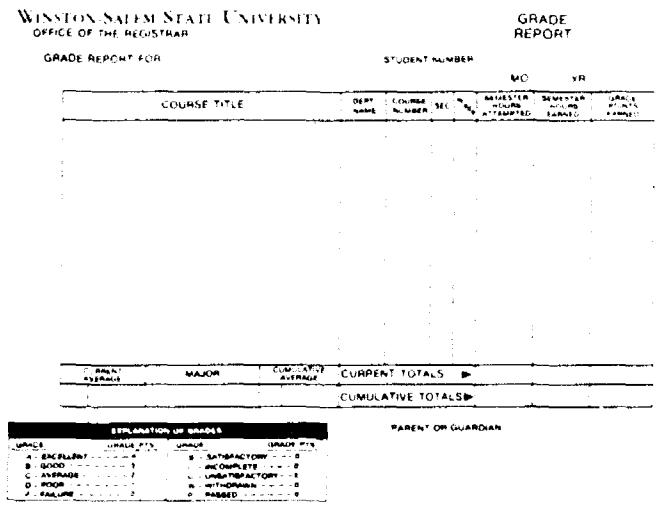
AUTHOR(S) OF TEXT BOOK

DEAN

SIGNATURE OF INSTRUCTOR

SIGNATURE OF INSTRUCTOR

ERIC



WINSTON-SALEM STATE UNIVERSITY
OFFICE OF THE REGISTRAR

GRADE REPORT

GRADE REPORT FOR

STUDENT NUMBER

MO YR

COURSE TITLE	DEPT NAME	COURSE NUMBER	SEC	%	SEMESTER HOURS ATTEMPTED	SEMESTER HOURS EARNED	GRADE POINTS EARNED

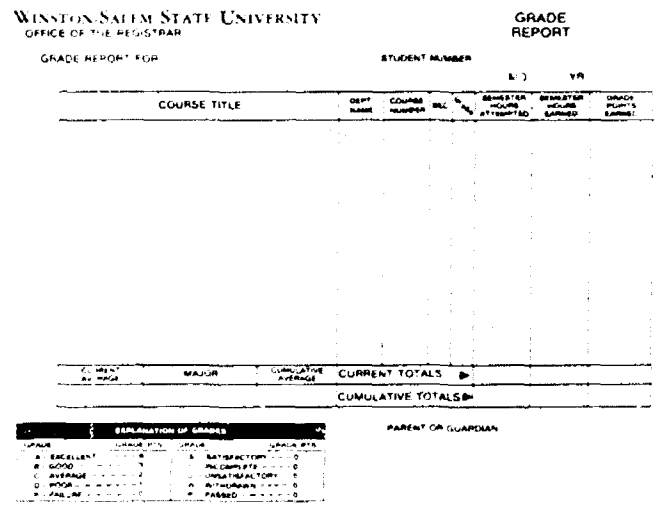
CURRENT AVERAGE	MAJOR	CUMULATIVE AVERAGE	CURRENT TOTALS ▶		
			CUMULATIVE TOTALS ▶		

EXPLANATION OF GRADES

GRADE	GRADE PTS	GRADE	GRADE PTS
A - EXCELLENT	4	S - SATISFACTORY	0
B - GOOD	3	I - INCOMPLETE	0
C - AVERAGE	2	U - UNSATISFACTORY	0
D - POOR	1	W - WITHDRAWN	0
F - FAILURE	0	P - PASSED	0

PARENT OR GUARDIAN

OFFICE OF REGISTRAR



WINSTON-SALEM STATE UNIVERSITY
OFFICE OF THE REGISTRAR

GRADE REPORT

GRADE REPORT FOR

STUDENT NUMBER

MO YR

COURSE TITLE	DEPT NAME	COURSE NUMBER	SEC	%	SEMESTER HOURS ATTEMPTED	SEMESTER HOURS EARNED	GRADE POINTS EARNED

CURRENT AVERAGE	MAJOR	CUMULATIVE AVERAGE	CURRENT TOTALS ▶		
			CUMULATIVE TOTALS ▶		

EXPLANATION OF GRADES

GRADE	GRADE PTS	GRADE	GRADE PTS
A - EXCELLENT	4	S - SATISFACTORY	0
B - GOOD	3	I - INCOMPLETE	0
C - AVERAGE	2	U - UNSATISFACTORY	0
D - POOR	1	W - WITHDRAWN	0
F - FAILURE	0	P - PASSED	0

PARENT OR GUARDIAN

DEAN

WINSTON-SALEM STATE UNIVERSITY **WINSTON-SALEM, N. C. 27102**

NAME OF DEPT ENCY	OPC CODE	TIME BEGINNING	TIME ENDING

STUDENT	TOTAL AMOUNT OF AID	RATE OF PAY	THIS MONTH BALANCE FORWARD	MAX HR POSS TO WK THIS MO	MAX AMOUNT FOR THIS MO

	RATING		SUN	MON	TUES	WED	THURS	FRI	SAT	WK TOTAL	MO TOTAL
		1ST WK									
		2ND WK									
		3RD WK									
		4TH WK									
		5TH WK									

STUDENT	TOTAL AMOUNT OF AID	RATE OF PAY	THIS MONTH BALANCE FORWARD	MAX HR POSS TO WK THIS MO	MAX AMOUNT FOR THIS MO

	RATING		SUN	MON	TUES	WED	THURS	FRI	SAT	WK TOTAL	MO TOTAL
		1ST WK									
		2ND WK									
		3RD WK									
		4TH WK									
		5TH WK									

STUDENT	TOTAL AMOUNT OF AID	RATE OF PAY	THIS MONTH BALANCE FORWARD	MAX HR POSS TO WK THIS MO	MAX AMOUNT FOR THIS MO

	RATING		SUN	MON	TUES	WED	THURS	FRI	SAT	WK TOTAL	MO TOTAL
		1ST WK									
		2ND WK									
		3RD WK									
		4TH WK									
		5TH WK									

STUDENT	TOTAL AMOUNT OF AID	RATE OF PAY	THIS MONTH BALANCE FORWARD	MAX HR POSS TO WK THIS MO	MAX AMOUNT FOR THIS MO

	RATING		SUN	MON	TUES	WED	THURS	FRI	SAT	WK TOTAL	MO TOTAL
		1ST WK									
		2ND WK									
		3RD WK									
		4TH WK									
		5TH WK									

STUDENT	TOTAL AMOUNT OF AID	RATE OF PAY	THIS MONTH BALANCE FORWARD	MAX HR POSS TO WK THIS MO	MAX AMOUNT FOR THIS MO

	RATING		SUN	MON	TUES	WED	THURS	FRI	SAT	WK TOTAL	MO TOTAL
I HEREBY CERTIFY THAT THIS IS A TRUE STATEMENT OF THE HOURS WORKED BY EACH STUDENT LISTED AND THAT EACH STUDENT LISTED HAS PERFORMED HIS ASSIGNED JOB IN A SATISFACTORY MANNER AND THAT NO HOURS WORKED CONFLICTED WITH CLASS HOURS		1ST WK									
		2ND WK									
		3RD WK									
		4TH WK									
SIGNATURE OF SUPERVISOR DATE		5TH WK									

DESIGNING SPECIFICATIONS TO SERVE YOUR INSTITUTION

Presentor(s) Matt Ward, Moderator
Albert Tammany

Tuskegee Institute
Tuskegee, Alabama

PART I:

TUSKEGEE INSTITUTE -- Last week Mr. Tammany and I were out in Denver at NCHEMS and the question was asked if we were repairing tractors at Tuskegee? This let me know that not everyone is cognizant of what Tuskegee Institute is. They think form the name "Institute" that we are a prep school, so let us set the record straight.

Tuskegee Institute is, by all definitions, a scientific and professional University offering 40 undergraduate degrees, 26 graduate degrees and 3 professionals – BS, BA, M/ED, MS, DVM, B/ARCH, and ADA--with a present enrollment of 3171 students. It is administratively organized with a President (Dr. L. H. Foster), Vice President Business Affairs, Vice President Academic Affairs, Vice President Student Affairs and Vice President for Development. There are 5 academic schools (Vet Med, Education, Nursing, Applied Sciences and Engineering) and a college of Arts and Sciences. In addition to its academics, there exists public service in the form of Human Resources Development Center, a 150 bed accredited hospital, a veterinary hospital and basic and professional research in the Carver Research Foundation. The school's budget is approximately 20 million dollars.

The Office of Operations Analysis and Research (OAR) is an arm of the President's Office charged with overall Institute functions to include budget preparation, systems design, organizational analysis and operational procedures. There are two computer centers. One, in the school of Engineering, contains a 32K Hewlett-Packard 2000F Time-Sharing Basic W/TTY terminals across campus. The other, in the Administrative data processing center, has an IBM System 3 model No. 10 32K with 42 M/Bytes diskpacks. Back-up is provided by Auburn University's IBM 370/155 where we run NCHEMS's Resource Requirements Prediction Model (RRPM 1.6) and other models.

The design of an information system is a process wherein no "fool-proof" rules exist which can guarantee an optimal or even satisfactory solution. It is a "creative" process which is basically dependent upon: (a) *Precise definition of the problem,* (b) Comprehensive knowledge of existing equipment and techniques, e.g., what? how? Why? and is this the *best* way?, and (c) development of alternate approaches to the problem. An information system consists of several key components: (1) people (who), (2) equipment and procedures (how), and (3) data (what). Data represents the fundamental entities which are structured by the other components into "information" reflecting data relationships in a meaningful manner. The success of an information system design lies in its ability to reflect the informational characteristics of the Institute which are structured by organizational design/operation, variety of decisions made, information sources/sinks, as well as timing. *The design should also be flexible enough to be adaptable to new demands and to anticipate these wherever possible.*

The concept of an information system implies at least the following:

a. All requirements for data accumulation, storage, analysis and dissemination for institute operations, (e.g. computer)
b. All system users be assigned appropriate priorities for access to and use of the system.
c. Same system used for Institute Operation, evaluation and planning, with procedures for several means of extracting information in flexible form to produce standard subsets of reports or specialized reports.
d. Standardization of collection and input of processing information.
e. Elimination or reduction of overlap by standardizing codes, forms, etc.
f. Central inquiry capability for all information.

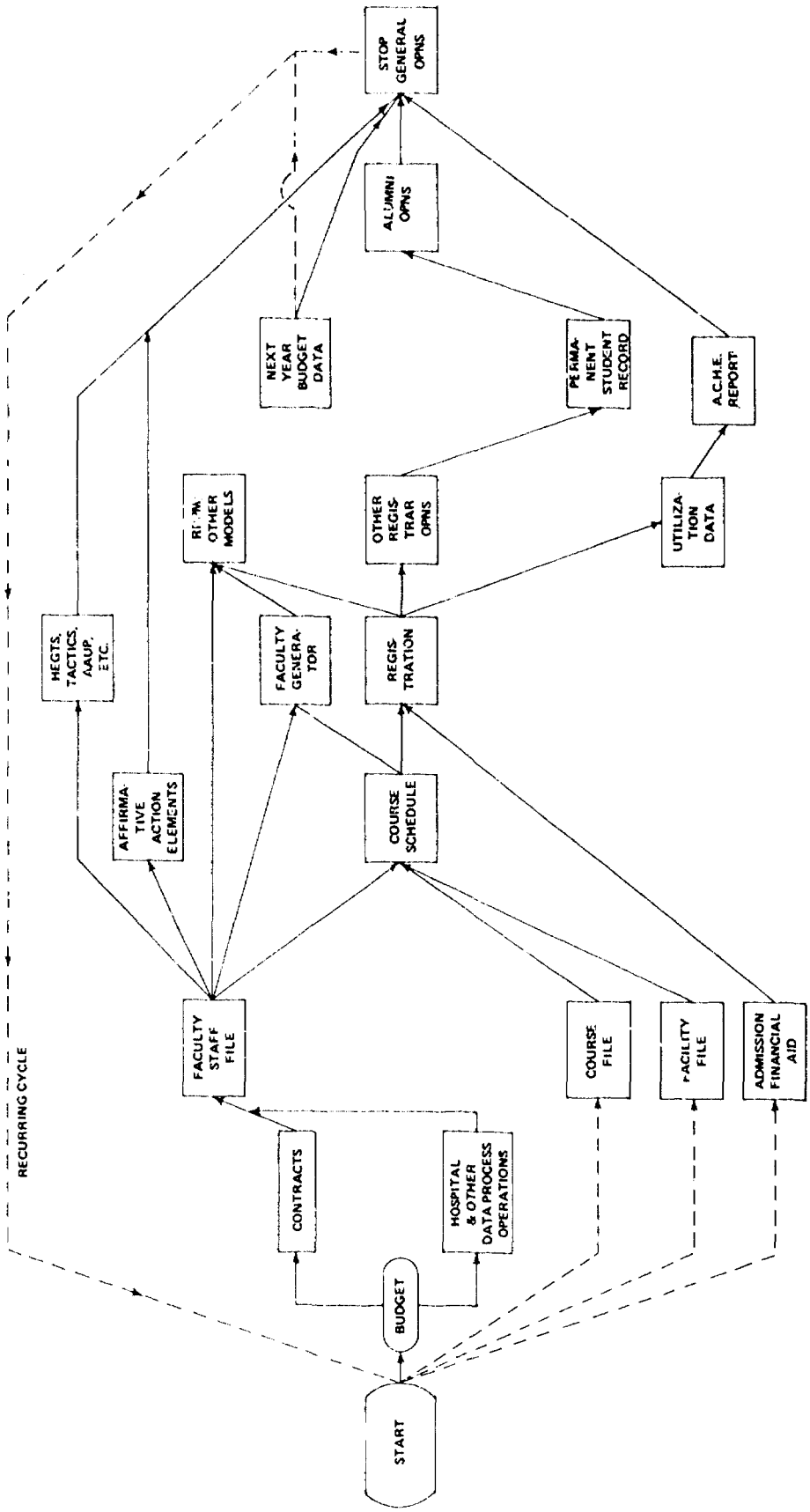
More than one approach to the design problem exists, however the following sequence is preferred:

a. Define and document decisions and information flows.
b. Design a central file structure that is comprehensive, flexible, and responsive to user demands.
c. Develop support system that:
    1. Gathers required data
    2. Has efficient record formats
    3. Has well defined procedures for maintaining and up-dating records
    4. Can handle exceptions
    5. Evaluates existing system with a view toward modification and up-date
d. Create a report generator (operating system) capable of producing reports selectively at various decision levels.

TMIS (Tuskegee Management Information System) centers on a series of "Source" (reference) files and generated applications. Some modules are illustrated on chart No. 1, "Recurring Cycle". For example, a type of source file is represented by the staff-faculty (S&F) file, displayed on chart no. 1 and further explored in detail on charts 2, 3 and 4.

Data elements available in the S&F file include those necessary for current and anticipated compliance reporting such as date of appointment, appointment type, race, sex, current salary, previous salary, job performed with percentage FTE, etc.

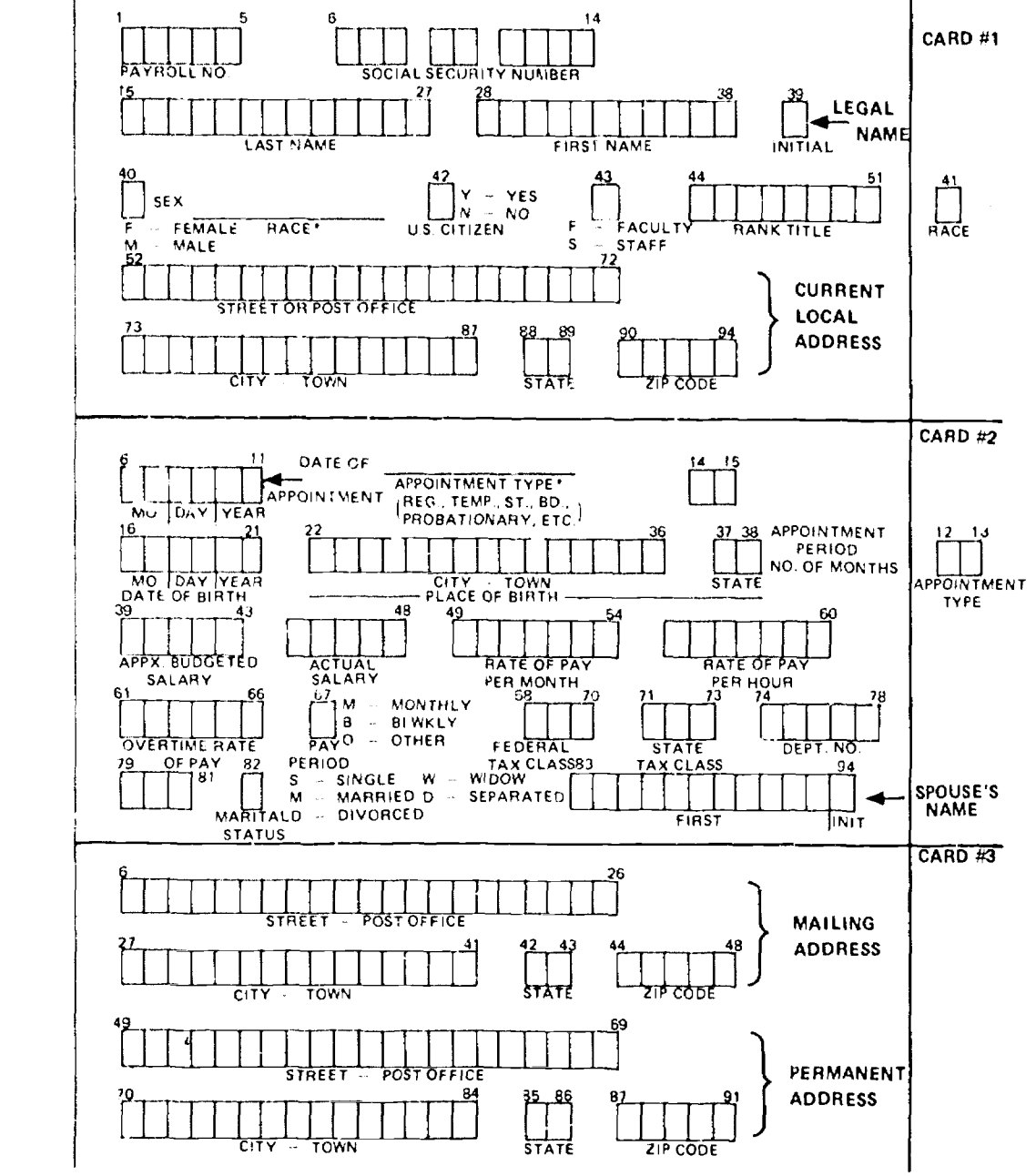
Looking at chart no. 1 again we can see that the S&F file feeds numerous other records/applications including HEGIS, AAUP, TACTICS, budget data and RRPM 1.6 (Resource Requirements Prediction Model) developed at the National Center for Higher Education Management Systems (NCHEMS). Mr. Tammany will now discuss this and other modeling efforts at Tuskegee Institute.


RECURRING CYCLE
START
BUDGET
CONTRACTS
HOSPITAL & OTHER DATA PROCESS OPERATIONS
FACULTY STAFF FILE
COURSE FILE
FACILITY FILE
ADMISSION FINANCIAL AID
AFFIRMATIVE ACTION ELEMENTS
COURSE SCHEDULE
REGISTRATION
FACULTY GENERATOR
HEGTS, TACTICS, AAUP, ETC.
RIEM OTHER MODELS
OTHER REGISTRAR OPNS
UTILIZATION DATA
NEXT YEAR BUDGET DATA
PERMANENT STUDENT RECORD
A.C.H.E. REPORT
ALUMNI OPNS
STOP GENERAL OPNS

STAFF/FACULTY RECORD

PLEASE PRINT one letter to a square, leaving one blank square between words. Abbreviate as necessary to stay within the allotted number of squares.

PLEASE DO NOT WRITE IN THE SPACE BELOW



CARD #4

6 11 MO DAY YEAR TENURE DATE

12 Y - YES N - NO INSURANCE

13 15 SHELTERED MONTHLY

16 21 MO DAY YEAR ← INITIAL EMPLOYMENT DATE

29 PREVIOUS TITLE

30 34 PREVIOUS SALARY

35 36 PERSONNEL ACTION

37 42 MO DAY YEAR DATE OF ACTION

PERSONNEL ACTION RESULTING IN CURRENT TITLE (NEW HIRE, PROMOTION, TRANSFER, ETC.)

CURRENT JOB FAMILY*

43 44 JOB FAMILY

45 46 NO OF DEPENDENTS

47 49 LICENSES (MD, RN, CPS, ETC.)

50 MILITARY STATUS (RETIRED, DISCHARGED, ETC.)

51 Y - YES N - NO EXEMPT

52 TYPE

53 55 AMOUNT

56 61 MO DAY YEAR DATE

CARD#5

EMERGENCY CONTACT

6 29 NAME

30 37 RELATIONSHIP

38 58 STREET - POST OFFICE

59 73 CITY - TOWN

74 75 STATE

76 80 ZIP CODE

81 90 AREA CODE TELEPHONE

CARD #6

APPLICANT - DO NOT RECORD IN THIS SPACE!

6 19 20 22

23 36 37 39

40 53 54 56

57 70 71 73

MANPOWER NUMBERS FTE

JOB PERFORMED

FTE 1.000 = FULL TIME 0.50 = HALF TIME

CIRCLE HIGHEST GRADE COMPLETED

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

HIGHEST GRADE 74 75

LAST SCHOOL ATTENDED

SCHOOL NAME

STATE

76 81 SCHOOL CODE

82 85 MO YEAR FROM

86 89 MO YEAR TO

DATES

90 92 DEGREE/ DIPLOMA

OTHER SCHOOLS ATTENDED

SCHOOL NAME	STATE	DATE FROM (12–15, MO/YR; 29–32, MO/YR; 46–49, MO/YR)	DATE TO (16–19, MO/YR; 33–36, MO/YR; 50–53, MO/YR)	DEGREE/ DIPLOMA (20–22; 37–39; 54–56)

DO NOT WRITE IN THIS SPACE!

