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HISTORY

NEWARK TECHNICAL SCHOOL

NEWARK COLLEGE OF ENGINEERING

NEW JERSEY INSTITUTE OF TECHNOLOGY

In 1877, the New Jersey Centennial Commission noted that "our value as a State depends upon the development of skilled labor." The movement to found a technical school received strong support from the Newark Board of Trade and on March 23, 1880, State Assemblyman Wilkinson of Essex County introduced "An Act to Provide for the Establishment of Schools of Industrial Education." The bill was passed in 1881 and led directly to the founding of the Institute.

The Board of the Newark Technical School first met on July 1, 1884. The members decided to establish an evening school which would be tuition-free for city residents ... with a grammar school diploma, or in lieu of this, passage of an entrance examination required for admission. The initial curriculum consisted of algebra, geometry, trigonometry, drawing, chemistry and physics. Classes were held five nights a week, while generally the students worked during the day.

A regular college program was considered as early as 1913 and an engineering program was proposed to the Board of Directors in 1916. In 1918, State approval was secured to offer college level courses and the new unit was named the Newark College of Technology at the Newark Technical School. The curriculum included a four year day program leading to a B.S. in Chemical, Electrical and Mechanical Engineering (Civil Engineering was added in 1931, and Industrial Engineering in 1960). In 1920, the name was changed to the College of Engineering of the Newark Technical School and in 1930, the Newark College of Engineering.

The School increasingly shifted its activities to the collegiate program and focused less on strictly vocational courses. The Newark Technical School, which co-existed with the College, began to parallel the first two years of the NCE curriculum. By 1926, those students completing the NTS associate engineering courses (part time for four years) were eligible to enter NCE at the junior level. In 1946, a Master of Science Degree was offered in Chemical, Civil, Electrical and Mechanical Engineering.

In the period following World War II, many new programs were added: A Master's Degree in Management Engineering, 1950; Baccalaureate Degrees in Industrial Engineering, 1960; in Engineering Science, 1968; Doctorates in Engineering Science in Chemical Engineering and Electrical Engineering in 1960; in Mechanical Engineering, 1966; and in Civil Engineering in 1969. The campus grew dramatically in these years.

In 1959 the Research Foundation at NCE was incorporated with its own Board of Directors. Its purpose was to create "opportunities for the professional development of members of the College teaching staff through provision of broadly fundamental research activities." The Foundation grew out of a grant by Thomas M. Cole, President of Federal Pacific Electric Company in 1957.

Foundation activities ranged from programs which supported economically and educationally disadvantaged high school students to basic research. The Foundation at NJIT with its Board of Overseers, continues to provide an invaluable bridge between the Institute and New Jersey's corporate community through a committee structure which provides avenues of communication and through fund raising activities.

In 1973, the New Jersey School of Architecture was established and the Bachelor of Architecture Degree was offered. Baccalaureate Degree programs

were added in Computer and Informtion Science, Engineering Technology, Industrial Administration and Man and Technology.

In 1975, in recognition of the new organization and mission of the Institute, the name was changed to New Jersey Institute of Technology. While holding to its traditional commitment to undergraduate professional education, New Jersey Institute of Technology has taken major steps in graduate programming, research and public service toward meeting its broader institutional mission.

New Jersey Institute of Technology in 1982 consists of the Newark College of Engineering composed of five engineering departments; the New Jersey School of Architecture; and individual departments of Computer and Information Science, Humanities, Mathematics, Physics, Organizational and Social Sciences, Physical Education and Athletics and Aerospace Studies (offering an Air Force Reserve Officer Training Corps program open to nine colleges and universities in northern New Jersey).

Coordination of graduate studies takes place through the Office of the Associate Vice President for Research and Graduate Studies. The Division of Technology is responsible for the administration of baccalaureate programs in Engineering Technology and certificate programs in Technology. The Division of Continuing Education offers courses to professionals with objectives differing from those of the traditional college student. In addition, there are a number of specialized units including the Center for Technology Assessment, the Center for Computer Conferencing, the Center for Pre-College Programs, the Center for Air Monitoring, the Center for Urban Transportation Studies, and most recently the Center for Hazardous and Toxic Waste Management.

In the Fall of 1979, the Institute initiated a Masters Degree Program in Computer Science in Moorestown, New Jersey to meet the needs of RCA employees.

The following year this program was opened to non-RCA employees as well. In addition, upper division course offerings were initiated in consort with two community colleges in South Jersey.