6–11
23–28
40–45
SCHOOL CODES

CARD #7

58
BUILDING 59–61
ROOM 62–63
SCH/DEPT 64–66
EXT.

CAMPUS OFFICE ADDRESS*

BUILDING ____ ROOM# ____ SCHOOL/DEPT. ____ EXT. ____

67–71 LAST YEAR'S SALARY
72–76 NEXT YEAR'S SALARY
77–82 MO DAY YEAR SEPARATION DATE
SPECIALTY FIELD*

83–86 SPECIALTY FIELD

CARD #8

ADDITIONAL CONTRACTS

	DEPT.	LINE NO.	AMOUNT	PAY PERIOD	FEDERAL TAX CL.	STATE TAX CL.
#1	6–10	11–13	14–18	19	20–22	23–25
#2	26–30	31–33	34–38	39	40–42	43–45
#3	46–50	51–53	54–58	59	60–62	63–65

CARD #9

ADDITIONAL TRAINING & SKILLS

6

CONTINUE ON THIS LINE — 50

PROFESSIONAL & HONOR SOCIETIES

51

CONTINUE ON THIS LINE — 95

SIGNATURE DATE

CODED BY

ASTERISKED ENTRIES ARE TO BE KEYED FROM CODED DATA ADJACENT TO THEM OR IN THE FAR RIGHT COLUMN.

ELEMENT	FILES STAFF/FACULTY	STUDENT	ALUMNI
NAME	X	X	X
SSAN	X	X	X
SEX	X	X	X
AGE	?	?	
BIRTH DTE & PLACE	X	X	X
MARITAL STATUS	X	X	
MILITARY STATUS	X	X	
CITIZENSHIP STATUS	X	X	
RACE	X	X	X
DEPENDENTS	X	X	
EMERGENCY CONTACT (NAME, ETC.)	X	X	
CURRENT LOCAL ADDRESS	X	X	
PERM ADDRESS (HOR/GUARDIAN NAME)	X	X	X
CAMPUS OFFICE ADDRESS	X		
APPOINTMENT TITLE	X		
APPOINTMENT TYPE	X		
APPOINTMENT CODE	X		
APPOINTMENT EFFECTIVE DTE	X		
APPOINTMENT EXPIRE DTE	X		
APPOINTMENT PERCENTAGS	X		
APPOINTMENT SALARY BUDGETED	X		
APPOINTMENT PERIOD	X		
UNDERGRAD ED/INSTITUTIONS/DTES	X	X	
GRAD ED/HIGHEST/INSTITUTION/DTES	X	X	
LICENSES/CERTS/REGISTRATIONS	X	X	
ACCOUNT NR	X		
BENEFITS/TUITION, ETC., FINAN AID	X	X	
TENURE STATUS	X		
COURSE ASSIGNMENTS			
PAYROLL NR	X	X (?)	
PRIMARY MANPOWER/STUDENT NR*	X	X	
PREVIOUS COLLEGE CREDITS ACCEPTED		X	
COURSES COMPLETED & COURSES TO BE COMPLETED		X	
FOR DEGREE BY SEMESTER		X	
A. COURSE NR		X	
B. DESCRIPTION (GO TO CRSE FILE)			
C. SUBSTITUTIONS (ADD/DROP)		X	
D. LOCATION			
E. CRSE & LAB HRS			
F. CREDIT/LECT/LAB HRS		X	
G. GRADE RECEIVED		X	
H. GPA BY SEM & CUM		X	
I. INSTR (NAME & SSAN)		X	
J. FEES DUE & PAID		X	
RELIGIOUS PREF	X		
ADDITIONAL M P HRS AS NEEDED	X		
LEVEL OR CLASSIFICATION		X	
TEGISTRATION TYPE		X	
ENTRANCE TEST SCORES CEEB		X	
HIGH SCHOOL PERCENTILE RANK		X	
CLASS YEAR			X
ADVISOR		X	

*STUDENT NR – 14 DIGIT NR SHOWING MAJOR, SCHOOL

*MANPOWER NR – 14 DIGIT NR SHOWING PROGRAM, SUBPROGRAM, PROGRAM CATEGORY (DISCIPLINE), SUBCATEGORY, OCCUPATIONAL CATEGORY & SUB-

Part II:

Tuskegee Institue has incorporated into its emerging planning, programming and budgeting system (see exhibit no. 1) the student flow and cost simulation models developed by the National Center for Higher Education Management Systems (NCHEMS) at the Western Interstate Commission for Higher Education (WICHE). Adoption of the NCHEMS software resulted from dissatisfaction with the traditional planning and budgeting approach. (see exhibit no. 2)

Tuskegee wished to move from merely defining the monetary requirements of each organizational unit to relating those "dollar inputs" to the various "outputs." This kind of information is becoming increasingly important as state and federal agencies are asking educational administrators to justify output costs. NCHEMS software enabled our institution to "link resource requests directly to programs that produce outputs[1]", and subsequently put us one step closer to quantitative cost justification.

The student flow model projects enrollments by major and student level (see exhibit no. 3). This information is merged in the cost simulation model with various plans–sets of parameters such as faculty salaries, class size, support staff data, supplies expense–to forecast resource requirements. Administrators are thus able to compare the costs of various plans and consider these costs in relation to their anticipated benefits. The cost simulation model also generates a traditional budget showing the distribution of dollars across the various departments. (see exhibit no. 4)

The NCHEMS student flow model uses trasitional probabilities in forecasting the flow of students between majors from year 1 through year 4. For example, in exhibit no. 5, 100 "A" majors enroll as Freshmen. By the end of the year, 10 have dropped out of school, 9 entered major "B", and 27 entered major "C". Over the course of four years only 34 students will actually finish as "A" majors. This information may be merged with an "in-house" correlation and regression analysis program to pinpoint *who* drops out or changes major and *why*. The overall result is that the administration can better understand what is happening to different groups of students and make the appropriate changes/ modifications.

The principal constituent of the NCHEMS cost simulation model is the Induced Course Load Matrix (ICLM). This matrix displays the number of credit hours in departments/ disciplines taken by the *average* student enrolled in a particular program/major. In exhibit no. 6, the average "B" major can be expected to enroll in 3.2 hours in department no. 1, 4.5 hours in department no. 2, 5.7 hours in department 3, and 1.6 hours in department 4. If there are 100 type "B" majors, then one can expect 320 hours of Dpeartment 1 instruction to be consumed by type "B" majors. Similarly, for any given set of enrollment projections the total estimated credit hour load requirement can be determined.

The program credit hour demands, summed across the departments, yield the total credit hours required. At this time other planning parameters may be merged into the matrix (e.g., class size, faculty workloads, support staff ratios, expense formulas, faculty rank mix), to produce the instructional cost per department (see exhibit no. 7). These departmental costs are then distributed to the various degree programs in direct proportion to the number of credit hours drawn (consumed) from each department (see exhibit no. 8).

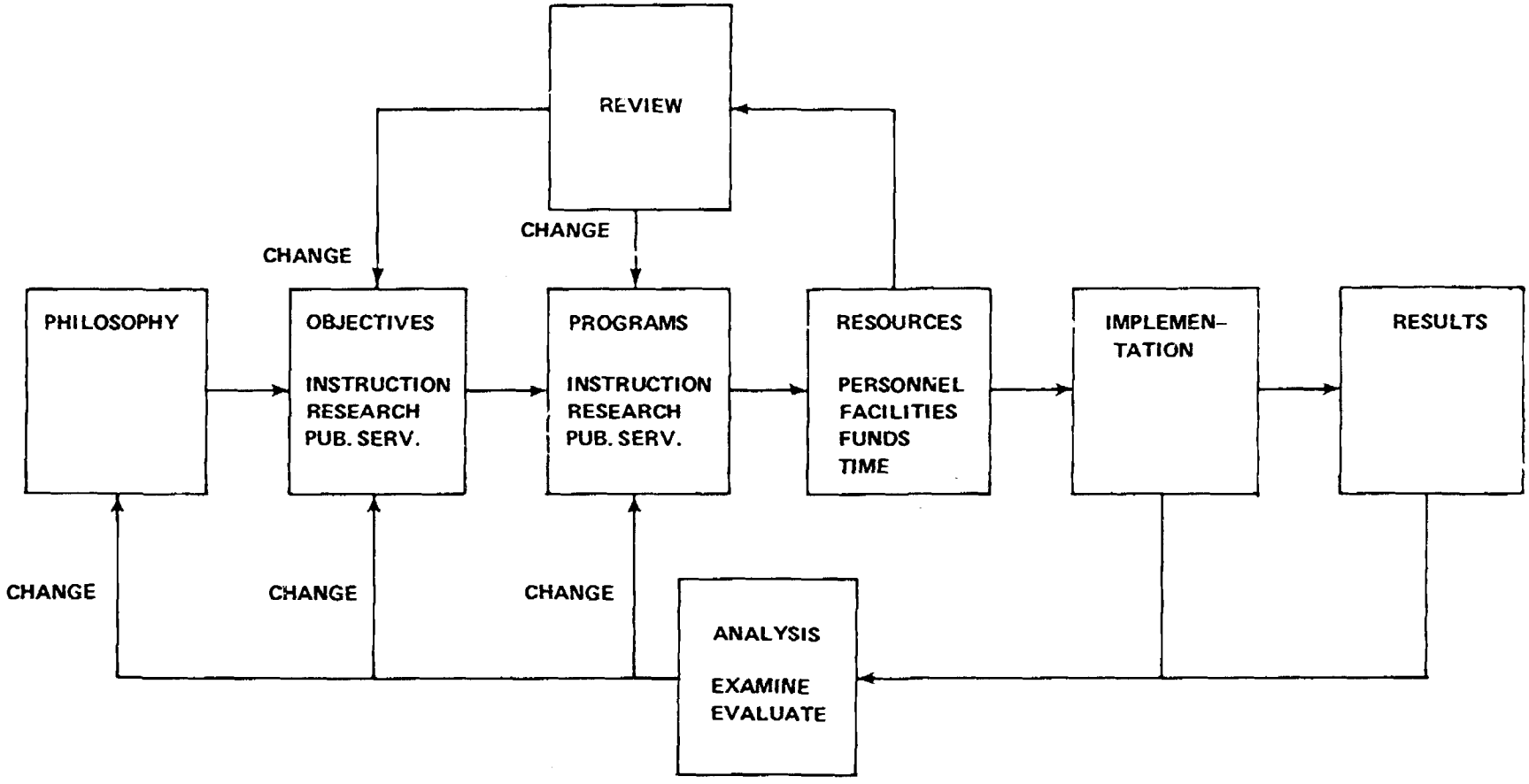
Exhibit no. 9 shows how the various NCHEMS software fit together. The ICLM and Faculty Data Generator may be implemented independently, or in conjunction with the

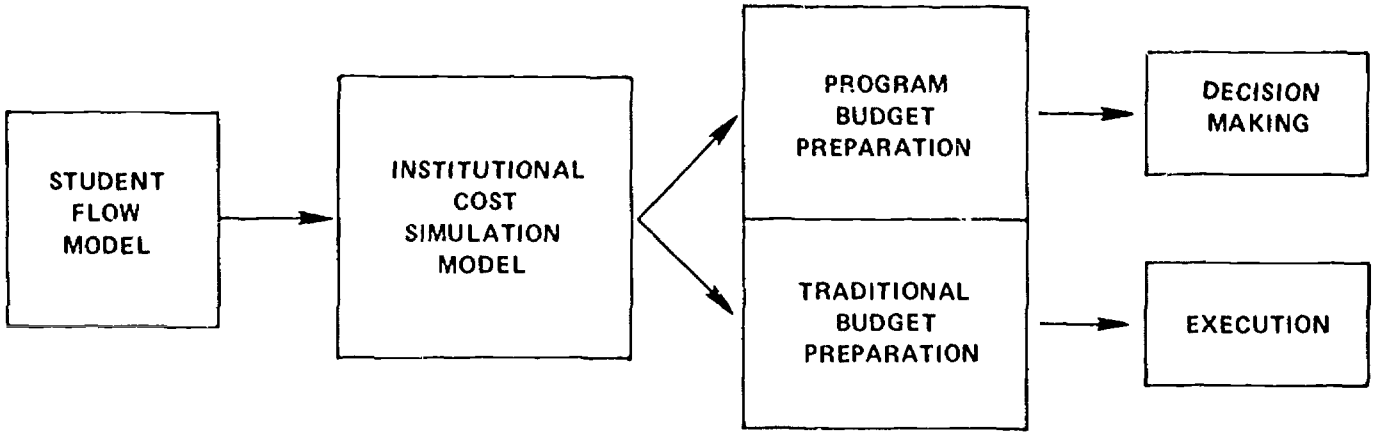
1. Huff, Rob. A. and Manning, Charles W., *Higher Education Planning and Management Systems – A Brief Explanation*, Boulder, Western Interstate Commission for Higher Education, January 1973, p. 3.

RRPM 1.6. Complete implementation requires the allocation of noninstructional dollars across the cost centers as defined by the HEGIS taxonomy.

The NCHEMS software costs only $50 per program (eg, ICLM, RRPM 1.6). Implementation costs at Tuskegee were approximately $4000.00. The core requirements of the NCHEMS software exceeded Tuskegee's capabilities; all implementation occurred at Auburn University's IBM 360/50 (now a IBM 370/155). The computers at Tuskegee were utilized only in data editing for later input. The requirement of an in-house computer capability is, therefore, not mandatory. For further information regarding the NCEHMS software contact:

Mr. Gary Gamso
Staff Associate
NCHEMS at WICHE
P.O. Drawer P
Boulder, Colorado 80302
(303) 449-3333


REVIEW
CHANGE
CHANGE
PHILOSOPHY
OBJECTIVES
INSTRUCTION
RESEARCH
PUB. SERV.
PROGRAMS
INSTRUCTION
RESEARCH
PUB. SERV.
RESOURCES
PERSONNEL
FACILITIES
FUNDS
TIME
IMPLEMEN-
TATION
RESULTS
CHANGE
CHANGE
CHANGE
ANALYSIS
EXAMINE
EVALUATE


STUDENT FLOW MODEL
INSTITUTIONAL COST SIMULATION MODEL
PROGRAM BUDGET PREPARATION
TRADITIONAL BUDGET PREPARATION
DECISION MAKING
EXECUTION

TWO VIEWS OF AN INSTRUCTIONAL PROGRAM BUDGET: AN EXAMPLE

Organizational Unit Line-Item Budget for Execution and Control

History Department	
Academic Salaries	$ 349,087
Support Staff Salaries	35,733
Supplies and Expenses	4,428
Equipment	2,864
Other Expenses	5,148
TOTAL	$ 397,260
Biology Department	
Academic Salaries	$ 495,365
Support Staff Salaries	59,629
Supplies and Expenses	7,232
Equipment	4,609
Other Expenses	7,516
TOTAL	$ 341,136
Fine Arts Department	
Academic Salaries	$ 299,778
Support Staff Salaries	24,935
Supplies and Expenses	7,808
Equipment	3,974
Other Expenses	4,641
TOTAL	$ 341,136
Business Department	
Academic Salaries	$ 418,892
Support Staff Salaries	32,888
Supplies and Expenses	2,889
Equipment	2,985
Other Expenses	7,111
TOTAL	$ 464,765

TOTAL DIRECT INSTRUCTIONAL COST–$1,777,512

54.6% – $216,904

9.6% – $38,137

10.7% – $42,507

25.1% – $99,712

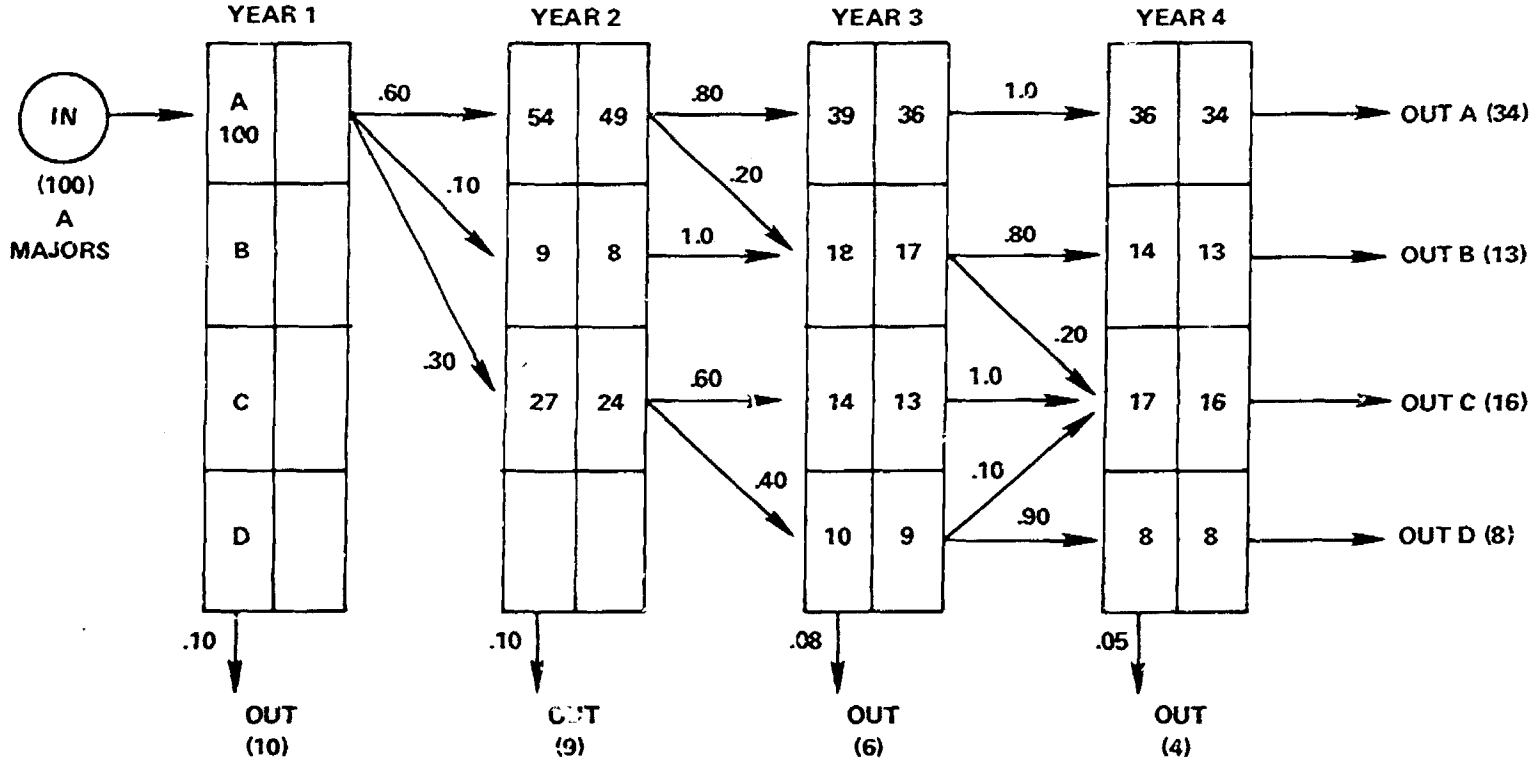
Instructional Program Budget for Planning and Decision Making

History Department	
Lower Division	$ 111,327
Upper Division	209,656
Graduate Division	88,619
TOTAL	$ 409,602
Biology Department	
Lower Division	$ 141,340
Upper Division	184,041
Graduate Division	141,974
TOTAL	$ 467,355
Fine Arts Program	
Lower Division	$ 83,918
Upper Division	88,487
Graduate Division	43,048
TOTAL	$ 215,453
Business Program	
Lower Division	$ 153,619
Upper Division	301,973
Graduate Division	229,510
TOTAL	$ 685,102

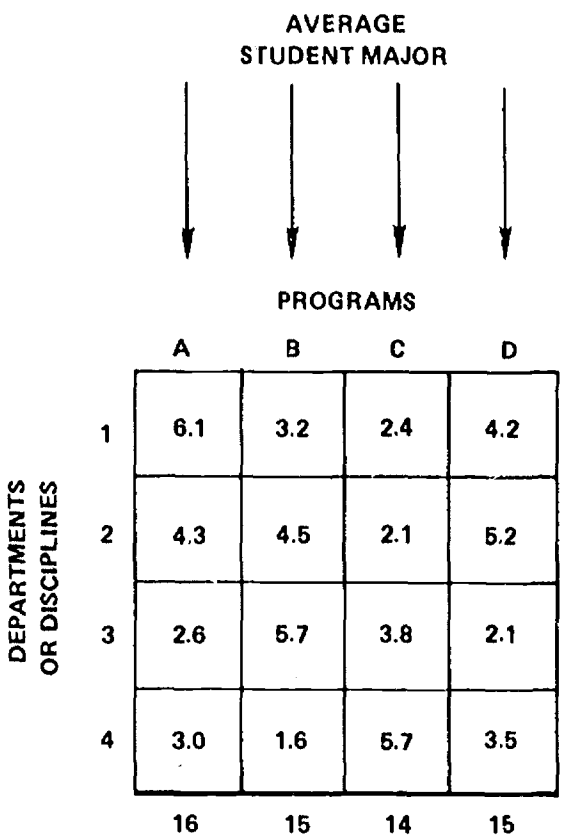
TOTAL DIRECT INSTRUCTIONAL COST–$1,777,512

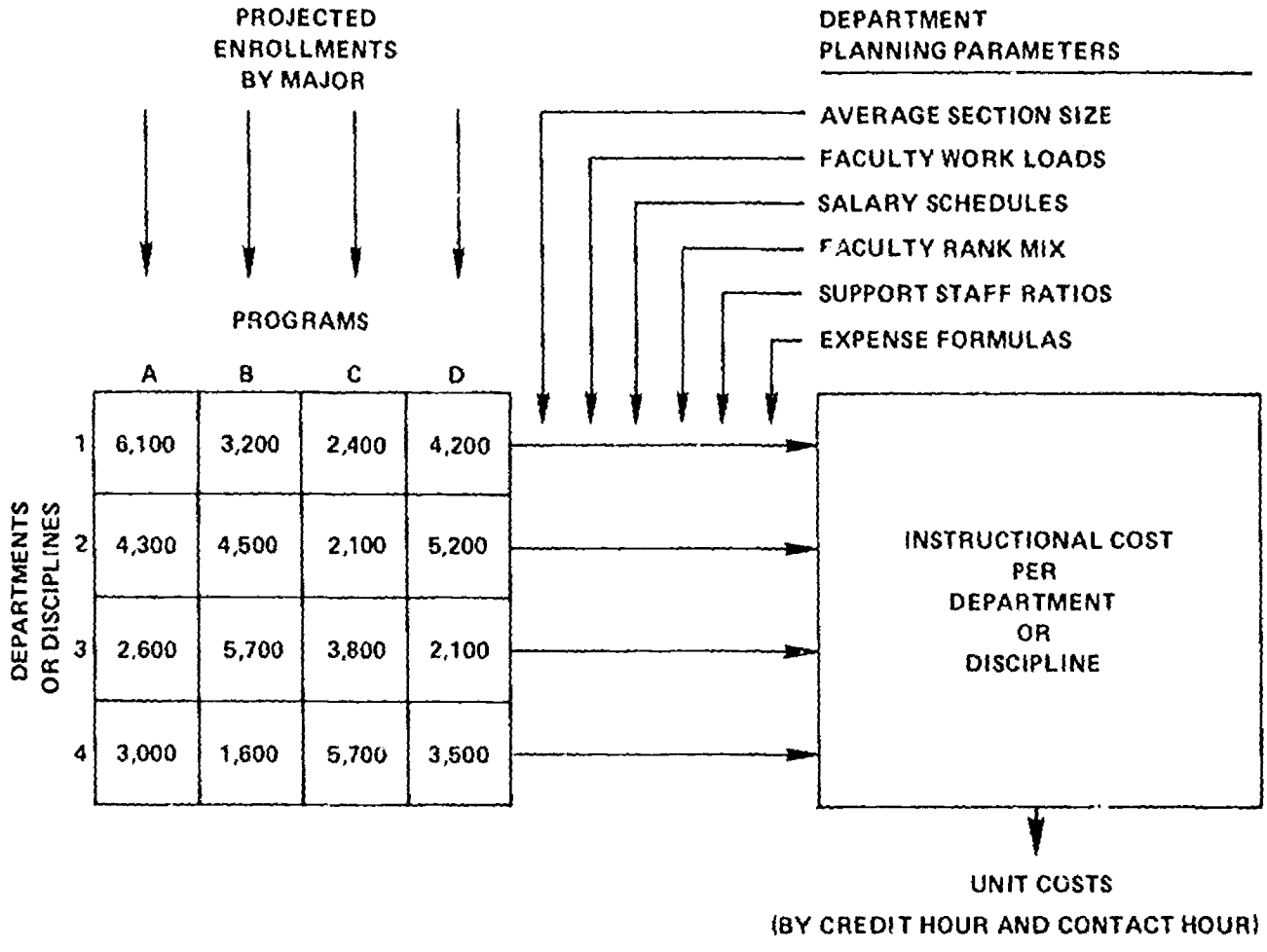
ERIC

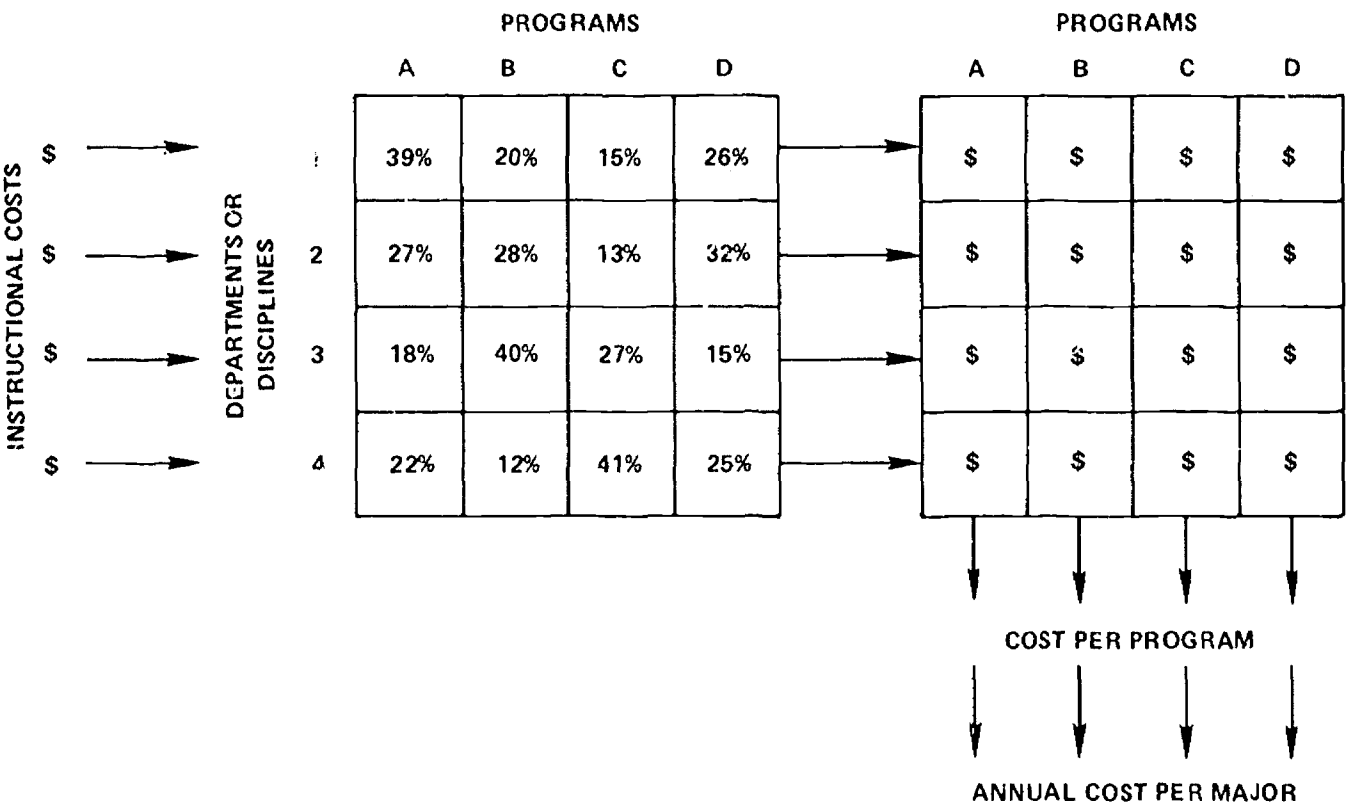
STUDENT FLOW FOR TYPE A MAJORS



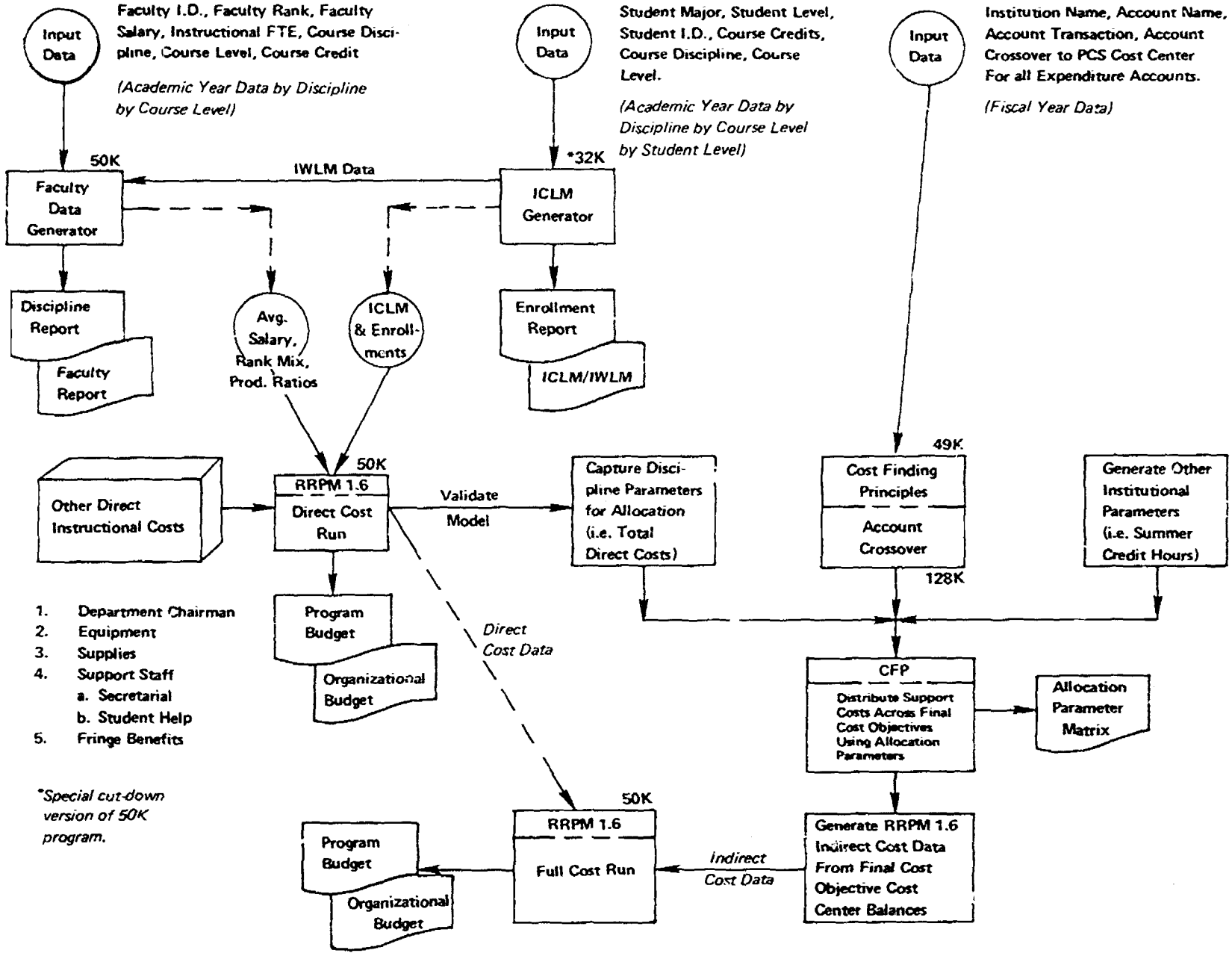
INDUCED COURSE LOAD MATRIX




PROJECTED
ENROLLMENTS
BY MAJOR
DEPARTMENT
PLANNING PARAMETERS
AVERAGE SECTION SIZE
FACULTY WORK LOADS
SALARY SCHEDULES
FACULTY RANK MIX
SUPPORT STAFF RATIOS
EXPENSE FORMULAS
PROGRAMS
A
B
C
D
DEPARTMENTS
OR DISCIPLINES
1
6,100
3,200
2,400
4,200
2
4,300
4,500
2,100
5,200
3
2,600
5,700
3,800
2,100
4
3,000
1,600
5,700
3,500
INSTRUCTIONAL COST
PER
DEPARTMENT
OR
DISCIPLINE
UNIT COSTS
(BY CREDIT HOUR AND CONTACT HOUR)


INSTRUCTIONAL COSTS
$
$
$
$
DEPARTMENTS OR DISCIPLINES
1
2
3
4
PROGRAMS
A
B
C
D
39%
20%
15%
26%
27%
28%
13%
32%
18%
40%
27%
15%
22%
12%
41%
25%
PROGRAMS
A
B
C
D
$
COST PER PROGRAM
ANNUAL COST PER MAJOR

RRPM FULL COSTING DATA REQUIREMENTS



ORGANIZATIONAL STRATEGIES FOR INSTITUTING A MANAGEMENT INFORMATION SYSTEM

Presentor(s) Lloyd Howell, Moderator

Knoxville College
Knoxville, Tennessee

This particular presentation was more visual than descriptive. The following is a brief synopsis of the material presented.

In organizing for the development of a MIS, it is necessary for the person responsible for the leadership role to have a clear cut concept of what a MIS is in terms of its components and what role or function each component will play in the long range planning and concurrent decision making of the organization.

Not only must the principal organizer know and understand the above, but must be able to communicate those understandings to staff and personnel that are to work with him.

The MIS organizer cannot assume that those elements of the establishment responsible for key functions of the institution are knowledgeable and ready to adapt to a mechanized system.

The organizer of MIS must over come *resistance, inefficiency* and *fear.*

RESISTANCE, as always, is a roadblock to progress. (Here the President or Dean must delegate to someone on the staff the responsibility along with concomminitant authority to effect the necessary organizational changes to institute the system). The delegate must have enough clout administratively, to effectively instrument the change.

Those persons working in data processing and institutional research are not necessarily the best suited persons for that task even though they perhaps know more about the input-output capabilities of the data processing hardware on campus than any other segment.

What does all this mean then?. . . It means that a management system can best be devised by those responsible for managing.

INEFFICIENCY—inefficiency is equated with the ratio of input-output being skewed in one direction or the other. The MIS developer must be able to examine critically the on going system and effectively evaluate it in terms of its ability to meet the critical management decisions needs basis.

In effect if the system is inefficient, then conversely the decision makers may be equally so. The old maxim of data processors is "if you put trash in the computer then you get trash out".

FEAR—MIS organizers constantly find fear to be a great hinderance to system development. In our day of supersonic speeds, interplanetary travel and interstellar telecommunication, it is found that those closely related to the utilization of our 1130's are fearful of being replaced by the "monster"; fearful that decisions relative to their working or organizational position will be drastically affected by the system.

The MIS developer through his expertise in dealing with the human equation in the managerial structure must abate those fears. This may be best accomplished through adequate communications. By communication it is meant more than telling the staff what is going to happen!

HOW MIGHT THE SYSTEM DEVELOPER GO ABOUT HIS TASK MOST EFFECTIVELY?

AT KC THE FOLLOWING STRATEGIES WERE FOLLOWED:

A) Administrative decisions were made to update and upgrade the current system because of inadequate decision making data outputs.

B) Administration change in MIS directorate. (This was done in order to put someone in charge of the systems development that could adequately communicate and relate to those departmental structures that were required to make certain inputs to the system).

C) MIS developer drew up a tentative data schedule, that is, of what might be basically needed by the various administrative components to effectively affect adequate decisions.

D) MIS advisory committee formed. This committee was composed of the:
   (1) Academic Dean
   (2) Business Manager
   (3) Director of Admissions and Records
   (4) Financial Aids Officer
   (5) Dean of Student Personnel
   (6) Institutional Researcher
   (7) Director of Development and Staff
      a. Office of Alumni Affairs
      b. Grants and Contracts
      c. UNCF Coordinator

E) The Advisory Committee members were then asked to define their areas of information needs as they saw them in terms of decision making for the college. Each member constructed a list of needs which was given to the MIS Coordinator.

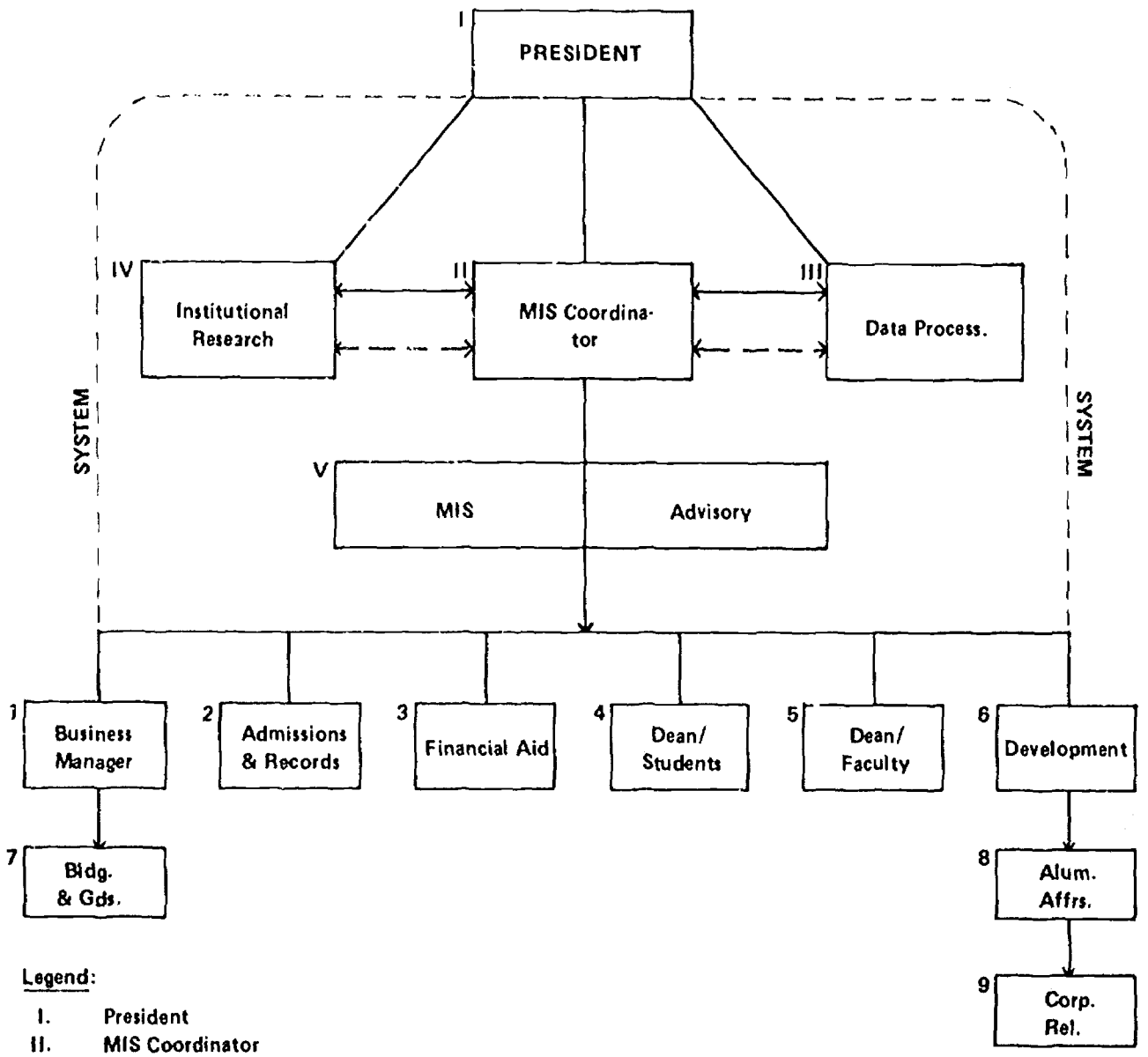
F) The compiled lists were reviewed for their managerial input and efficacy by the administration.

G) The data processing coordinator was then given the lists in order to ascertain the machines input--output capabilities relative to the described data needs.

H) Consultants were called in to evaluate the basic system and equipment as a backup to the data processing coordinator (consultants from IBM are currently working with the staff to develop greater efficiency in the system).

As the MIS Coordinator for Knoxville College, I have developed some very positive attitudes about the IBM Staff as they relate to the continued utilization of the 1130K.

INSTITUTIONAL ORGANIZATION
for a
MANAGEMENT INFORMATION SYSTEM



Legend:

I. President
II. MIS Coordinator
III. Data Processing
IV. Institutional Research
V. MIS Advisory

1. Business Manager
2. Admissions & Records
3. Financial Aid
4. Dean/Students
5. Dean/Faculty
6. Development
7. Building & Grnds.
8. Alumni Affairs
9. Corporate Relations

A FRESHMAN RESEARCH PROJECT

Presentor(s) Walter C. Howard, Moderator
George B. Tutt

Miles College
Birmingham, Alabama

The discussion for this session entails a step by step procedural sequence of developing a data base for incoming freshman students at Miles College. Emphasis are placed on the fact that this system can easily be altered at designated areas to appropriately fit any institution without an in house computer system. However, the system described here is *only* apropos for Miles College. Due emphasis have been given to management techniques stressed by MIS in the development of this project.

Before proceding further, definitions should be established for terms which will invariably be utilized throughout the discussion:

Goal–A statement of what one wants to do sometime in the future, it is large in scope, long in duration, and identifies changes in the problem or area of concern.

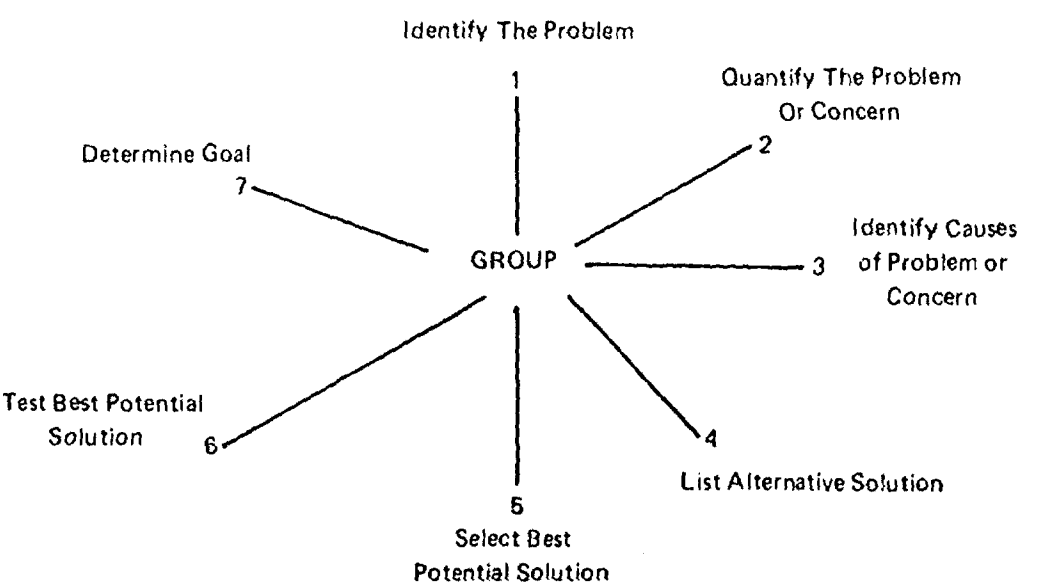
Objective–A statement which is narrower in scope, shorter in duration, and identifies definitive results which lead to successful accomplishment of a goal.

In July of this year (1973), the Director of Freshman Studies and staff Counselors decided that the current system for gathering data was not comprehensive enough to deal with the kinds of concerns which were becoming more and more demanding with increased enrollment, more complex counseling needs of the students, etc.

With a sense of programatic dissonance or disharmony in the counseling program, the search began in order to identify specific obstacles. After collaborating with the pertinent college administrators concerning the situation in the counseling center, the Adhoc Committee for the improvement of counseling services initiated the task of investigating and consequently developing a solution for those concerned.

Chart I-1A graphically describes the first step in the development of a freshman information system.

I–1A



(1) *Identification of the Problem*

Inadequate data collection system which prohibits a fully developed professional counseling program. More specifically, the current system does not facilitate staff personnel in developing well structured procedures for individual and group guidance and counseling. Nor does the present system facilitate counselors in making reliable projections for the college in reference to students needs for financial aid, tutorial assistance, social program development, etc.