In April of 1981, a three day Symposium on Man and Technology as a part of a year long celebration of the Institute Centennial drew speakers from across the nation. Excerpts from this Symposium highlight the inaugural issue of "Technology and Society," a semi-annual publication which appeared in the Fall of 1981. In 1981, the Institute embarked upon a $12 million Capital Campaign. The four objectives of that campaign include rehabilitation of the Mechanical Engineering building (by the Spring of 1983), the addition of a 75,000 square foot multipurpose building with emphasis upon research, land acquisition and additional on-campus housing.

From the beginning, there has been a natural alliance between NJIT and the region's corporate community. The Institute has evolved from a technical trade school, supplying skilled labor to New Jersey's businesses, to a public center of higher technological education, advanced research and problem-solving public service.

STUDENT PROFILE

Most students attending NJIT come from the northern New Jersey commuting area. Eighty four percent of the 1981 freshman class were drawn from the seven counties which make up the northern part of the state. This has been true historically at the Institute. With respect to in-state enrollments, 94 percent of the full time freshmen are New Jersey residents. This is consistent with comparable state system-wide figures for in-state versus out-of-state enrollments. (New Jersey undergraduate full-time enrollment includes 91.2 percent in-state students, 7.1 percent out-of-state students, and 1.7 percent foreign students).*

In 1979 the Institute opened the first collegiate residence hall in Newark accommodating 210 students. An additional seventy male students are housed in leased facilities at the Newark YM/WCA. The State Master Plan calls upon NJIT to increase out-of-state enrollment to "15 percent of full-time, first-time freshmen." Two additional residence halls are planned. One involves the renovation of an eight story building purchased in 1981, and the other construction of a companion building to the original residence hall.

NJIT students have performed well on the SAT examinations. According to a report published by the Department of Higher Education, the average Mathematics score of 570 was the third highest of all collegiate institutions in the state. The verbal average of 459 ranked fifth highest in the state. The trend for entering NJIT students in recent years has been upward in both SAT and Rank-in-Class.

Fifty three percent of the applicants to NJIT in the Fall of 1981 were accepted and fifty percent of accepted applicants enrolled.

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*NJDHE Data Brief Number 4, September 1981, p. 39

Transfer students enroll primarily at the freshman level (defined as less than 34 transfer credits).

The majority of NJIT students are males (88 percent of full-time undergraduates). The female undergraduate population has been growing steadily from just over 7 percent in 1977 to the 1981 figure of 12 percent. Among undergraduate part-time students, the female population represents just under 9 percent, and among part-time graduate students, 15 percent. In each of these categories, the percentage is increasing steadily.

In the Fall of 1981 black students (366) represent 5.6% of the total enrollment. Black undergraduates constitute 6.5% of that full-time population while Hispanic students represent 4.9 percent of total and 6.4 percent of full-time undergraduate populations. Enrollment of minorities has been rising steadily. Among full time undergraduates, ethnic minorities constitute 18.2% of enrollment.

Total enrollment at NJIT in the Fall of 1981 is 6482, an increase of 4.5 percent over Fall 1980.* Of this total, 3360 (or just over half--51.8%) are full-time undergraduate students. Part-time undergraduates constitute another 22 percent of the total or 1457 students.

Overall graduate enrollment represents 16.6 percent of total enrollment. Only 167 graduates are classified as full-time representing 15 percent of the graduate enrollment and 2.6 percent of total Institute enrollment. Part-time graduate students (911) represent 14 percent of the total enrollment.

Among all students, full and part time (including non-matriculated students), those enrolled in the six engineering degree programs constitute

*Report of the Registrar dated 9/16/81

64 percent of all undergraduates at NJIT. Combined with Engineering Technology Programs, NCE enrollment represents 3/4's of total Institute enrollment. Undergraduate students of the New Jersey School of Architecture represent another 8.5 percent of the undergraduate population. Figures for other academic departments are as follows:

Bachelor of Science in Industrial Administration	3.2%
Computer and Information Science	8.5%
Engineering Technology Degree programs -(65% of these students are enrolled part-time)	10.0%
Man and Technology	0.7%

Within the engineering departments (64 percent of total undergraduate enrollment), the enrollment distribution among major fields is as follows:

Chemical Engineering	18.0%
Civil Engineering	15.4%
Electrical Engineering	31.2%
Engineering Science	3.0%
Industrial Engineering	5.0%
Mechanical Engineering	27.4%
	100.0%

Another 587 students (9.0% of total enrollment) are enrolled in certificate programs of the Division of Technology. These programs are offered part-time, evenings. Most certificate courses are vocationally oriented, but a bridge program exists for transferring these credits into upper level Bachelor Degree Programs in Engineering Technology. Approximately 40 percent of the DOT students utilize this bridge program.