(2) *Quantification of the Problem*

The system will deal with only the beginning freshmen which total some 300 students.

(3) *Identification of Causes of the Problem*

A) Unstructured approach utilized in gathering data.
B) Undefined nature and scope of collected data "The scope of data is endless; one must take steps not to reach the point of diminishing return"
C) Unavailable local resources (Money, and technically skilled manpower)
D) Lack of interrelatedness of data

(4) *List of Alternate Solutions*

Criteria:

A) Method selected must not entail cost exceeding a few hundred dollars.
B) Method selected must be flexible enough to allow for future expansion of individual components.

Alternatives:

A) Hire a consultant to develop said system
B) buy a computer
C) Have a staff person with counseling preparation to develop the outline of instrument, concomitantly utilizing the technical services of Management Information Systems Directorate, as well as the computer terminal located a University of Alabama at Birmingham (UAB).

(5) *Selection of Best Potential Solution*

A) Of course the selection was "C" under no. 4.

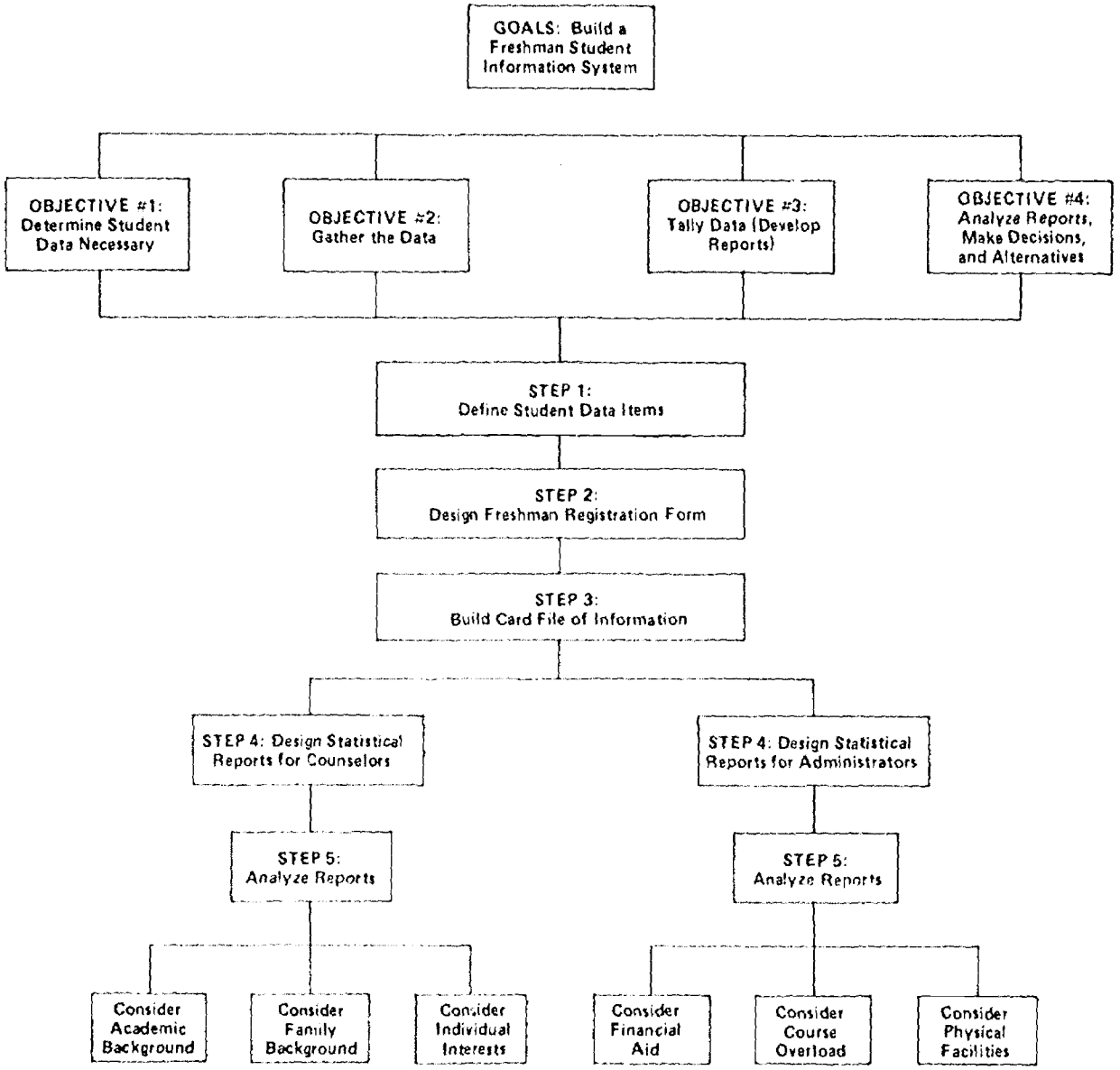
(6) *Testing of Best Potential Solution*

A) Tests were run on hypothetical data, results found, and cost assessed, which conclusively validated selected method.

(7) *Determination of Goal*

Chart I-2B graphically illustrates the development of the Miles Freshman Information System.

Graphic Outline Describing The Development of The Miles Freshman Student Information System
1-2B



The goal stated in its entirety is to develop a system of gathering, storing, and disseminating data for 300 beginning freshmen students which will initiate more valid and reliable counseling and planning by staff counselors, mentors, and administrators.

At the completion of the above task, an instrument was designed which is too extensive to display at this point. (located in appendix A). Major items dealt with in the instrument were as follows: Personal Data, Educational Background, Course Registration, Social Responsibilities, Family Background, Financial Aid Needs, High School Math and Sciences Courses/Grades, and Placement Test Scores.

In chart I-2B, step no. 4 refers to design of statistical reports for counselors and administrators. Chart I-3C is indicative of one such report for counselors usage. (All statistical reports designed by computer at UAB)

I-3C

High School GPA	Total	%	Male	Female
4.0	–	–	–	–
3.5-3.9	15	5	5	10*
3.0-3.4	45	15	15	30*
2.5-2.9	60	*20	25	35
2.0-2.4	90	*30	65*	25
1.5-1.9	75	*25	65*	10
1.0-1.4	15	5	14	1
Total	300	100%	189	111

The asterisked categories are the most outstanding points of emphasis because they clearly indicate extreme highs and lows. For example under the percentage column, we note that 30% of the beginning freshmen enter Miles with a GPA of 2.0-2.4, while only 15% enter with 3.0-3.4. Another observation at the 2.0-2.4 mark is the fact that 65 of the males as opposed to only 25 females enter at that level. At the 3.0-3.4 mark, the females have twice as many people at that level as compared to the males. The above facts possess serious implications for staff counselors, if GPA's positively correlate with placement test scores.

Chart I-3D illustrates an analysis report on family income which must be validated by PCS forms and in some cases yearly income tax return forms.

I-3D

Family Income	Total	%	Male	Female
10,000–				
9,000–9,999				
8,000–8,999				
7,000–7,999	6	2	3	3
6,000–6,999	9	3	2	7
5,000–5,999	60	20*	40	20
4,000–4,999	60	20*	15	45

I-3D (Continued)

Family Income	Total	%	Male	Female
3,000--3,999	150	50*	85	65
2,000--2,999	15	5	5	10
Total	300	100%	150	150

The single most outstanding fact on the above chart is that 50% of all beginning freshmen families earn between $3,000-$3,999 dollars per year, as opposed to only 2% of the students families earning between $7,000-$7,999 dollars per year. Needless to say, these facts are imperative in structuring financial aid programs as opposed to only utilizing PCS forms to assess students financial aid needs. With the abovementioned methodology, information is gathered on *all* students and most importantly all information is validated.

Chart I-4E shows a statistical breakdown of enrollment by courses.

I-4E

		Total Enrollment	%	Male	Female
English	101	210*	70	150*	60
English	102	90	25	39	51*
Social Science	101	300	100%	189	111
Social Science	102	0			
Life Science	101	15*	5	5	10
Physical Science	102	0			
Math	100	90*	25	70	30
Math	110	15	5	5	10
Reading	101	150*	50	110	40
Reading	102	0			
Religion	201	15	5	5	10
Religion	202				
Psychology	201	60	20	20	40
Foreign Language	103				
Foreign Language	103				
Physical Ed.	101	300	100	189	111
Physical Ed.	102				
Freshman Seminar	111	300	100	189	111
Humanities	201	60	20	20	40
Humanities	202				

The college maintains three remedial courses which are English 101, Math 100, and Reading 101 & 102. The first asterisked entry under the enrollment column clearly indicates a need for a strong remediation program in English because of 210, or 70%, of the students being placed there as a result of the college placement test. Continuing vertically across, we

also note that 150 of the 210 students are male while only 60 are female. However in contrast to English 101 enrollment, the English 102 enrollment only has a total of 90, or 25%, while 51 of the total group are females only 39 are males. Descending horizontally down the enrollment column we note the next asterisked entry is life science with an enrollment of only 15. The explanation for this fact is that students scoring low on the placement instrument in English (<10.0) and reading (<8.5) are strongly counseled against registering for life science because of the technical reading involved.

We also note in Math 100, the second remedial course, that 90 students are enrolled while only 15 are enrolled in the regular college Math 110. We noted earlier that the freshman class had a total of 300 students, while we only have 105 students enrolled in the Math courses. The rationale for this discrepancy is because only those students scoring below 8.0 on the Math placement are required to enroll in Math the first semester. Other students are given the option of taking Math 110 the second semester or even during their sophomore or junior year.

The last asterisked entry is reading 101. We have 150 students enrolled which is equivalent to 50% of the total group of beginning students.

Chart 1-5F will give a statistical breakdown at the end of the semester primarily for administrative utilization by the Dean of the College.

1-5F

Courses		Letter Grades and Percentages													
		A	%	B	%	C	%	D	%	F	%	W/P	%	W/F	%
English	101														
English	102														
Social Science	101														
Social Science	102														
Life Science	101														
Physical Science	102														
Math	100														
Math	110														
Reading	101														
Reading	102														
Religion	201														
Religion	202														
Psychology	201														
Foreign Language	104														
Foreign Language	104														
Physical Ed.	101														
Physical Ed.	102														
Freshman Seminar	111														
Humanities	201														
Humanities	202														
Total															

For the college counselors to properly utilize information in the above catagories, a further breakdown would be necessary. For example, statistical reports of individual students according to courses would be a requisite to facilitate individual counseling.

Chart I-6G gives a statistical breakdown of projected areas of concentration.

I-6G

Projected Areas of Concentration	Total	%	Male	Female
Undecided	30	10	15	15
Biology	15	5	5	10
Chemistry	10*	3	0	10
English	25	8	15	10
Mathematics	15	5	10	5
Social Science	75*	25	70	5*
Elementary Ed.	25	8	10	15
Accounting	25	8	10	15
Business Ed.	10	3	5	5
Economics	5*	1.5	0	5
General Business	5	1.5	0	5
Secretarial Science	15	5	0	15
Special Ed.	20	6	18	2
Social Work	30	10	25	5

On the above chart, we have placed asterisks at three points under the total column. The first asterisk indicates that only 10 students of total group of 300 plan to major in chemistry while 75 plan to major in general social science, and only a small number of students (5) contemplate majoring in economics. The most astonishing element involved in internalizing the above facts is the projected number of students planning futures in general social science. Occupational outlook projections indicate that the area of social science is closed for the next ten years, with exceptions for a few master and doctoral degree recipients. By contrast, the fields which are wide open are in the natural sciences and business, while the majority of our students shy away from those fields. The aforementioned facts have vital implications for staff counselors and college administrators in assisting the students in properly preparing for future occupational endeavors.

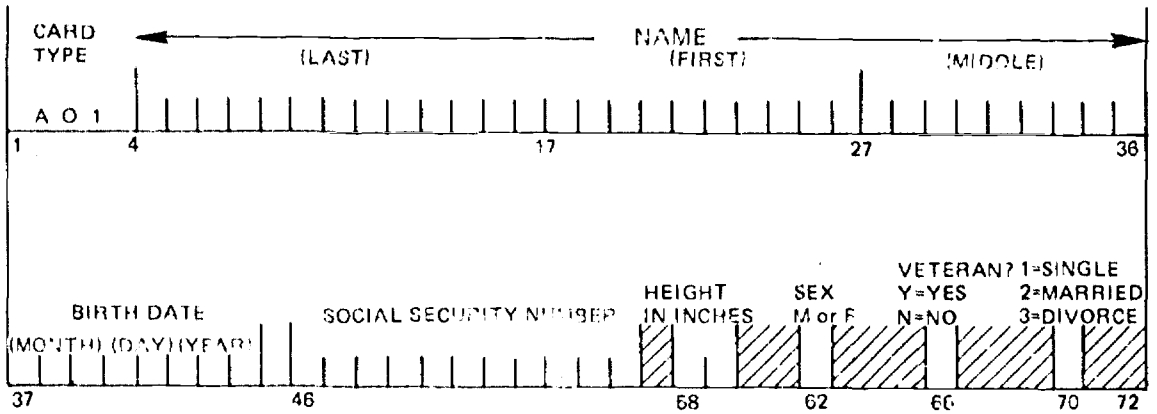
In closing, it is imperative to reiterate the fact that the aforementioned system is *only* apropos for Miles College.

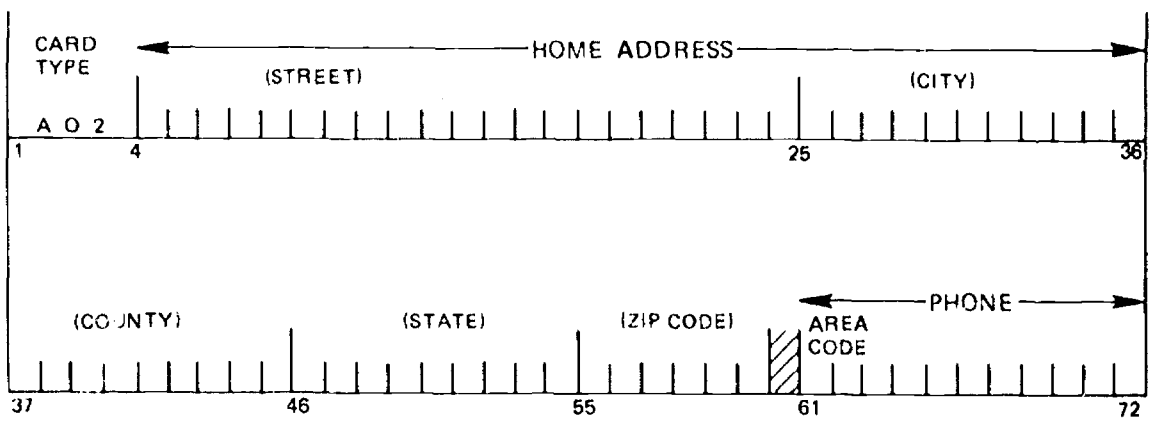
APPENDIX

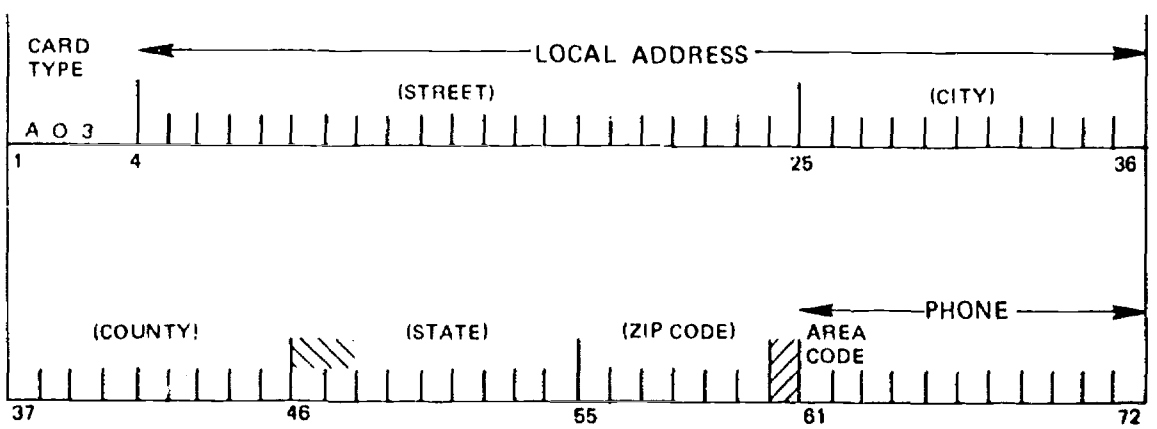
PERSONAL DATA

Student Number

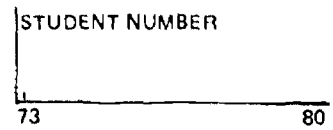
73 80

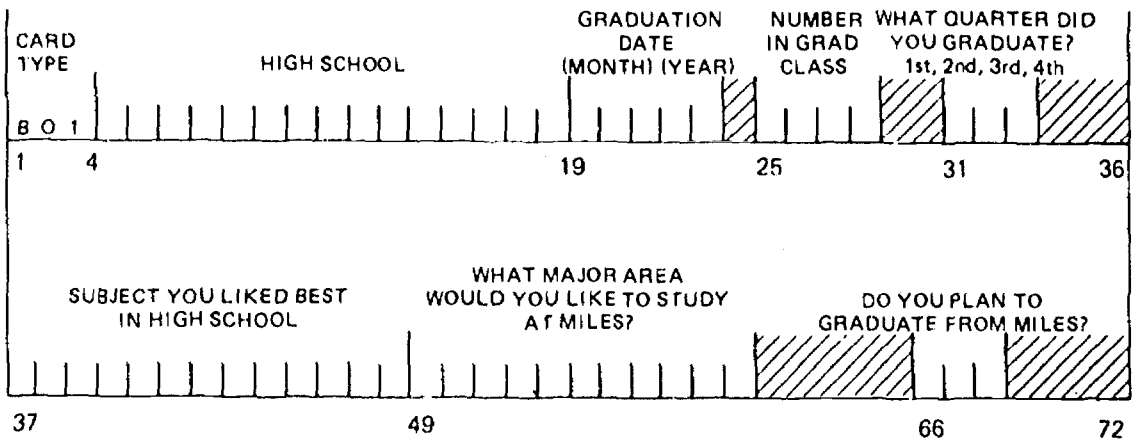


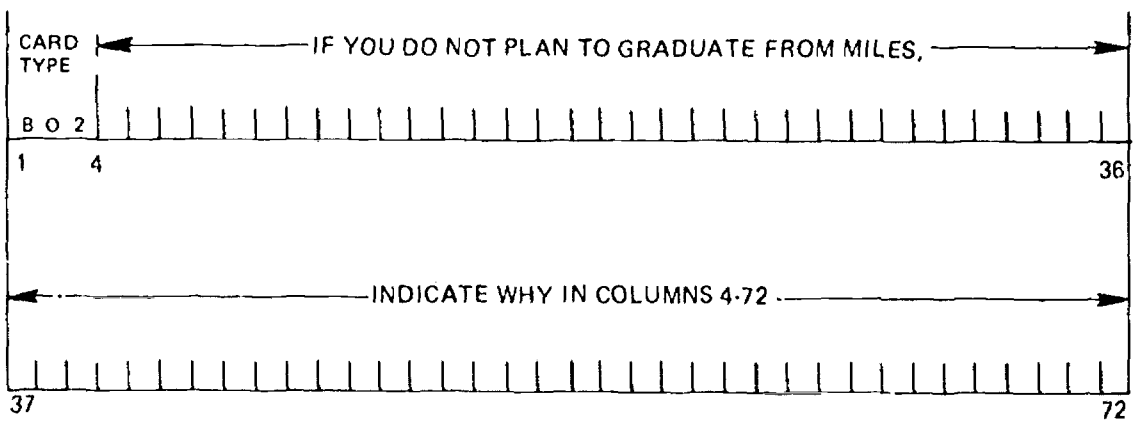


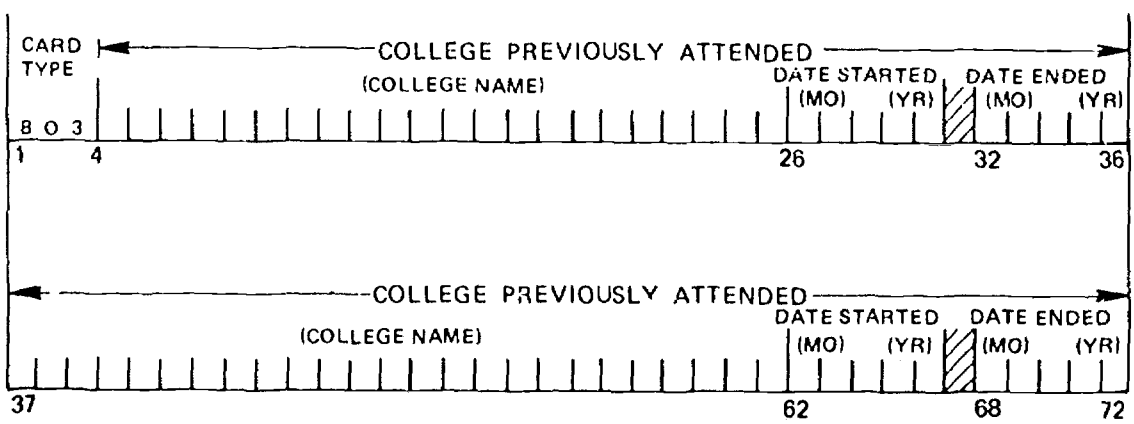


STUDENT
EDUCATIONAL BACKGROUND





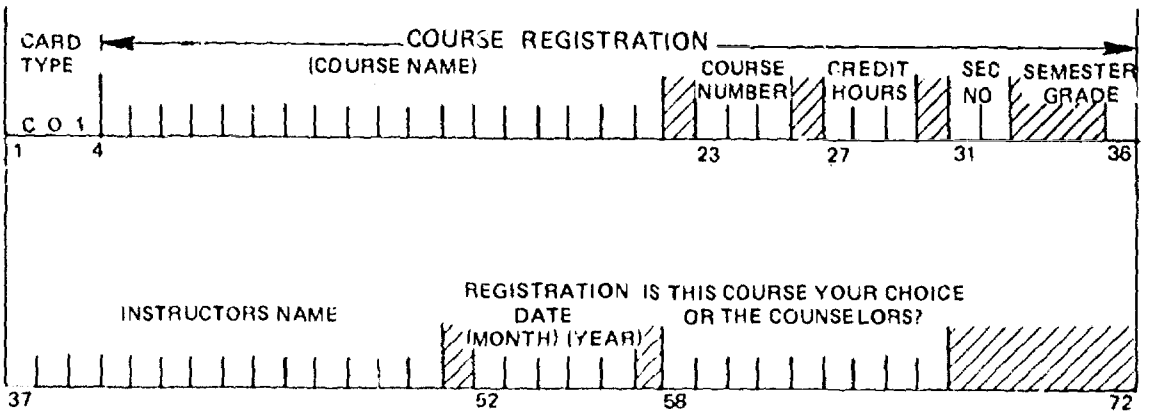


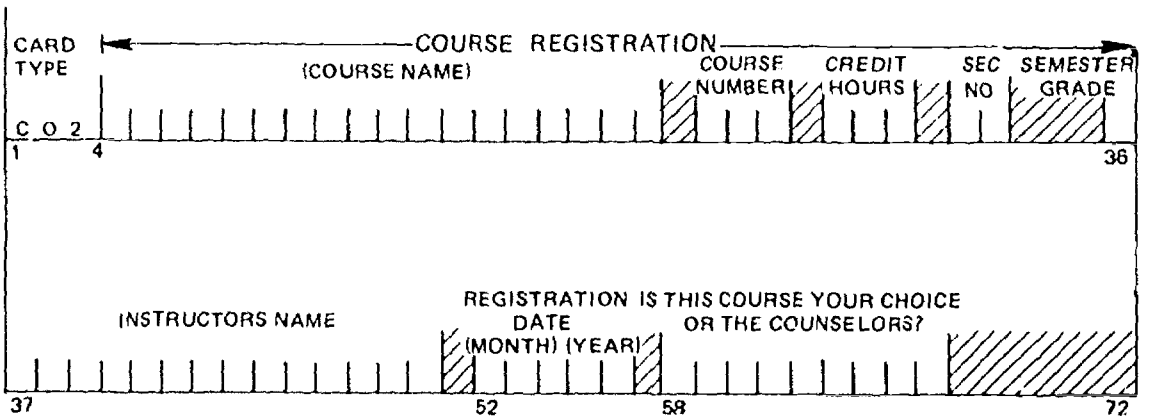


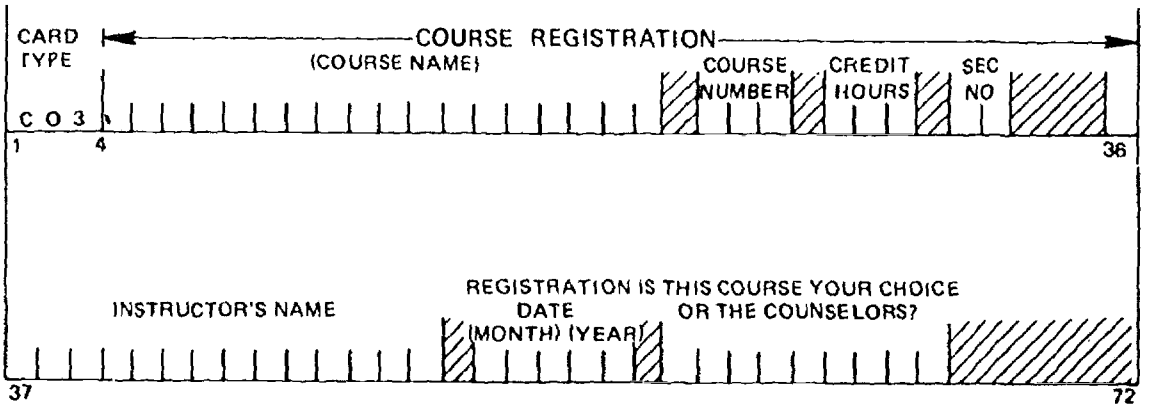
COURSE REGISTRATION

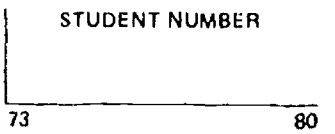
STUDENT NUMEER

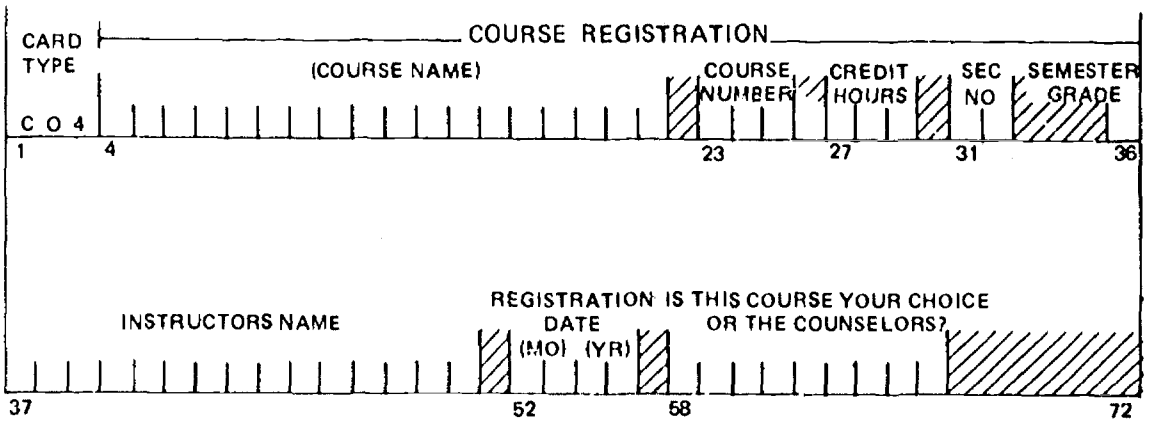
73 80

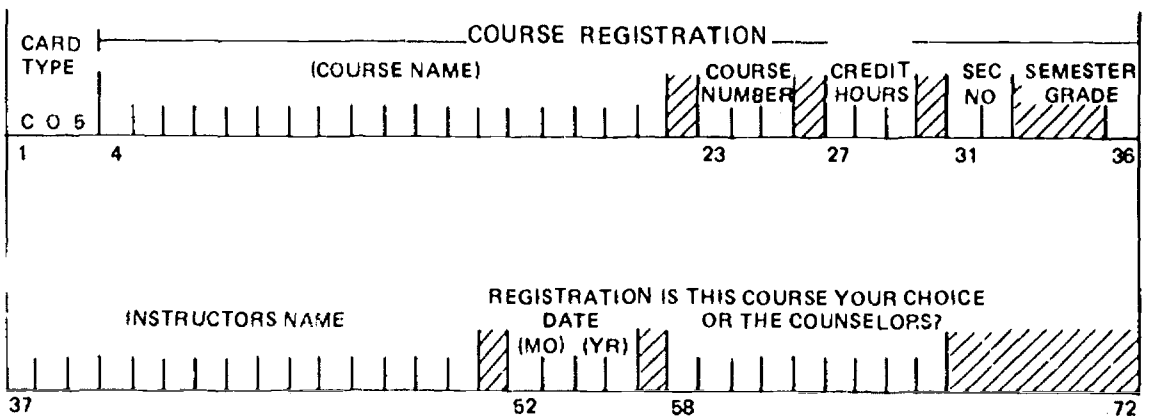







STUDENT NUMBER
73
80


CARD TYPE
COURSE REGISTRATION
(COURSE NAME)
COURSE NUMBER
CREDIT HOURS
SEC NO
SEMESTER GRADE
C O 4
1
4
23
27
31
36
INSTRUCTORS NAME
REGISTRATION DATE (MO) (YR)
IS THIS COURSE YOUR CHOICE OR THE COUNSELORS?
37
52
58
72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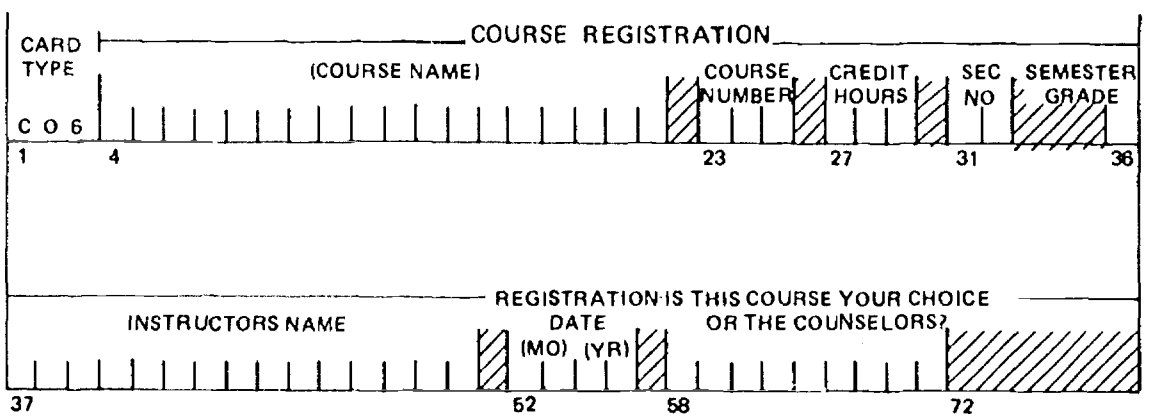
COURSE REGISTRATION
(COURSE NAME)
COURSE NUMBER
CREDIT HOURS
SEC NO
SEMESTER GRADE
C O 5
1
4
23
27
31
36
INSTRUCTORS NAME
REGISTRATION DATE (MO) (YR)
IS THIS COURSE YOUR CHOICE OR THE COUNSELORS?
37
52
58
72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COURSE REGISTRATION
(COURSE NAME)
COURSE NUMBER
CREDIT HOURS
SEC NO
SEMESTER GRADE
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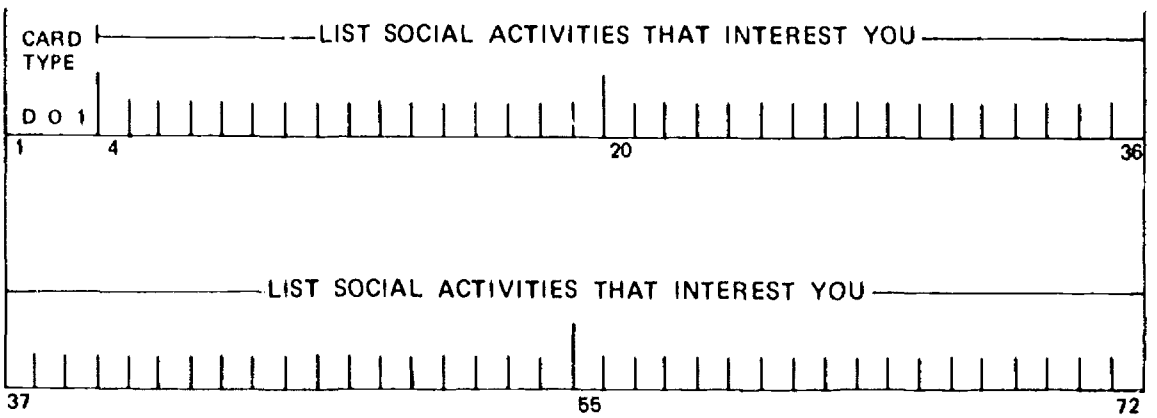
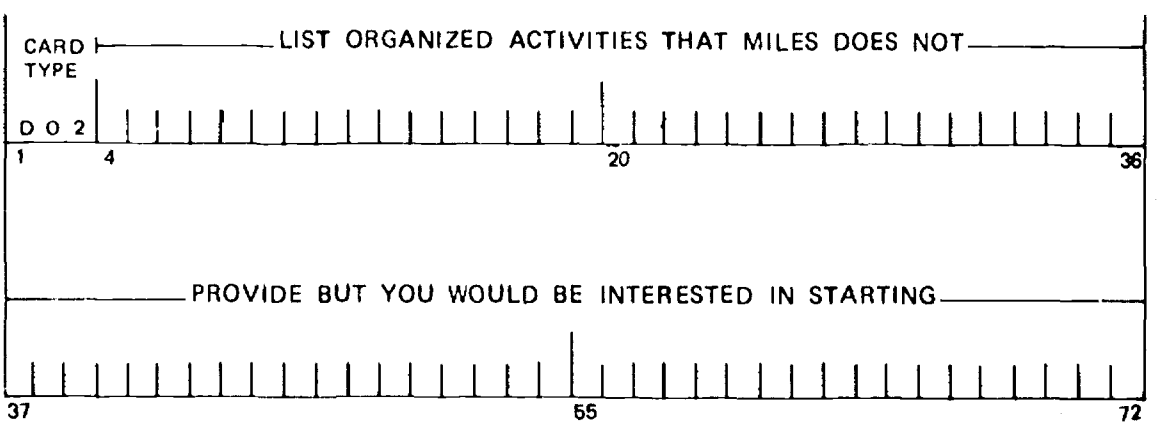
36
INSTRUCTORS NAME
REGISTRATION DATE (MO) (YR)
IS THIS COURSE YOUR CHOICE OR THE COUNSELORS?
37
52
58
72

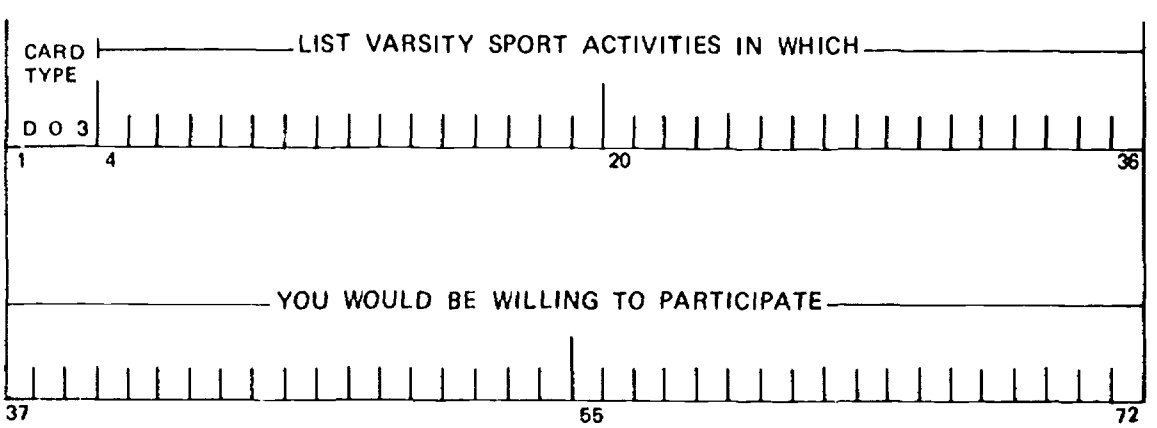
SOCIAL RESPONSIBILITIES

STUDENT NUMBER

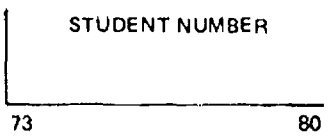
73 80

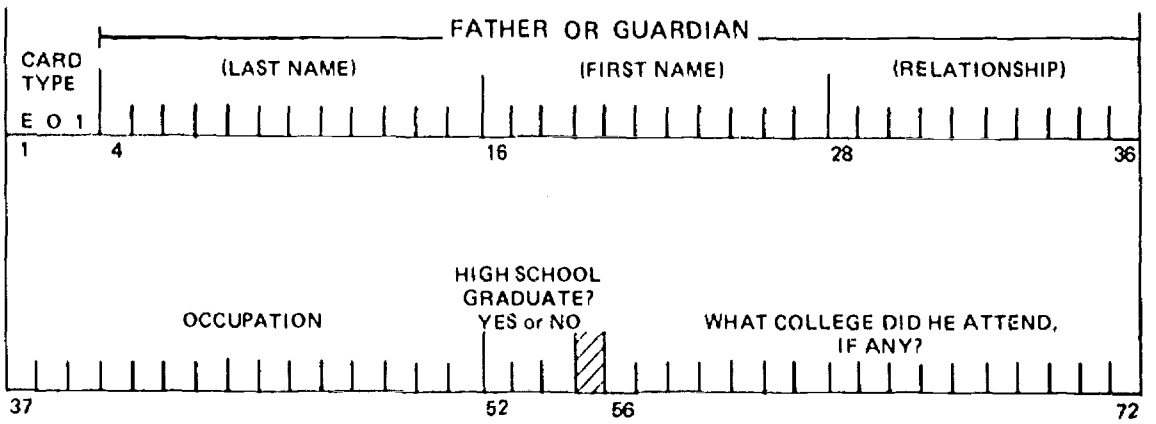


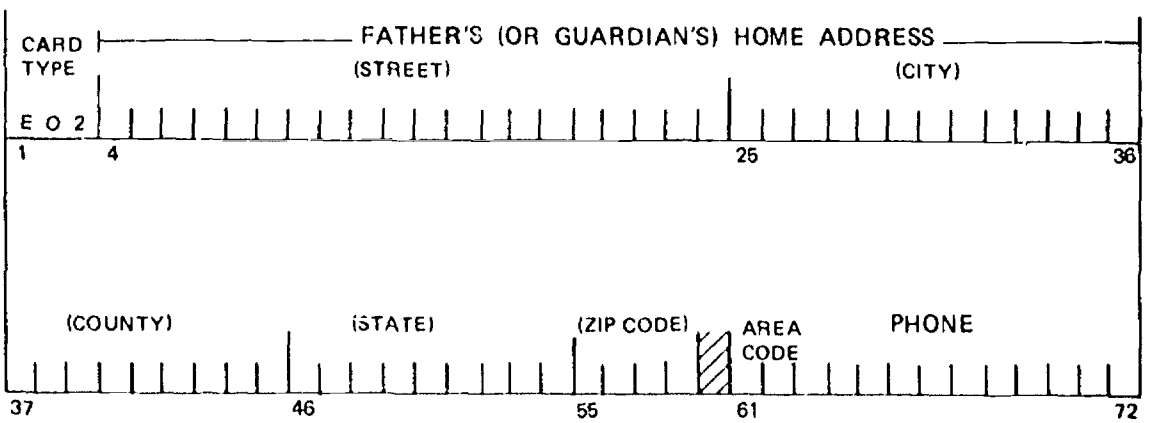


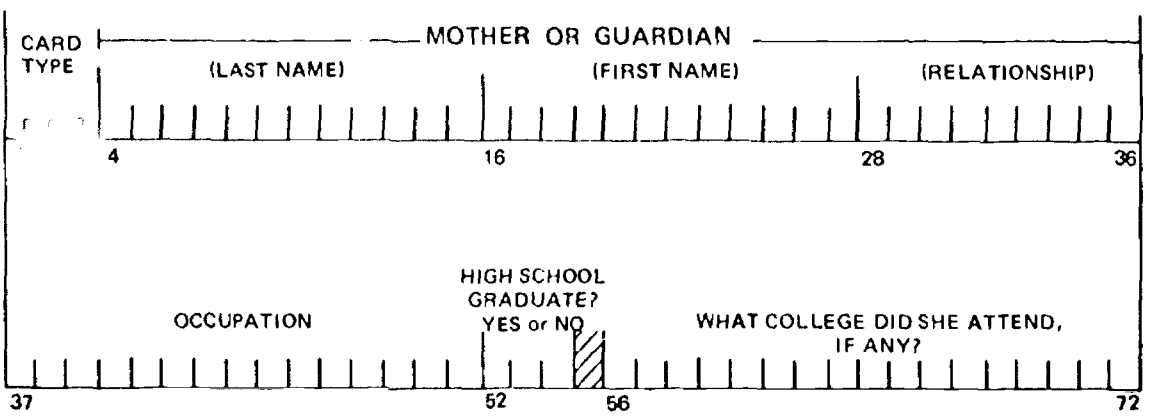


FAMILY BACKGROUND









FAMILY BACKGROUND (CONT.)

STUDENT NUMBER

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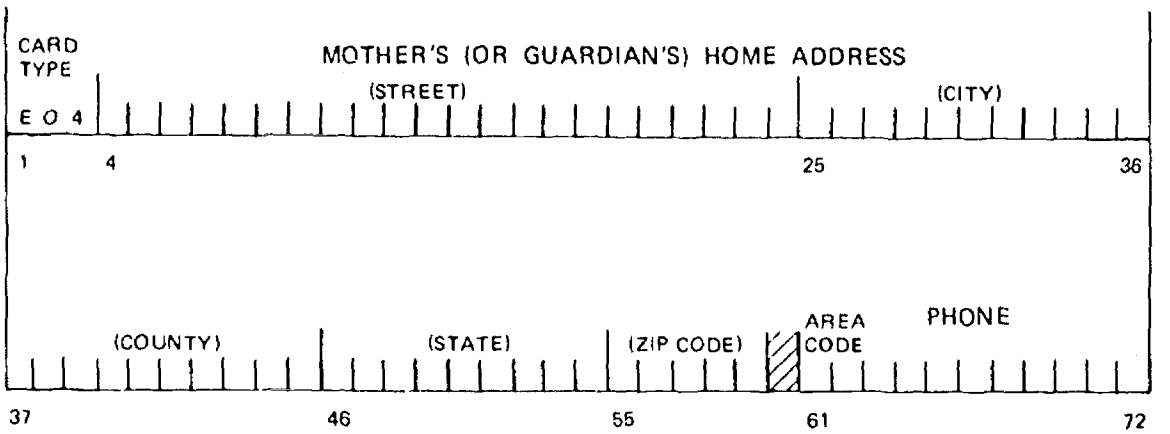

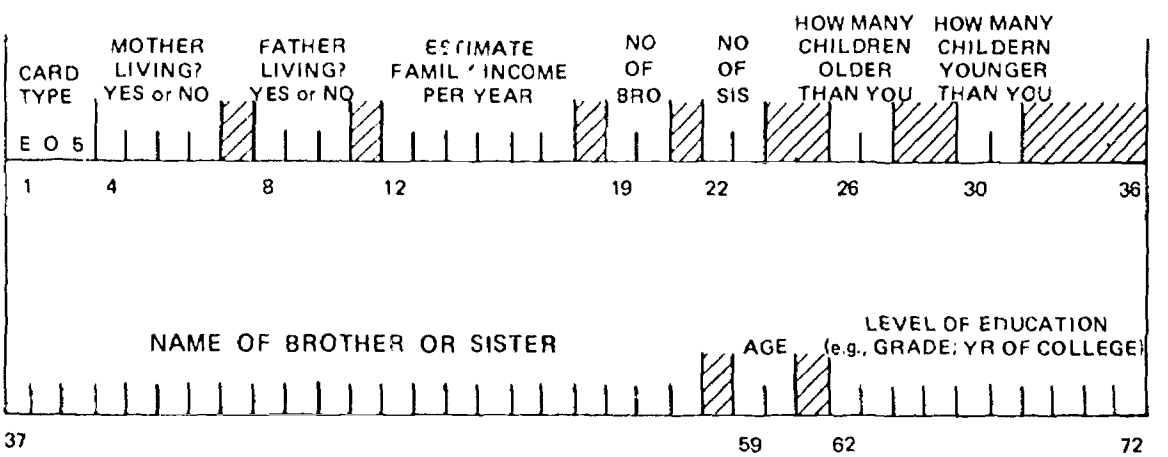

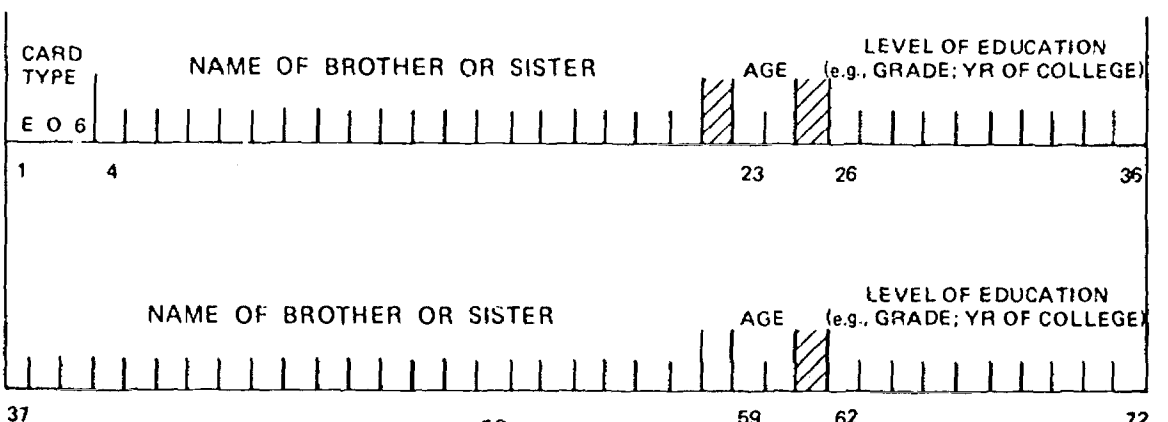

FAMILY BACKGROUND (CONT.)