One hundred and forty-eight students are currently enrolled in the four off-campus offerings of NJIT. This represents an increase of 87 percent over 1980 in off-campus programs and courses.

Students at NJIT are expected to maintain a grade point average of 2.00 on a 0(fail) to 4.0(excellent) scale. Probation by the Committee on Academic Standing may result if this standard is not maintained. If a second semester below 2.0 occurs or if the GPA falls below 1.5, suspension may result. Academic policies including those governing appeals and reinstatement are detailed in the publication "Log NJIT." Student rights and responsibilities are also detailed in this publication.

For purposes of diagnosis and guidance, the Counseling Center routinely administers a battery of tests and inventories to incoming students. Given during the spring and summer prior to entrance, these instruments include:

	Duration of Test
N. J. Basic Skills Examination	3.5 hrs.
Faculty designed mathematics-physics examination	1.0 hr.
Toledo Chemistry Examination	1.0 hr.
One page information sheet on study habits	10.0 min.
Student Outcomes Information Services (SOIS)	
Entering Student Questionnaire	15.0 min. (first administered in summer of 1981)

n.b. Architecture students do not take the Chemistry Examination, and students enrolling in BSIA and Man and Technology programs take only the Basic Skills examination and fill out the study habits and SOIS questionnaires.

Two instruments are utilized to assess student attitudes and perceptions: The ACE Freshman Profile (administered during the freshman orientation course) and the Student Outcomes Information Documents of NCHEMS-College Board. According to the former, the financing of their education is a concern to far more NJIT students (62 percent) than the national norm of 46 percent. Sixty percent of NJIT students reported family incomes below $35,000 while twenty seven percent indicated family incomes below $15,000. More than the national norm expect to work at part-time jobs. Only twenty percent of entering freshmen indicated "umemployed and do not care to work while attending college" on the SOIS instrument.

Primary reasons for selecting NJIT according to the Freshman Profile are (in rank order): (1) Good academic reputation. (2) Low tuition. (3) Special educational programs. Seventy one percent listed NJIT as "first choice," and twenty five percent as "second choice." Satisfaction with the Institute and its programs will be further assessed through the use of the SOIS questionnaires at various stages of student progression and analysis of Placement Office Annual Reports.

Analysis of May 1981 graduation statistics (610 undergraduate degrees awarded) reveals that a substantial number of students require more than four years to complete their Bachelor's Degree at the Institute. Only 127 graduates in May 1981 (20.8 percent of the graduating class) entered with the 1977 fall freshman class. At the same commencement, 17.5 percent of the graduates had entered in 1976. It is also interesting to note that 53 percent of the May graduating class were transfer students.

PROGRAM DESCRIPTIONS

Academic Programs are described in three catalogs: "Undergraduate Programs," "Graduate Programs," and the "Division of Technology Certificate Programs." Brief descriptions also appear in the various brochures available including: Undergraduate Programs *, Engineering, Architecture, Cooperative Education, Industrial Administration, Computer Science, Engineering Technology, and Surveying.

Programs will be presented below in the context of the three academic units.

I. New Jersey School of Architecture - 8.5% of Full and Part-Time Total Enrollment

The Architecture curriculum at NJIT consists of two distinct and independent parts -- a two year introductory program emphasizing general studies, and a three year Architecture Program. Completion of the requirements for the Bachelor of Architecture Degree require five years of study. The New Jersey School of Architecture, established in 1975, is accredited by the National Architecture Accrediting Board (NAAB). A visiting team representing NAAB will be on campus one month following the Middle States Team.

II. Newark College of Engineering - 74.1% of Full and Part-Time Total Enrollment

Engineering programs are offered in the five major fields: Chemical, Civil, Electrical, Industrial, and Mechanical Engineering. Engineering Science is a program available as an individualized course of study in an interdisciplinary area of engineering and science. Surveying is a new program offered through the Department of Civil Engineering. Students enrolled in Engineering, Engineering Science and Computer Science pursue a common freshman year. The second year is also quite similar for these majors. Engineering and Computer Science majors require 140 credits for graduation while BSIA and Man and Technology programs require 128.

Engineering and Engineering Technology programs at NJIT are accredited by the Accrediting Board for Engineering and Technology (ABET). The Engineering Accreditation Commission (EAC) of ABET has accredited Engineering Programs through September 1984. The Technology Accreditation Commission (TAC) of ABET reviews the Bachelor of Science in Engineering Technology Programs at NJIT. The most recent visit occurred in November of 1981.

*Reprinted as Appendix A of this report.

III. Third College - 17.4% of Full and Part-Time Total Enrollment.

Six academic departments currently report directly to the Assistant Dean for Academic Affairs: Aerospace, Computer and Information Science, Humanities, Mathematics, Organizational and Social Sciences, and Physics. These departments constitute what is essentially a third academic unit or college. A proposal to adopt such a structure has been under active consideration for some time and is likely to result in the formal organization of a third college in the not too distant future. A resolution recommending this action was on the agenda of the December 16, 1981 Faculty Meeting but could not be acted upon owing to lack of a quorum.

Degree programs offered by this unit include the Bachelor of Science in Industrial Administration, Computer Science, and Man and Technology.

SPECIAL FEATURES

Cooperative Education

The current Cooperative Education Program at NJIT, initiated in 1976, is available to students in Engineering, Computer Science, and the BSIA programs. The program enhances the education of the student with two six month work-experience periods.

Evening Study

All undergraduate and graduate degree programs are available to part-time evening students except for the professional Architecture program.

Educational Opportunity Program

The Educational Opportunity Program provides support services, both educational and financial, for approximately two hundred and fifty educationally and economically disadvantaged students. The program began with twenty students in 1968 as the Engineering Opportunity Program. Counseling staff and a tutorial program are key elements of the assistance provided through EOP. The success achieved through these efforts has led the Institute to look to these programs as a model for campus-wide student assistance and retention

efforts. Student aid is provided through all applicable federal, state, and institutional programs as well as the Educational Opportunity Fund of New Jersey.

Grading System

A system of 4.00 (excellent) to 0 (failing) is utilized at the Institute. A limited number of courses offer a pass/fail option. Through the first nine weeks of the semester, a student may withdraw and receive a "W." After this period, a grade of W-P or W-F must be reported.

Remedial Programs

Skills assessment test scores together with College Board scores and high school performance are considered in making recommendations to students concerning their initial course loads. Designated remedial courses and sequences of these programs are contained in the annual Basic Skills Report to the Department of Higher Education completed at the close of each academic year.

FACULTY AND STAFF PROFILES

The total faculty at NJIT numbers 391. Sixty eight percent (267) teach full-time and 124, part-time. Of the full-time faculty, 68 percent are tenured. The table on the following page provides faculty information by academic department, status, and sex.

Racial-ethnic data for all Institute personnel are maintained and monitored by the Office of Affirmative Action. An annual report to the Department of Higher Education, through a report endorsed by the Board of Trustees of NJIT was recently prepared in accordance with a Resolution of the State Board of Higher Education and presented to the Trustees in November 1981. This report contains the additional information on faculty and non-instructional staff which appears in the two tables at the end of this section.

The Affirmative Action Report for 1981 also contains information on strategies and activities both undertaken and planned which are directed toward increasing the representation of minorities and women. The Institute has embarked upon a program of active national recruiting focusing upon minority faculty members.

The Faculty, which recommends on new programs, changes in academic policy and changes in certain governance matters, consists of all full-time teaching staff in the ranks of Distinguished Professor, Professor, Associate Professor, Assistant Professor, and Special Lecturers. The Faculty Council is a representative body established in 1966 to promote enhanced communication among faculty and between faculty and administrators. Members are elected by the academic departments.