STUDENT NUMBER

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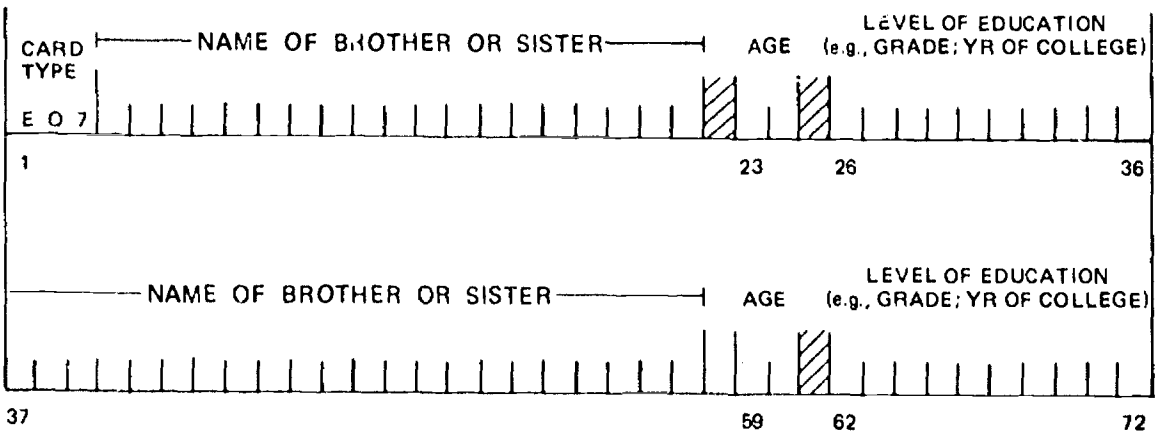

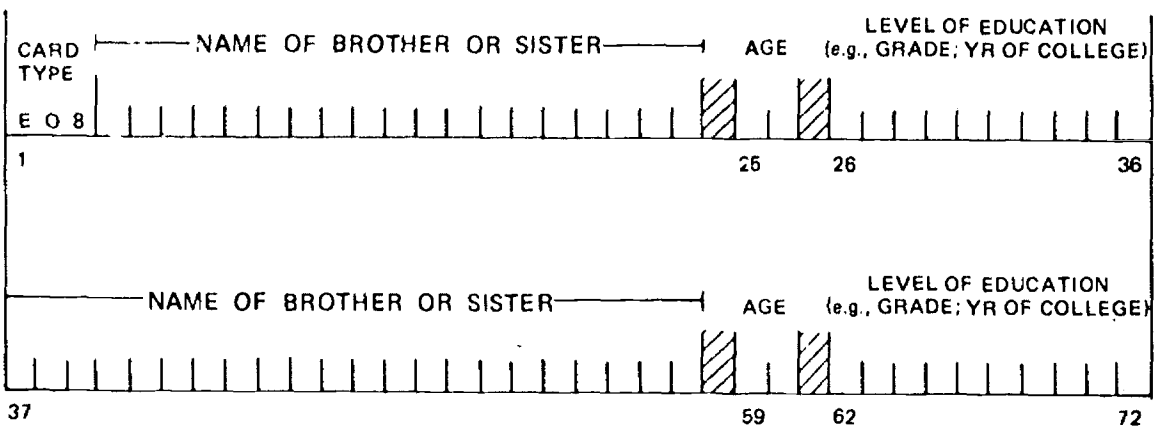

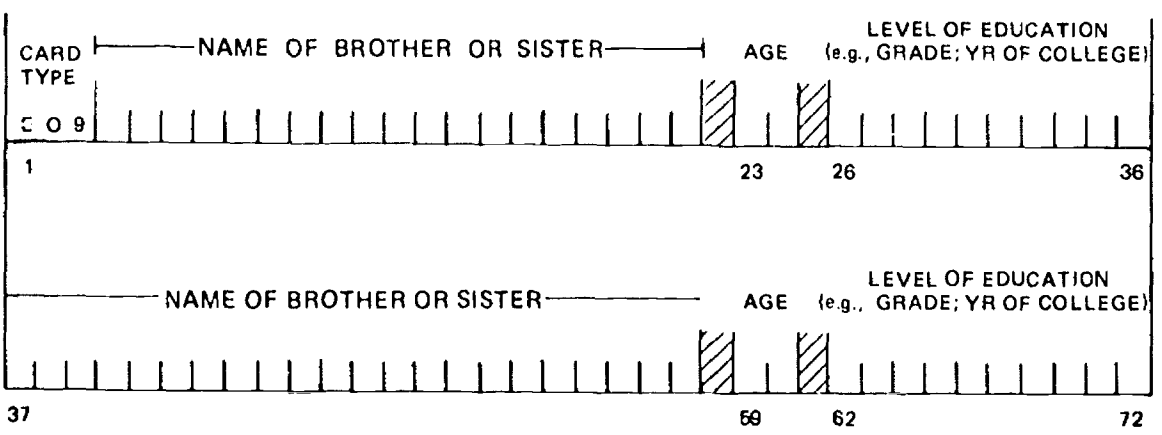

FINANCIAL-AID

STUDENT NUMBER

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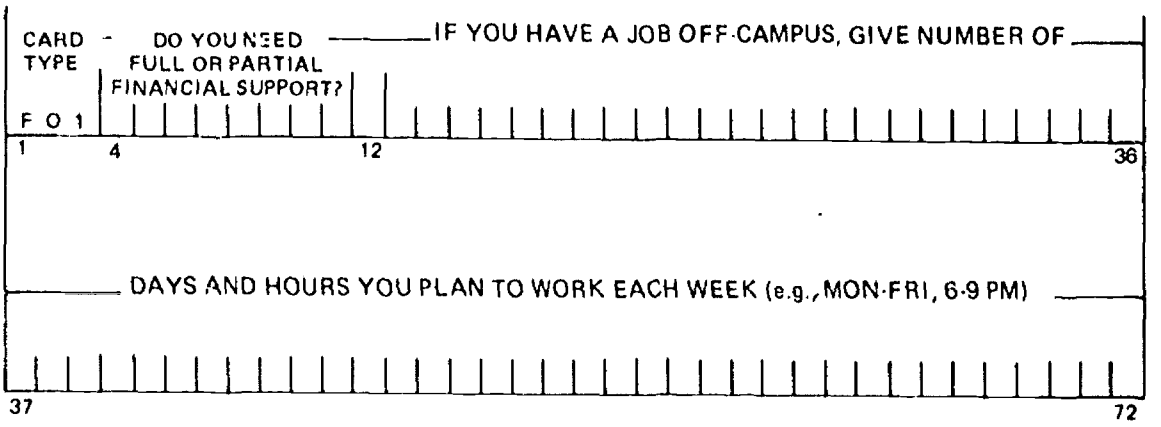

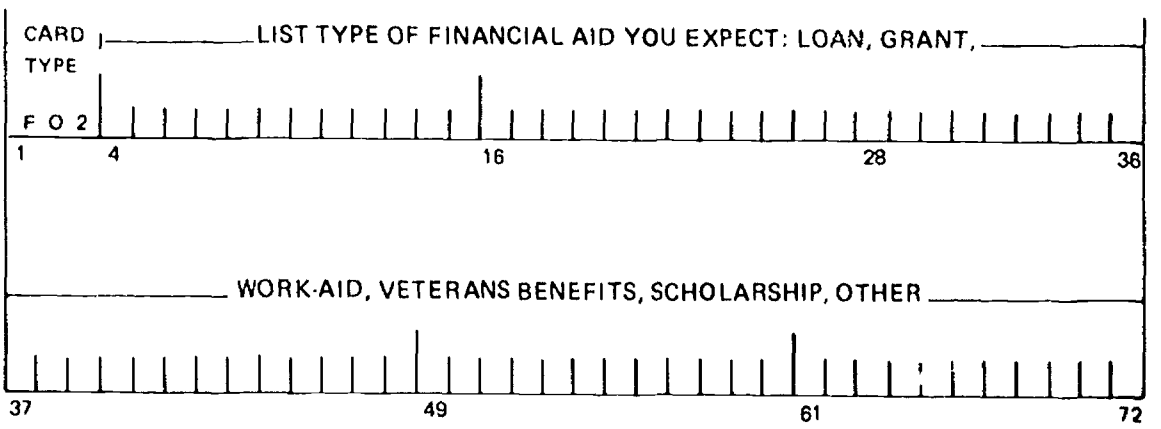

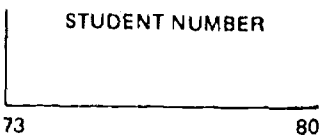
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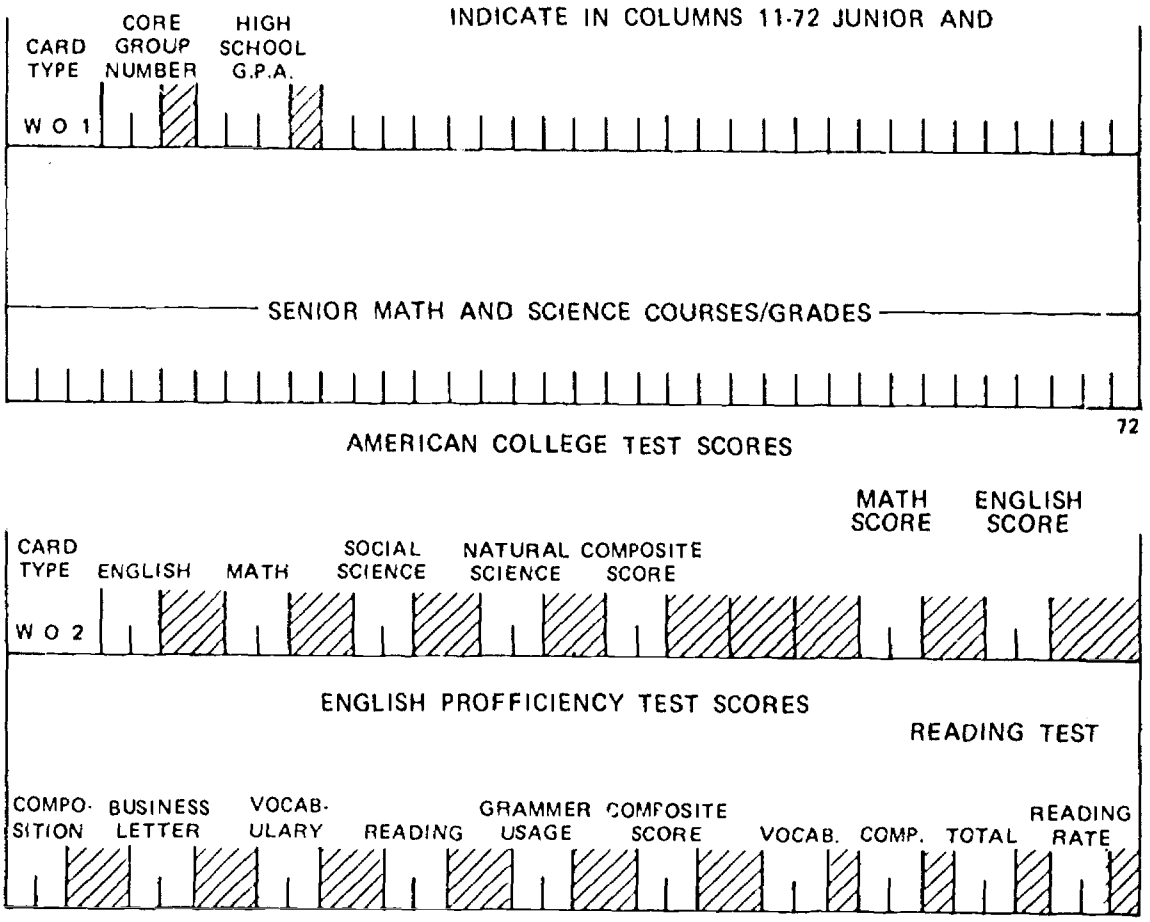

INDICATE IN COLUMNS 11-72 JUNIOR AND
CARD TYPE
CORE GROUP NUMBER
HIGH SCHOOL G.P.A.
W O 1
SENIOR MATH AND SCIENCE COURSES/GRADES
72
AMERICAN COLLEGE TEST SCORES
MATH SCORE
ENGLISH SCORE
CARD TYPE
ENGLISH
MATH
SOCIAL SCIENCE
NATURAL SCIENCE
COMPOSITE SCORE
W O 2
ENGLISH PROFFICIENCY TEST SCORES
READING TEST
COMPO-SITION
BUSINESS LETTER
VOCAB-ULARY
READING
GRAMMER USAGE
COMPOSITE SCORE
VOCAB.
COMP.
TOTAL
READING RATE

METHODS OF DETERMINING DEPARTMENTAL AND INSTITUTIONAL COSTS

Presentor(s) Laurence Jacobs, Moderator
Roger Mikesell

Oakwood College
Huntsville, Alabama

ERIC

INTRODUCTION

Our mission is to establish a firm basis upon which an administrative official or officials may promote the growth of a department or choose to discontinue the existence of one, i.e., in addition of a course, deletion of a course, add or drop an instructor based on cost.

Some of the issues in our school have been who gets the new teacher, or who gets the new classroom or office, etc.

THE PROGRAM

Through a cost type data analysis of existing human and physical resources, we can determine where the needs are greater, and implement them in the order of their importance.

Data and resource requirements used:

I. Student Data
   - A. Program (major degree program, field of study)
   - B. Student level
   - C. Cost center (course discipline, department, division, etc.)
   - D. Course level (upper or lower division)
   - E. Units taken (credit hours, contact hours)
   - F. Student number, or social security numbers

II. Data Needed for Each Cost Center (Department)
   - A. Salary for each faculty person plus 12 to 15% for fringe benefits
   - B. For larger schools expenditure in each category. i.e., supplies, travel, equipment, and supporting staff.

III. Data Needed for Each Instruction Level Within Each Cost Center (Faculty Data)
   - A. FTE faculty
   - B. Percent of hours taught (could have administrative duties) or average faculty workload.
   - C. Size of class section

Basically, the criteria by which our goals are evaluated are Number 1 cost, tradition, needs or obligations to specific students. (Obligation to graduate a major in French if French is discontinued.)

IV. The uncertainties of the program are:
   - A. Fluctuations in enrollment of the student body
   - B. Availability of funds
   - C. Possibility of false information (when information is being collected by a devised instrument)

V. The problems are:
   - A. Program cannot start until all student and instructor schedule changes have been made.
   - B. Faculty salary information sensitive
   - C. All participants must carefully and uniformly classify and code the data
   - D. Computing instructor FTE complicated by team teaching and instructors who have administrative responsibilities
   - E. With an old card system such as we have there is the problem of card handling, folding, stapling mutilating, misplacing, etc. as well as card jams.

Real Value or Out Come:

Common basis on which local departmental costs can be compared with other institutions provides objective basis to determine whether to drop or add classes or instructors.

Provide a general idea of how much it may cost to establish a new department or what can be saved by eliminating an old one.

The Statistics

A sample of the findings or a summary of instructional statistics are presented in the appendix. These statistics are self explanatory. Teacher cost is based entirely on the salary of the FTE teacher or teachers for that quarter. The cost per credit hour is obtained by dividing teacher cost (salaries) by student credit hours generated. We feel that because teacher costs amount to eighty percent or more of total instructional costs that it is a good indicator. I do not feel that the statistics presented here are 100% accurate due to:

1. The instrument used to collect the data
2. The interest and/or the accuracy of the instructor collecting the information
3. Errors that might have occurred in punching the data on data processing cards.

Regardless of the errors we feel that the method is good and with the refinement of these methods we will be able to come up with a high degree of accuracy. The second set of statistics in the appendix (a range for three statistics) gives an idea as to the upper or lower limits of cost. These costs were obtained from thirteen other schools. For example if one finds teacher cost per credit hour at the lower limit he has a valid reason for the request of a new instructor, etc.

The final items in the appendix are instructions for filling out summary class report forms in a format that can be used or transferred to data processing cards for computer runs. A similar type of instruction was formulated for obtaining faculty information. The form for this information is the last one in the appendix.

OAKWOOD COLLEGE
SUMMARY OF INSTRUCTIONAL STATISTICS
Fall Quarter, 1972

Department	Stu/Cr Hrs Generated	FTE Stu	FTE Fac	Stu/Fac Ratio	Tchr Cost	Tchr Cost per Cr Hr	No. of Courses Taught	No. of Students Taught	Av Class Size	Cr Hrs Taught
Business										
Business	571.00	36.8	2.3	16.0	$ 8,335	$14.60	6	153	25.5	23.0
Data Processing	30.75	1.9	0.7	2.7	2,291	74.50	2	7	3.5	5.0
Total	601.75	38.8	3.0	12.9	$ 10,626	$17.66	8	160	20.0	28.0
Secretarial Science	289.75	18.6	2.7	6.9	$ 8,825	$30.46	8	92	11.5	26.2
Education	746.75	48.1	2.8	17.2	$ 10,683	$14.31	11	250	22.7	39.0
Physical Education	450.75	29.0	1.7	17.1	$ 5,352	$11.87	8	327	40.9	10.0
Behavioral Science										
Anthropology	68.75	4.4	0.3	14.7	$ 1,281	$18.63	1	14	14.0	4.0
Behavioral Science	148.75	9.5	0.7	13.6	2,688	18.07	1	34	34.0	4.0
Psychology	796.75	51.4	2.0	25.7	7,654	9.61	7	205	29.3	26.0
Sociology	484.75	31.2	1.0	31.2	5,132	10.59	4	118	29.5	16.0
Total	1,499.00	96.7	4.0	24.2	$ 16,755	$11.18	13	371	28.5	50.0
History & Pol. Sc.										
History	1,332.75	85.9	3.9	22.8	$ 15,339	$11.14	13	330	25.4	52.0
Political Science	44.75	2.8					1	8	8.0	4.0
Total	1,377.50	88.8	3.9	22.8	$ 15,339	$11.14	14	338	24.1	56.0
Art	100.50	6.5	0.7	9.3	$ 1,344	$13.37	1	22	22.0	4.0
Music	447.75	28.8	4.3	6.7	$ 10,191	$22.76	17	200	11.8	39.0
English										
English	1,624.75	104.8	5.1	20.5	$ 18,747	$11.54	19	450	23.7	68.0
Reading	70.75	2.6	0.5	5.2	1,698	24.00	2	14	7.0	4.0
Journalism	48.75	3.1	0.3	10.3	933	19.14	1	9	9.0	4.0
Total	1,744.25	112.5	5.9	19.1	$ 21,378	$12.26	22	473	21.5	76.0
Speech	184.75	11.9	0.2	59.5	$ 843	$ 4.56	1	43	43.0	4.0

OAKWOOD COLLEGE
SUMMARY OF INSTRUCTIONAL STATISTICS
Fall Quarter, 1972

Department	Stu/Cr Hrs Generated	FTE Stu	FTE Fac	Stu/Fac Ratio	Tchr Cost	Tchr Cost per Cr Hr	No. of Courses Taught	No. of Students Taught	Av Class Size	Cr Hrs Taught
Modern Language										
French	145.75	9.4	1.5	6.3	$ 3,378	$23.18	3	35	11.7	11.0
Spanish	76.75	4.9	0.2	24.0	867	11.30	1	16	16.0	4.0
Total	222.50	14.4	1.7	8.4	$ 4,245	$19.08	4	51	12.8	15.0
Biology	865.00	55.8	2.0	27.9	$ 7,876	$ 9.11	6	204	34.0	26.0
Mathematics										
Math	602.75	38.8	2.0	19.4	$ 7,205	$11.95	8	154	19.3	30.0
Physics	464.75	29.9	2.0	15.0	5,936	12.77	4	113	28.3	16.0
Total	1,067.50	68.9	4.0	17.2	$ 13,141	$12.31	12	267	22.3	46.0
Chemistry	564.75	36.4	1.7	21.4	$ 5,459	$ 9.67	6	151	25.2	20.0
Home Economics	308.75	19.9	2.3	8.7	$ 6,787	$21.98	7	74	10.6	28.0
Religion										
Theology	1,878.75	121.2	3.7	32.8	$ 15,060	$ 8.02	13	514	39.5	48.0
Biblical Language	256.75	16.5	0.4	41.3	1,687	6.57	2	61	30.5	8.0
Total	2,135.50	137.8	4.1	33.6	$ 16,747	$ 7.84	15	575	38.3	56.0
TOTAL	12,577.00	811.4	45.2	18.0	$155,591	$12.37	153	3,598	23.5	523.2