For purposes of collective bargaining, the faculty is represented by an independent organization, the Professional Staff Associ-

1	2		3		4		5		6		7	
Department	Full-time Professors		Full-time Associate Professors		Full-time Assistant Professors		Full-time Instructors		Part-time Teachers		TOTAL Instructional Faculty	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Architecture	2	0	9	1	8	0	8	1	4	2	31	4
Chemical Engineering/Chemistry	13	0	8	1	8	0	6	2	13	5	48	8
Civil and Environmental Engineering	10	0	10	0	5	0	0	0	14	0	39	0
Computer and Information Science	2	0	4	1	3	0	2	1	17	0	28	2
Electrical Engineering	12	0	16	0	1	0	0	0	11	0	40	0
Health and Physical Education	1	0	2	0	0	0	0	0	0	0	3	0
Humanities	7	0	7	0	4	4	3	0	1	2	22	6
Industrial and Management Engineering	3	0	3	0	0	0	6	0	15	0	27	0
Mathematics	4	0	12	0	4	1	4	1	10	1	34	3
Mechanical Engineering	10	0	10	0	5	0	2	0	15	1	42	1
Organizational and Social Sciences	4	0	3	0	4	4	4	0	11	1	26	5
Physics	5	0	9	0	6	1	0	0	1	0	21	1
TOTAL	73	0	93	3	48	10	35	5	112	12	361	30

ation. The organization initially applied for recognition in late 1969 and was recognized in April 1970.

An integral part of governance at the Institute is the extensive Committee structure which has existed for a number of years. A membership listing of the thirty one faculty-staff-administration committees for 1981-82 is appended to this report.

In 1981, in order to better coordinate an even larger number of committees, all of which reported to the President, a format based upon the appropriate action administrator was implemented. In addition, committees were consolidated in accordance with function, with consequent reduction in overall number. The committees provide broad input and involvement relative to issues critical to the operation of the Institute. They function as recommending bodies and have proven to be an invaluable resource.

The extensive community involvement of NJIT personnel is well documented in the Report of the Development of a Community Service Mission and a number of other institutional reports already cited. Current research activities of the faculty are listed in Appendix B. Approximately 140 faculty members (53% of full-time faculty) are engaged in specific research projects including 59 involved in projects sponsored by sources outside of the Institute. Fully 35 faculty "lines" are dedicated to externally and internally funded research. This represents a substantial increase in research activity relative to the prior MSA visitation and an indicator together with a broadened array of programs, expanded graduate programming, and public service activity, of the Institute's emergence as a technological university.

The range of faculty activity has increased as a result of the broadened mission, as have institutional expectations of faculty

performance. The quality of student enrollment has improved with substantial increases in application rates, which have also led to enrollment increases. The foregoing factors, coupled with even a modest number of faculty retirements and resignations, and a national shortage of faculty in many of the areas of the NJIT mission, have resulted in certain pressures. The Task Force Report on Human Resources is concerned with this challenge.

EMPLOYMENT PROFILE
INSTRUCTIONAL STAFF, FULL-TIME

ACADEMIC UNIT	FACULTY	FEMALES		BLACK (not of Hispanic origin)			HISPANIC			ASIAN OR PACIFIC ISLANDER			AMERICAN INDIAN OR NATIVE		
	Total	T	%	M	F	%	M	F	%	M	F	%	M	F	%
Architecture	35	4	11.4	2	0	5.7	1	0	2.9	1	0	2.9			
Chemical Engineering and Chemistry	35	4	11.4							4	0	11.4			
Civil and Environmental Engineering	26	0	0							3	0	11.5			
Computer and Information Science	11	2	18.1							0	1	9.1			
Electrical Engineering	29	0	0							4	0	13.8			
Humanities	24	5	21.0												
Industrial and Management Engineering	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mathematics	25	2	8.0	1	0	4.0	1	1	8.0						
Mechanical Engineering	25	0	0							3	0	12.0			
Organizational and Social Science	18	4	22.2	2	0	11.1				1	0	5.6			
Physical Education	3	0	0	0	0	0	0	0	0	0	0	0			
Physics	21	0	0							1	0	4.8			
University Total	264	21	8.0	5	0	1.9	2	1	1.1	16	1	6.4			

Figures reflect totals as of September, 1981

EMPLOYMENT PROFILE
NON-INSTRUCTIONAL STAFF, FULL-TIME

OCCUPATIONAL CATEGORY		FEMALES		BLACK (not of Hispanic origin)			HISPANIC			ASIAN OR PACIFIC ISLANDER			AMERICAN INDIAN OR NATIVE		
	Total	T	%	M	F	%	M	F	%	M	F	%	M	F	%
Executive/Administrative/Managerial	63	14	22.2	5	1	9.5	-	1	1.6	1	-	1.6			
Professional Non-Faculty	50	23	46.0	4	3	14.0	2	1	6.0	1	1	4.0			
Secretarial/Clerical	123	116	94.3	2	44	37.4	1	3	3.3	-	1	.8			
Technical/Para-professional	49	10	20.4	18	3	42.9	5	1	12.1	1	1	4.1			
Service/Maintenance	91	38	41.8	34	26	65.9	3	1	3.3	0	0	0			
Skilled Craft	36	-	-	3	-	8.3	1	-	2.7	0	0	0			
Institute Total	412	201	48.8	66	77	34.7	12	7	4.6	3	3	1.5			

Figures reflect totals as of September 7, 1981.