RANGES FOR THREE STATISTICS
1972-73

Discipline	Student/Faculty Ratio	Tchr Cost/Cr. Hr.*	Av. Class Size
Accounting			
Fall	10.4 - 25.5	$ 6.44 - $ 20.63	8.0 - 29.8
Winter	8.3 - 18.9	$ 8.68 - $ 26.13	7.5 - 22.3
Spring	5.1 - 30.9	$ 5.76 - $ 49.77	9.8 - 21.0
Agriculture			
Fall	5.1 - 11.5	$24.07 - $ 47.16	6.5 - 7.5
Winter	7.1 - 8.9	$27.73 - $ 32.80	6.3 - 8.5
Spring	3.9 - 39.9	$ 6.45 - $ 58.45	5.8 - 21.4
Anthropology			
Fall	14.5 - 82.5	$ 3.38 - $ 18.63	12.6 - 64.0
Winter	0.7 - 16.1	$15.47 - $361.75	1.0 - 17.0
Spring	18.1 - 55.8	$ 4.25 - $ 13.71	17.5 - 45.0
Art			
Fall	4.1 - 21.7	$13.06 - $ 33.61	5.7 - 32.3
Winter	6.1 - 43.7	$12.75 - $ 28.37	4.2 - 51.0
Spring	3.1 - 25.0	$ 3.57 - $ 81.90	7.0 - 23.1
Biblical Languages			
Fall	9.0 - 41.3	$ 6.57 - $ 29.12	9.3 - 30.5
Winter	8.6 - 48.0	$ 5.78 - $ 24.84	9.0 - 29.5
Spring	9.4 - 13.8	$13.50 - $ 28.97	8.4 - 19.0
Biology			
Fall	12.8 - 34.9	$ 7.28 - $ 18.87	8.0 - 44.5
Winter	14.3 - 36.8	$ 7.05 - $ 13.88	20.1 - 40.0
Spring	10.0 - 35.1	$ 6.98 - $ 29.83	13.6 - 35.9
Business (Mgmnt.)			
Fall	8.5 - 22.5	$11.24 - $ 25.12	6.3 - 33.7
Winter	3.2 - 25.8	$ 9.86 - $ 55.12	5.0 - 22.1
Spring	7.8 - 26.6	$10.43 - $ 31.85	10.9 - 20.8
Chemistry			
Fall	14.3 - 28.6	$ 9.46 - $ 15.86	15.3 - 37.3
Winter	9.8 - 23.8	$11.31 - $ 22.06	11.2 - 26.7
Spring	9.6 - 23.2	$ 9.83 - $ 30.83	13.5 - 57.6
Communication (Brdcstg, Media)			
Fall	2.9 - 15.6	$16.29 - $ 76.22	5.8 - 15.8
Winter	12.7 - 22.3	$ 9.56 - $ 16.95	1.7 - 16.2
Spring	5.7 - 19.5	$13.62 - $ 38.88	4.3 - 12.8

RANGES FOR THREE STATISTICS
1972-73

Discipline	Student/Faculty Ratio	Tchr Cost/Cr. Hr.*	Av. Class Size
Data Processing (Info. Sc.)			
Fall	2.7 - 13.4	$22.64 - $ 74.50	3.5 - 22.0
Winter	4.0 - 17.0	$ 7.15 - $ 82.64	5.0 - 14.7
Spring	11.0 - 22.4	$13.73 - $ 23.93	6.0 - 31.7
Economics			
Fall	8.1 - 21.0	$11.80 - $ 27.40	17.0 - 44.0
Winter	5.6 - 20.3	$ 5.21 - $ 42.44	10.3 - 22.0
Spring	7.7 - 19.5	$ 7.82 - $ 28.30	9.0 - 33.0
Education			
Fall	6.2 - 17.2	$12.94 - $ 33.65	7.0 - 22.7
Winter	5.3 - 19.6	$11.67 - $ 38.47	5.8 - 17.2
Spring	5.7 - 17.7	$14.63 - $ 29.66	7.4 - 17.6
English			
Fall	11.3 - 20.5	$ 6.98 - $ 19.99	13.5 - 23.7
Winter	10.5 - 21.2	$12.28 - $ 19.58	15.0 - 22.0
Spring	11.0 - 18.7	$10.57 - $ 21.90	14.8 - 21.6
French			
Fall	4.3 - 12.1	$23.18 - $ 64.87	4.6 - 12.7
Winter	2.3 - 10.6	$26.13 - $ 60.66	3.2 - 19.0
Spring	2.5 - 9.4	$28.25 - $ 45.22	3.0 - 10.3
Geography			
Fall	7.7 - 23.2	$14.80 - $ 26.35	6.0 - 30.0
Winter	0.2 - 21.3	$13.49 - $ 22.91	8.0 - 25.0
Spring	6.6 - 19.7	$10.78 - $ 41.97	5.8 - 20.0
German			
Fall	2.6 - 14.0	$18.66 - $ 51.39	4.5 - 10.7
Winter	1.9 - 10.6	$23.56 - $ 54.81	4.0 - 9.1
Spring	2.6 - 12.9	$20.25 - $ 94.22	3.0 - 10.3
Health, P.E., Recreation			
Fall	6.3 - 17.1	$11.87 - $ 31.20	12.5 - 40.9
Winter	5.6 - 14.5	$13.97 - $ 40.03	11.2 - 49.3
Spring	7.1 - 12.8	$16.94 - $ 28.01	11.9 - 37.7
History			
Fall	12.1 - 24.0	$12.27 - $ 16.47	14.3 - 37.2
Winter	13.0 - 26.7	$11.59 - $ 16.25	13.1 - 27.6
Spring	8.0 - 23.8	$ 9.79 - $ 32.91	8.7 - 32.9

RANGES FOR THREE STATISTICS
1972-73

Discipline	Student/Faculty Ratio	Tchr Cost/Cr. Hr.*	Av. Class Size
Home Econ. (Consumer Sci.)			
Fall	4.9 - 18.0	$10.70 - $ 41.31	9.8 - 22.0
Winter	5.8 - 16.1	$11.58 - $ 44.58	8.4 - 16.6
Spring	5.5 - 17.2	$15.79 - $ 36.97	7.7 - 16.6
Industrial Ed.			
Fall	5.0 - 11.3	$23.11 - $ 51.30	6.2 - 10.5
Winter	5.8 - 12.3	$21.16 - $ 43.98	7.1 - 9.7
Spring	6.2 - 11.1	$19.91 - $ 38.95	7.5 - 10.3
Journalism			
Fall	3.1 - 10.3	$19.14 - $ 87.71	5.7 - 11.0
Winter	5.3 - 9.4	$11.76 - $ 51.78	4.8 - 9.3
Spring	7.1 - 11.0	$16.82 - $ 39.07	4.5 - 8.8
Library Science			
Fall	1.9 - 14.0	$19.23 - $ 82.36	2.0 - 20.0
Winter	2.4 - 18.0	$16.14 - $102.95	2.0 - 28.0
Spring	2.5 - 9.1	$25.99 - $ 98.41	5.3 - 8.5
Mathematics			
Fall	9.5 - 22.1	$11.12 - $ 24.52	13.8 - 24.5
Winter	7.4 - 32.6	$ 7.88 - $ 30.48	8.4 - 24.1
Spring	7.4 - 19.8	$12.30 - $ 25.34	9.6 - 20.4
Music			
Fall	3.1 - 7.3	$22.76 - $ 72.61	2.3 - 17.3
Winter	3.9 - 7.9	$30.28 - $ 47.88	3.5 - 13.6
Spring	5.6 - 8.0	$32.81 - $ 45.03	4.3 - 18.3
Physics			
Fall	0.6 - 15.0	$12.77 - $480.42	1.5 - 28.3
Winter	5.5 - 51.3	$ 6.74 - $ 40.49	7.0 - 39.8
Spring	5.2 - 52.0	$ 9.46 - $ 42.99	6.7 - 25.3
Political Science			
Fall	4.2 - 17.3	$20.44 - $ 63.03	6.6 - 23.0
Winter	4.7 - 17.0	$23.24 - $ 56.31	4.5 - 15.5
Spring	7.7 - 36.0	$ 8.43 - $ 29.15	4.5 - 21.0
Psychology			
Fall	16.2 - 57.3	$ 4.36 - $ 14.23	17.4 - 53.2
Winter	11.5 - 48.2	$ 3.24 - $ 19.71	11.6 - 44.8
Spring	10.9 - 85.0	$ 2.99 - $ 22.58	15.1 - 33.0

RANGES FOR THREE STATISTICS
1972-73

Discipline	Student/Faculty Ratio	Tchr Cost/Cr. Hr.*	Av. Class Size
Religion (Theology)			
Fall	18.2 - 36.7	$ 6.15 - $ 11.39	20.2 - 51.0
Winter	19.7 - 31.9	$ 7.51 - $ 11.54	22.3 - 35.5
Spring	14.0 - 29.8	$ 8.03 - $ 17.79	23.6 - 38.0
Secretarial Sc. (Office Admin.)			
Fall	6.1 - 12.4	$19.63 - $ 30.46	5.6 - 12.9
Winter	6.0 - 13.0	$15.07 - $ 39.56	6.6 - 11.7
Spring	6.3 - 14.1	$14.24 - $ 36.65	7.8 - 11.6
Sociology			
Fall	13.0 - 31.2	$ 7.50 - $ 17.16	14.8 - 59.7
Winter	19.4 - 40.0	$ 7.74 - $ 15.02	14.1 - 58.0
Spring	16.8 - 44.6	$ 4.40 - $ 12.48	16.3 - 36.7
Spanish			
Fall	5.4 - 24.0	$11.30 - $ 29.56	3.5 - 16.0
Winter	3.6 - 22.5	$ 3.49 - $ 49.80	3.7 - 11.0
Spring	2.8 - 64.0	$ 3.63 - $ 79.61	6.3 - 10.7
Speech (Rhetoric & Pub. Address)			
Fall	6.0 - 59.5	$ 4.56 - $ 38.07	4.9 - 43.0
Winter	7.8 - 56.2	$11.64 - $ 27.62	8.0 - 21.0
Spring	3.9 - 25.5	$ 9.29 - $ 42.84	17.5 - 19.8
Speech Pathology			
Fall	4.7 - 7.2	$30.48 - $ 46.31	6.0 - 7.9
Winter	2.2 - 8.1	$23.49 - $ 59.94	2.8 - 12.6
Spring	2.9 - 19.3	$ 9.88 - $ 80.85	7.0 - 15.3

*This information is in quarter hour terms. Semester institutions should take 2/3 of their figure to make comparisons.

SUMMARY CLASS REPORT CARD I

Columns

1-4 should be punched SCR1

5 should be punched for your institution II – Oakwood

6-9 should be punched for academic *discipline* of the course not necessarily for department in which it is taught, e.g.:

BS 201 *Personal and Social Adjustment* should be punched psychology 2001 for discipline

BS 211 *Introduction to Anthropology* should be punched anthropology 2202 for discipline

BS 431 *Afro-American Culture and Life* should be punched sociology 2208 for discipline

10-12 The course number should be punched here, e.g.: 431 for BS 431.

13,14 The section number (if any) should be punched here, e.g.: 01 for Section no. 1.

15,16 Credit hours for course, e.g.: 04 for 4 hours

17 Partial credits are punched here, e.g.: 1 for 1/4 hr., 2 for 1/2 hr., and 3 for 3/4 hr.

18-26 Instructor's Social Security Number

27-30 Number of students enrolled on 15 day of classes, e.g.: 0021 for 21.

31-33, 46-48, or 61-63 Number assigned by college to a particular building in order to identify it. Information is usually in business manager's office, e.g.: 100

34-37, 49-52, 64-67 Room number of particular building or area (playing field – must be a numbered area)

38-41, 53-56, 68-71 Time course begins in military time, e.g.: 8:00 a.m. = 0800; 7:30 p.m. = 1930

42, 57, 72 Number of separate meetings per week; e.g.: 1 for one session, 2 for 2, etc.

43-45, 58-60, 73-75 Number of minutes of faculty-student contact per session, e.g.: 50 for a one-period class; 100 for a two-period class; 75 for a one and one-half period class

If a course has only lecture sessions, only columns 31-45 are punched.

If a course has only laboratory sessions, only columns 46-60 are punched.

If a course has only *other* sessions, only columns 61-75 are punched.

If a course has a combination of these sessions, then all the appropriate columns are punched.

Note that two extra categories have been added to *other* session codes:

I for regular lecture instruction at an odd hour from the regular lecture time

J for regular laboratory instruction at an odd hour from the regular laboratory time

76 ID for others is punched here to identify other type of activity coded in columns 61-75

77 Punch code for type of academic term, e.g.: 1 for quarter, 2 for semester

78 Term identification – if a semester institution punch 1 for autumn, 2 for winter-spring, and 4 for summer term

79,80 Punch last two digits of the year, e.g.: 72 for 1972

General Notes: If a differer ·r conducts the laboratory than the lecture, punch two cards one for laborator for lecture and give appropriate credit hours separately

Other Session Codes:

A = Activity Course — . Music (choir, ensembles, orchestra, band); Art (drawing).

E = Individual Instruction — Private music lessons, reading, special projects, individualized instruction.

The purpose of the trailer card which must immediately follow the summary class report card to which it refers is to let us know how many students with which majors are in each class, e.g.: 10 English majors, 8 religion majors, 4 behavioral science majors, etc.

Columns 1-4 are punched SCR(2), (3), (4) depending on the number of cards necessary to cover all the majors at 10 majors to a card.

SUMMARY CLASS REPORT CARD 1

Card Identification

S	C	R	1
1	2	3	4

SCR1 = Summary Class Report Card 1

Institution Identification

5

A Andrews University
B Atlantic Union College
C Canadian Union College
D Columbia Union College
E Kettering College of Med. Arts
F Kingsway College
G Loma Linda University
H Oakwood College
I Pacific Union College
J Southern Missionary College
K Southwestern Union College
L Union College
M Walla Walla College

Discipline # (See back of page for listing) — 6 7 8 9

Course # (SUC delete 3rd digit-dept. no.) — 10 11 12

Section # — 13 14

Credit Units

Units — 15 16

Qtrs. — 17

1 = ¼ hr
2 = ½ hr
3 = ¾ hr

Instructor's Social Security # — 18 19 20 | 21 22 | 23 24 25 26

#Students Enrolled — 27 28 | 29 | 30

LECTURE SESSIONS–

Bldg. # — 31 32 33

Room # — 34 35 36 37

Time Course Begins (Military - 0825) — 38 39 40 41

Frequency (Meetings Per Week) — 42

Fac-Stu Contact (Minutes) — 43 44 45

LABORATORY SESSIONS–

Bldg. # — 46 47 48

Room # — 49 50 51 52

Time Course Begins (Military - 0825) — 53 54 55 56

Frequency (Meetings Per Week) — 57

Fac-Stu Contact (Minutes) — 58 59 60

OTHER SESSIONS–

Bldg. # — 61 62 63

Room # — 64 65 66 67

Time Course Begins (Military - 0825) — 68 69 70 71

Frequency (Meetings Per Week) — 72

Fac-Stu Contact (Minutes) — 73 74 75

ID for Other (See back of page) — 76

Term-Year Identification

1 = Quarter
2 = Semester — 77

78

1 = Autumn
2 = Winter
3 = Spring
4 = Summer

Last two digits of year - e.g. 72 — 79 80

FACULTY SALARY, BENEFITS AND ASSIGNMENTS

Card Identification

F	S	B	A
1	2	3	4

FSBA = Faculty Salary, Benefits and Assignments

Institution Identification

5

A Andrews University
B Atlantic Union College
C Canadian Union College
D Columbia Union College
E Kettering College of Med. Arts
F Kingsway College
G Loma Linda University
H Oakwood College
I Pacific Union College
J Southern Missionary College
K Southwestern Union College
L Union College
M Walla Walla College

Faculty Social Security Number

6	7	8	9	10	11	12	13	14	

Salary

15	16	17	18	19

See back of this page for listing of Discipline Codes

Fringe Benefits (Prerequisites)

20	21	22	23	24

Discipline				Percent		Discipline				Percent		Discipline				Percent	
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

Discipline				Percent		Discipline				Percent		Discipline				Percent	
43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

Discipline				Percent		Discipline				Percent		Unused			
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76

Term Identification

77

1 = Quarter
2 = Semester

78

1 = Autumn
2 = Winter
3 = Spring
4 = Summe

Year

79	80

Last two digits of year - e.g. 72

BUILDING PROCESS FOR A MANAGEMENT INFORMATION SYSTEM

Presentor(s): Joseph S. White, Moderator
Mr. George Bowie, III
Mrs. Ziner Reid
Mrs. Doris Sawyer
Mr. James Swimpson

Elizabeth City State University
Elizabeth City, North Carolina

77/78

As the University has grown, various offices have come into being to handle the increasingly complex operation of the University.

Traditionally, each of these offices collected the data needed for its own operation and thus, many offices were collecting the same data items from the same sources. If an administrator asked for information not held in the files of his office, then, his staff had to make requests of several offices for information. Since any one of several offices might have a particular piece of information, requests would be passed from office to office. Delays and losses were common. Once all the information was gathered, usually with several offices supplying the same data items, it had to be reduced to a concise report. Now any inconsistency in the data would be noticed, initially, several rounds of re-examining original source documents, making requests for clarification, and ironing out conflicts between offices. Eventually, an administrative decision would have to be made as to which figures to use.

The problems were clear; unnecessary duplication of both data and work, inconsistency, and lack of verification procedures to insure accuracy as request for data continued to multiply. The need for a method of coordinating the collection, processing, and dissemination of data became urgent.

The Chancellor requested that ways and means be developed to have criteria available, in easy access, for long range planning, resource allocations, and program planning and budgeting.

As a result of this mandate from the Chancellor, a task force was formed. Its purpose was to develop an operation and control system.

The operations and control system was to form a data base from which information could be drawn.

The members of the task force represented a cross-section of the University. Their titles ranged from Assistant to the Chancellor to secretaries. The task force followed the line-staff organization so that it could report directly to top management and management could secure cooperation from all areas of the University.

Some members of the task force have received experience from TACTICS, and other organizations committed to aiding developing institutions in building MIS.

Although the basic training and knowledge exist to implement MIS, the entire University has not been committed to its development until May, 1973. The task force met to establish steps in developing a Management Information System and to determine the date that each step was to be completed.

After extensive research and much discussion, we decided that the MIS could be effectively implemented in ten steps. The ten steps decided on were:

1. *To divide the University into logical categories based on the types of data used for specific purposes.* The results of this division were five categories: student, staff, courses, facilities, and finance.
2. *To identify data elements for the five categories.* This was performed by each task force member who searched office files for all reports produced by his office, then listing the data elements from each report.

3. *To compile the data elements by categories.* This involved placing the data elements that each task force member collected into one of the five categories.
4. *To define each data element.* Each data element was given a definition that was agreed on by the task force. This was necessary because communication is often impaired by the many definitions of terms based on colloquial expressions. Wiche and Tactics Data Element Dictionary was used as reference.
5. *To identify the right source of each data element.* By assigning the responsibility of collecting specific data elements to key offices, it will eliminate the necessity for having a student fill out several forms requesting the same information and the possibility of a single student appearing under two, or more, different accounts, and so on. If each office is aware of what data it is responsible for, well-documented procedures can be developed which would insure more accuracy and better accountability.
6. To determine the frequency of need for each data element, (usually dictates the availability).
7. *To document procedures.* With each office being aware of what data elements it is responsible for, documentation procedures should commence. The procedures should identify the origin, the staff member, by title, who is responsible for handling the data, and the person who verifies the data before it becomes a part of the data base.
8. *To establish the priorities for implementation.* With the completion of step 7, all requirements have been completed for a viable data base for all five categories. Which of the five categories should be developed first? After a lengthy discussion, the student data base was decided on.
9. *To build the student base.* With the procedures established in step 7 for collecting data elements, data collecting was performed with minimal difficulty.
10. *To test program and modules.* During the development of each category and/or module, no program was used in regular production. The task force ruled that all modules must go through a complete cycle before it is released for production.

SOURCE: (1) ADMISSION'S OFFICE (2) REGISTRAR'S OFFICE (3) DEAN'S OFFICE (4) RESEARCH OFFICE (5) TESTING & SCORING (6) BUSINESS OFFICE (7) FIN. AID OFFICE (8) BOOKSTORE (9) MAINTENANCE (10) DEVELOPMENT (11) FEDERAL PROGRAMS (12) CHANCELLOR'S OFFICE (13) STUDENTS' PERSONNEL (14) DEPT. CHAIRMAN (15) LIBRARY

DEMOGRAPHIC AND BIOGRAPHICAL DATA

SOURCE OF DATA	**	ELEM NO.	ELEMENT TITLE	DEFINITION OF ELEMENT
1	W-BS	001	Name	The legal combination of words by which the student is known.
1	W-BS	002	Student Identification Number	The unique number assigned by the institution to identify each individual considered to be a student at the institution.
1	W-BS	003	Social Security Number	The number assigned to an individual under the Federal Insurance Contribution Act.
1	W-BS	004	Sex	The sex of the student, male or female.
1	W	005	Birth Date	The calendar date of birth as designated on the legal registration or certificate.
1	W	006	Citizenship	The country in which the student is legally a citizen.
1	W	007	Civil Rights Racial Category	An indication of the student's ethnic origin.
1	W	008	Geographic Location at First Admission -- County	An institutional defined code for the country in which the student resided at the time of first admission to the institution.
1	W-BS	009	Geographic Location at First Admission -- State	The U.S. Postal Service Code for the state in which the student resided at the time of first admission to the institution.
1	W	010	Marital Status	An institutionally defined code for the legal status of the student with respect to wedlock.
13	AR	011	Housing Status	An institutionally defined classification of the type of housing in which the student resides; e.g., institution-operated dormitory, fraternity/sorority, private housing, etc.
1	W-BS	012	Fee Residency Status	An institutionally defined code for the student's residence status for purposes of fees and tuition payment; e.g., in-state, out-of-state, out-of-district.

**These codes are used to identify the time that the Data Elements are available for use. Refer to page No. 3 for definition of codes.

SD-00

SOURCE: (1) ADMISSION'S OFFICE (6) BUSINESS OFFICE (11) FEDERAL PROGRAMS
(2) REGISTRAR'S OFFICE (7) FIN. AID OFFICE (12) CHANCELLOR'S OFFICE
(3) DEAN'S OFFICE (8) BOOKSTORE (13) STUDENTS' PERSONNEL
(4) RESEARCH OFFICE (9) MAINTENANCE (14) DEPT. CHAIRMAN
(5) TESTING & SCORING (10) DEVELOPMENT (15) LIBRARY

DEMOGRAPHIC AND BIOGRAPHIC DATA STAFF DATA

SOURCE OF DATA	**	ELEM NO.	ELEMENT TITLE	DEFINITION OF ELEMENT
6	WCO	001	Name	The legal combination of words by which the employee is known.
6	WCO	002	Staff Identification Number	The unique number assigned to each individual considered to be an employee by the institution.
6	WCO	003	Date of Birth	The calendar date of birth as designated on the employee's legal birth registration or certificate.
6	WCO	004	Sex	The sex of the employee, male or female.
6	WCO	005	Marital Status	The legal status of the employee with respect to wedlock.
6	WCO	006	Citizenship Status	The code that indicates the employee's nationality and visa type, if appropriate.
6	WCO	007	Civil Rights Racial Category	An indication of the employee's ethnic origin.
6	WCO	008	Address -- Street/Apartment	The street identification or P.O. Box number of the location at which the employee may be found or reached.
6	WCO	009	Address -- City	The city in which the employee's residence exists.
6	WCO	010	Address -- State	The U.S. Postal Service designation of the state in which the employee's place of residence exists.
6	WCO	011	Address -- Zip Code	The U.S. Postal Service Zip Code designation for the employee's place of residence.
6	WCO	012	Address -- Telephone Number	The telephone number of the employee or that telephone number through which the employee may be reached.
6	WCO	013	Campus Office -- Campus	The institutionally defined designation for the campus of the institution where the employee's office is located.

**These codes are used to identify the time that the Data Elements are available for use. Refer to page No. 3 for definition of codes.

SOURCE:

(1)	ADMISSION'S OFFICE	(6)	BUSINESS OFFICE	(11)	FEDERAL PROGRAMS
(2)	REGISTRAR'S OFFICE	(7)	FIN. AID OFFICE	(12)	CHANCELLOR'S OFFICE
(3)	DEAN'S OFFICE	(8)	BOOKSTORE	(13)	STUDENTS' PERSONNEL
(4)	RESEARCH OFFICE	(9)	MAINTENANCE	(14)	DEPT. CHAIRMAN
(5)	TESTING & SCORING	(10)	DEVELOPMENT	(15)	LIBRARY

FINANCE RELATED ELEMENTS

SOURCE OF DATA	**	ELEM NO.	ELEMENT TITLE	DEFINITION OF ELEMENT
6	D	001	Purchase Order Number	The vendor's assigned number located in the upper right hand corner of purchase order form.
6	D	002	Subhead or Division Code	Number used to distinguish the institutional account to be affected, whether academi`, auxiliary, special program or other.
6	D	003	Department Code	Number assigned by the business office to identify a specific department account.
6	D	004	Line Item Code	A code to classify expenditures.
6	D	005	Item Description	A catalogued description of item.
6	D	006	Quantity	The amount requested by lot per item.
6	D	007	Encumbrances	The actual amount in dollars and cents of a purchase order.
6	D	008	Transaction Date	The month, day, and year of actual transaction.
6	D	009	Vendor's Name	The name legal of party or company from whom item is requested and/or will receive payment.
6	D	010	Invoice Number	The vendor's transaction number
6	D	011	Check Date	The month, day and year of the written check.
6	D	012	Check Number	The number which will affix each check in numerical sequence.
6	D	013	Invoice Date	The month, day, and year that the invoice was prepared.
6	D	014	Vendor's Number	The name of a company or individual from whom an item(s).

**These codes are used to identify the time that the Data Elements are available for use. Refer to page No. 3 for definition of codes.

SOURCE:

(1)	ADMISSION'S OFFICE	(6)	BUSINESS OFFICE	(11)	FEDERAL PROGRAMS
(2)	REGISTRAR'S OFFICE	(7)	FIN. AID OFFICE	(12)	CHANCELLOR'S OFFICE
(3)	DEAN'S OFFICE	(8)	BOOKSTORE	(13)	STUDENTS' PERSONNEL
(4)	RESEARCH OFFICE	(9)	MAINTENANCE	(14)	DEPT. CHAIRMAN
(5)	TESTING & SCORING	(10)	DEVELOPMENT	(15)	LIBRARY

FACILITIES-RELATED ELEMENTS

SOURCE OF DATA	**	ELEM NO.	ELEMENT TITLE	DEFINITION OF ELEMENT
6	MS	201	Room Identifier	An institutionally defined identifier for the room. Normally this is the "Room Number."
6	MS	202	Room Use	Categorization of rooms by primary use in accordance with the *Higher Education Facilities Inventory and Classification Manual* (Romney, 1972).
6	MS	203	Assignable Square Feet	The floor area of the room, measured between the principal surface of the walls and partitions at or near floor level.
6	MS	204	Organizational Unit	An institutionally defined code for the organizational unit or department to which the room is assigned.
6	MS	205	Program Identification	The program to which the activities occurring in this room contribute.
6	MS	206	Actual Number of Stations	The actual number of stations for primary occupants or users of the room.
6	MS	207	Optimum Number of Stations	The number of stations that would be located in the room if the optimum station layout were achieved.
6	MS	208	Station Type	An institutionally defined code for the type of station within this room e.g., fixed of movable chairs, table seating, stools, lab stations, desks, etc.
6	MS	209	Functional Suitability -- Room	An institutionally defined rating for the appropriateness of the room for its assigned activities, e.g., satisfactory, needs major renovation, inadequate for this program, etc.
6	MS	210	Room Accessibility	An indication of whether or not this room is accessible by a wheel chair.
6	MS	211	Special Features	An institutionally defined code describing the special features for this room. May be based on programmatic factors or maintenance factors; e.g.,

**These codes are used to identify the time that the Data Elements are available for use. Refer to page No. 3 for definition of codes.

DEFINITION OF CODES
AVAILABILITY OF DATA BY FREQUENCY AND/OR TIME

CODE	CODE DESCRIPTION
D	*Daily* – This Data Element should be available for use on or before four o'clock (4:00) each day.
W	*Weekly* – This Data Element should be available for use on or before four o'clock (4:00) each Friday.
M	*Monthly* – This Data Element should be available for use on or before four o'clock (4:00) the last Friday of each month.
Q	*Quarterly* – This Data Element should be available on the last Friday of each quarter commencing July 1 of the fiscal year.
BS	*Before Semester* – This Data Element should be available one week (5-Days) before the beginning of each semester.
MS	*Mid-Semester* – This Data Element should be available one week before Mid-Semester evaluation.
DR	*During Registration* – This Data Element should be collected and made available during Registration.
AR	*After Registration* – This Data Element should be available at the end of the next day following each Registration.
AX	*After Examination* – This Data Element should be available 48 hours after examination.
CY	*Calendar Year* – This Data Element should be available at the beginning of each calendar year.
FY	*Fiscal Year* – This Data Element should be available at the beginning of each fiscal year.
WCO	*Whenever Change Occur* – This Data Element should be available as soon as a change occur in any of the following categories: Student Elements, Course Elements, Facility Elements, Finance Elements, and Staff Elements.

NOTE: In instances where there are unpredictable or unscheduled changes such as in Staff and Facilities, special procedure should be developed to have this data available immediately whenever changes occur.

A PLANNING, MANAGEMENT AND EVALUATION SYSTEM FOR THE ADVANCED INSTITUTIONAL DEVELOPMENT PROGRAM

Presentor(s): Oscar A. Rogers, Moderator
Hilliard Lackey

Jackson State College

ERIC

87/88

Every effective experiment and/or teaching learning experience consist of clearly defined objectives, valid methods and strategies, related human and material resources and evaluation. Permeating both the Basic and the Advanced Programs of Title III of the Higher Education Act of 1965 are the elements of an experiment. However, under the Advanced Institutional Development Program planning, management and evaluation are demanded at a level seldom witnessed under the Basic Program. In our request to AIDP as we have said in applications to the Basic Program, "grant us X number of dollars and we will be able to accomplish various results." Under the Basic Program, we made in many instances reasonable and often essential requests necessary to accomplish minimal development tasks. However, the grants never were funded at a level to accomplish these major developmental ends. Over an eight year period less than an average of $2.5 million were received by major developing institutions for fragmented programs--all essential to development but under-financed. Nevertheless, considering the distance in underdevelopedness many institutions have had to come to reach an advanced stage, Title III funds from 1966 to 1973 have been crucial to development if not to survival. Elements of accountability have been inherent in all Title III funding. Most proposals have included means of documenting accomplishments and achievements.

The application with guidelines for AIDP funds in itself demands planning, management and evaluation. It is a design for accountability.

Planning is required to make the application as well as an evaluation of the planning process of the applicant institution past, present and future.

The applicant institution *lists* the characteristic and sources of its students, relates the employment sources of and for its graduates, describes the social and economic community it serves, provides sources of labor market information, depicts the institution's mission: how it has evolved and developed, and how it is continually evaluated. The mission should have a career education orientation for low income students.

Detailed information must be presented concerning, for example, the addition and deletion of courses. This exercise in relating the history of course addition and deletion is essential. This listing should be continual. From the Curriculum Committee such data ought to emanate periodically. Such information helps with planning, staffing, budgeting and other administrative functions.

The applicant institution relates the status of planning at that institution. Increasingly governing bodies are demanding more indepth planning on the part of College administration and faculties.

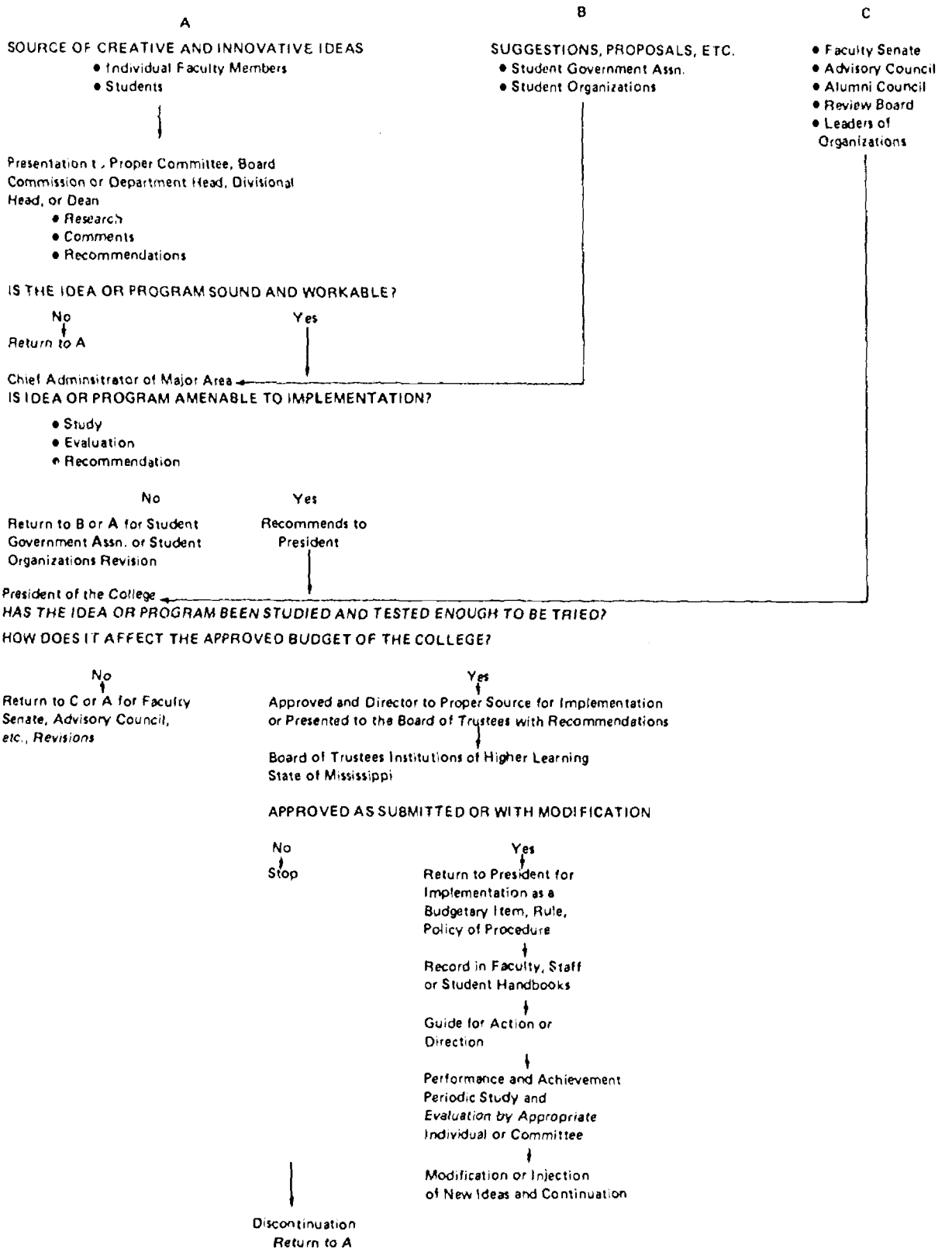
At Jackson State College we have used retreats of students and faculty. A flow chart gives an idea of how we try to involve the total College community in planning.

At Jackson State College, our Director of Institutional Research is responsible for gathering vital statistics about the College. He coordinates and channel all data from the Business Office, Registrar's Office, Admissions Office, directors of self-studies and directors of research and program projects. Ideas from faculty are obtained from faculty members by use of this data are essential to deliberate planning and managering.

It is difficult to decide what to do, why to do it, how to do it, and when will it be accomplished without information and involvement of persons.

FLOW CHART IN THE PARTICIPATION IN PLANNING OF JACKSON STATE COLLEGE

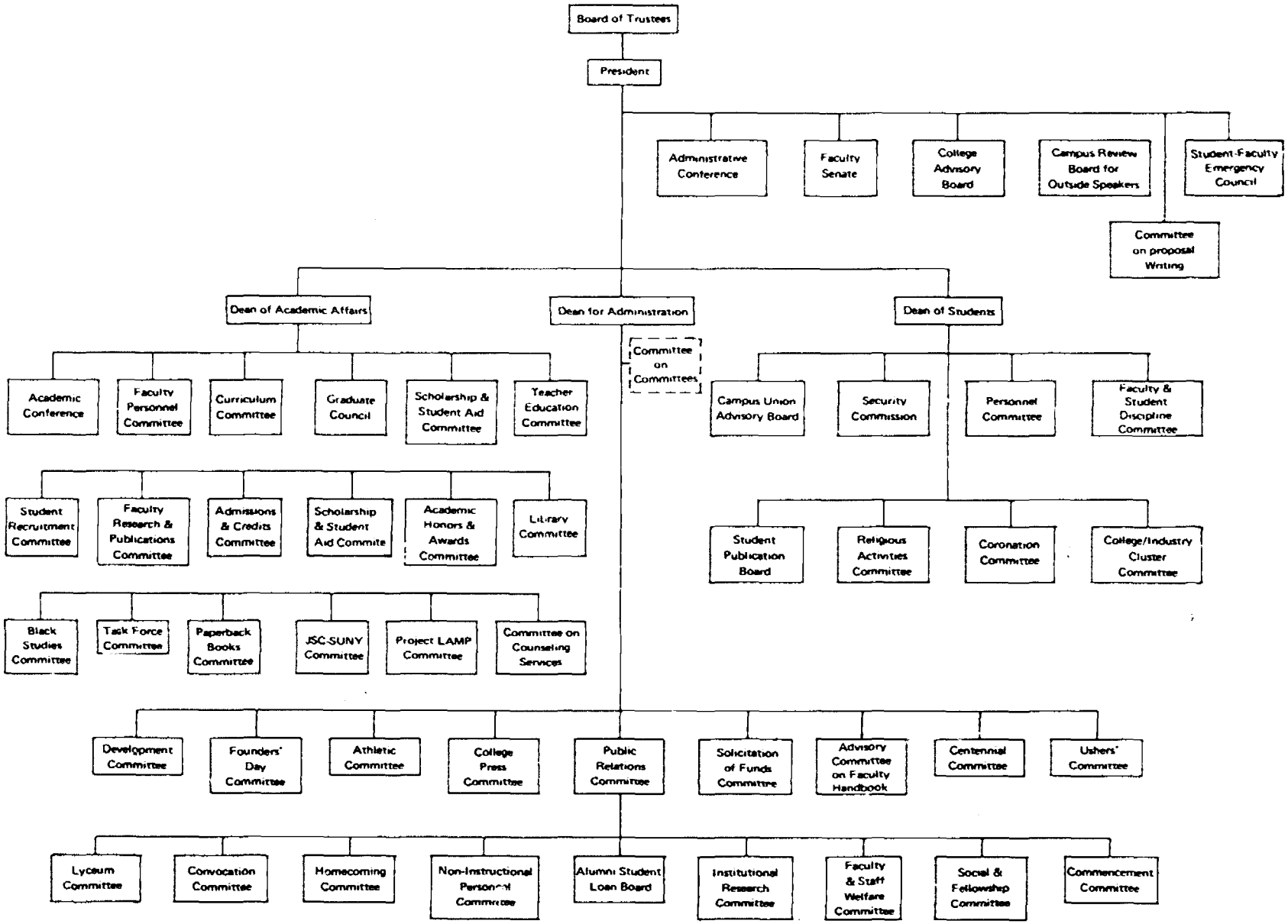
Input-Process-Output



ERIC

JACKSON STATE COLLEGE

Plan of Organization for Committees, Boards, and Commissions



Thus, the planning process can be summarized as follows:

1) solicitation of new ideas about what the institution should be doing from all sources through formal means (committee meetings, questionnaires) and informal means (word of mouth)
2) examination of viability of the idea at the appropriate level and development of supporting documentation if the idea has merit
3) referral to the second level of administration in the College for consideration. At this level all policy matters and other constraints are injected and considered. The Office of Institutional Research documents positive and negative aspects
4) referral to the president with a recommendation. If he concurs the appropriate action level begins to develop in implementation plan while it is presented to the Board
5) If approved the total evaluation plan is developed, and the concept is implemented
6) The impact is assessed and corrections in operations, etc. are made to improve the operation if the overall impact is positive.

II. MANAGEMENT SYSTEMS

The achievement of effective management at Jackson State College is a significant challenge. Different functional units, including academic service and administrative departments, operate somewhat autonomously within the framework of the institution. Each of these units has its own personnel, its own objectives, and its own way of doing things. In order to maintain the integrity of Jackson State, however, some degree of control, or at least direction, must be exercised to keep the objectives of the various divisions and departments compatible with the overall objectives of the institution. It is the function of the Administration to provide this direction, as well as to assist the several units in their operation.

Increasing complexity within the College has, therefore, resulted in greater confusion, duplication, and contradiction in the gathering and reporting of data.

Complexities have also risen in Jackson State's relations with other organizations.

Sophisticated techniques, including the use of data processing, equipment, have been brought to bear on the problem, we use IBM 360/40.

Jackson State administrators became interested in the possibilities of a college-wide administrative information system. This is envisioned as a centralized approach to the solution of a wide range of information deficiencies affecting the entire school. To date, there is no clear understanding of what such a system is composed of, what advantages and disadvantages it has to offer, and how it will service the various departments. The reason is that an information system is not an unique, clearly definable entity. There is no formula which, when followed, will produce a management information system. We know what an information system is, however; it is a concept of what information is available within an organization and how it interrelates. It is a philosophy of organizing information to derive certain benefits if procedures are followed. The objective of a management information system is to provide accurate, timely information in the proper form when and where it has utility. An information pertinent to the operation of the organization is collected once and sorted so that it can be retrieved in the desired format or array from this central storage facility.

The initial groundwork for an integrated management system has been accomplished through the relationship with SUNY-BINHAMTON which was sponsored under previous Title III grants. The two schools have cooperated in developing a framework for a college-wide management information system and are in the process of implementing a student accounts system.

"Management Information System"

Substantial progress has been made in the development of the SUNY-Jackson management information system funded under Basic Title III. These accomplishments include:

- definition of the student accounts system to include program specifications, data elements, file organization and report requirements.
- student record system definition which includes data element definition, file organization, and certain program specifications.
- standard coding file definitions and program requirements.
- beginning analysis of the accounts payable definition.
- beginning analysis of the admissions system.

III. EVALUATION

The program will fall under the general direction of the Vice President of College Relations. He will have responsibility for coordinating and implementing the entire effort. Each major activity will also have an activity manager who will be responsible for the implementation of his respective component. They are as follows:

- Faculty Development -- Vice President of Academic Affairs
- Student Personnel Services -- Dean of Students
- Office of College Relations -- Vice President of College Relations
- Urban Administration Center -- Director of Urban Administration Center
- Management Systems -- Comptroller; Vice President of Academic Affairs;
- Director of the Computer Center.

The Management Systems component has three managers because of its three somewhat separate activities.

All of these individuals will meet quarterly to discuss the progress of the entire program. In addition, each component and the director will prepare an annual report to the President which will contain the following information:

- Previous year's accomplishments
- Previous year's problems
- Next year's objectives
- Next year's strategies
- Significance of the program to the overall development of the institution.

The annual reports will serve as starting points for an annual review between the President and the administration.

These administrative procedures should provide for the effective implementation of the Title III program. Administrative responsibility is clearly placed with the Vice President of College Relations and the activity managers. The quarterly and annual review processes should insure that the program is being carried out and that it is meeting its objectives. The involvement of our President will provide leadership and concern necessary to insure that the program receives the highest priority.

Program evaluation will be based on both the individual activities and total program accomplishment.

Fiscal control of AIDP funds will be under the responsibility of the Comptroller's office and the individual project manager. The financial manager of Federal Funding in the Comptroller's office will have direct responsibility for day-to-day financial administration of the project. This assures that all AIDP expenditures can be separately analyzed. He will process approved purchase requests, validate funding expenditures, approve payments, and prepare quality reports for each activity. In addition, he will record and review expenditures weekly to ensure that budgets are not being over-extended.