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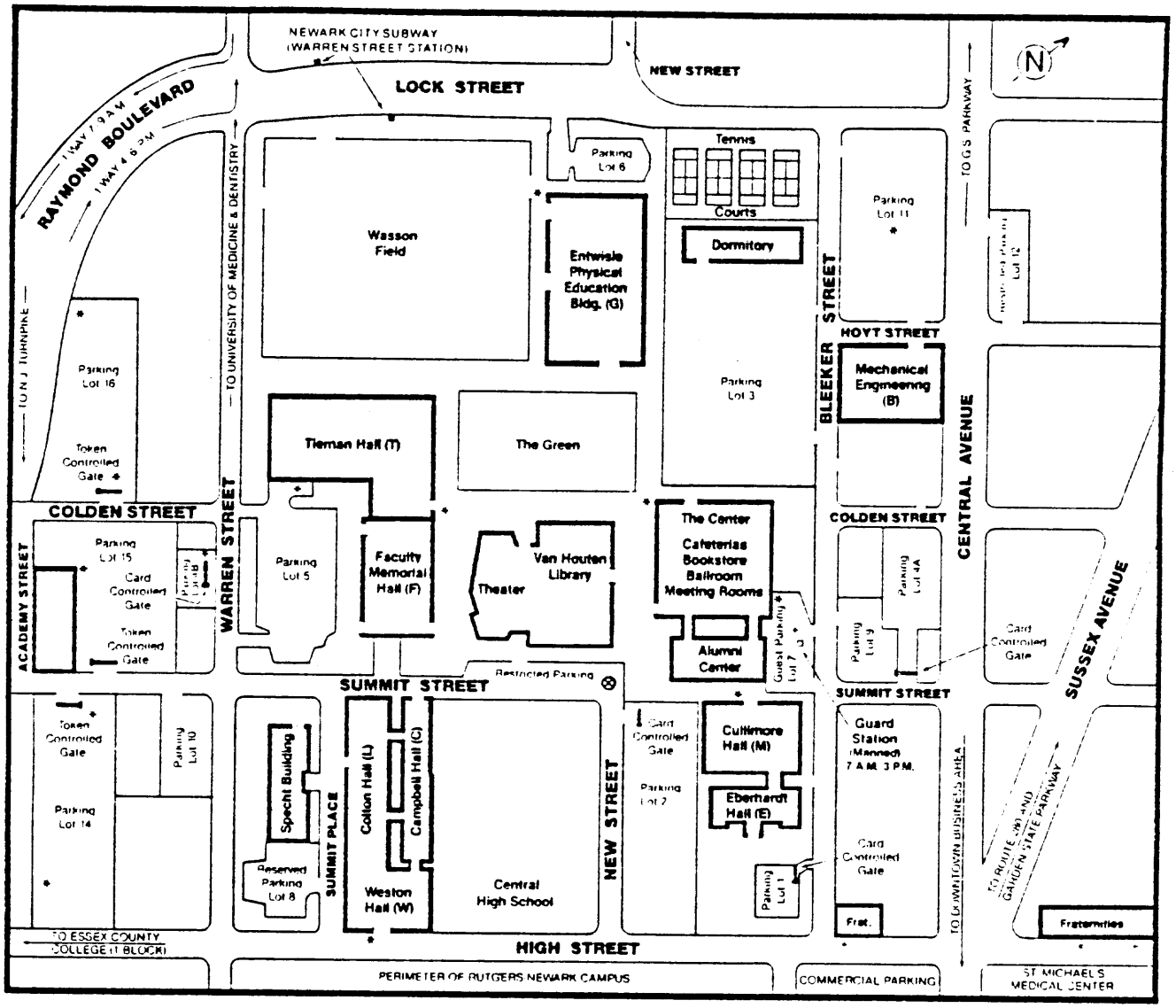

* INDICATES LOCATION OF NJIT SECURITY TELEPHONES.

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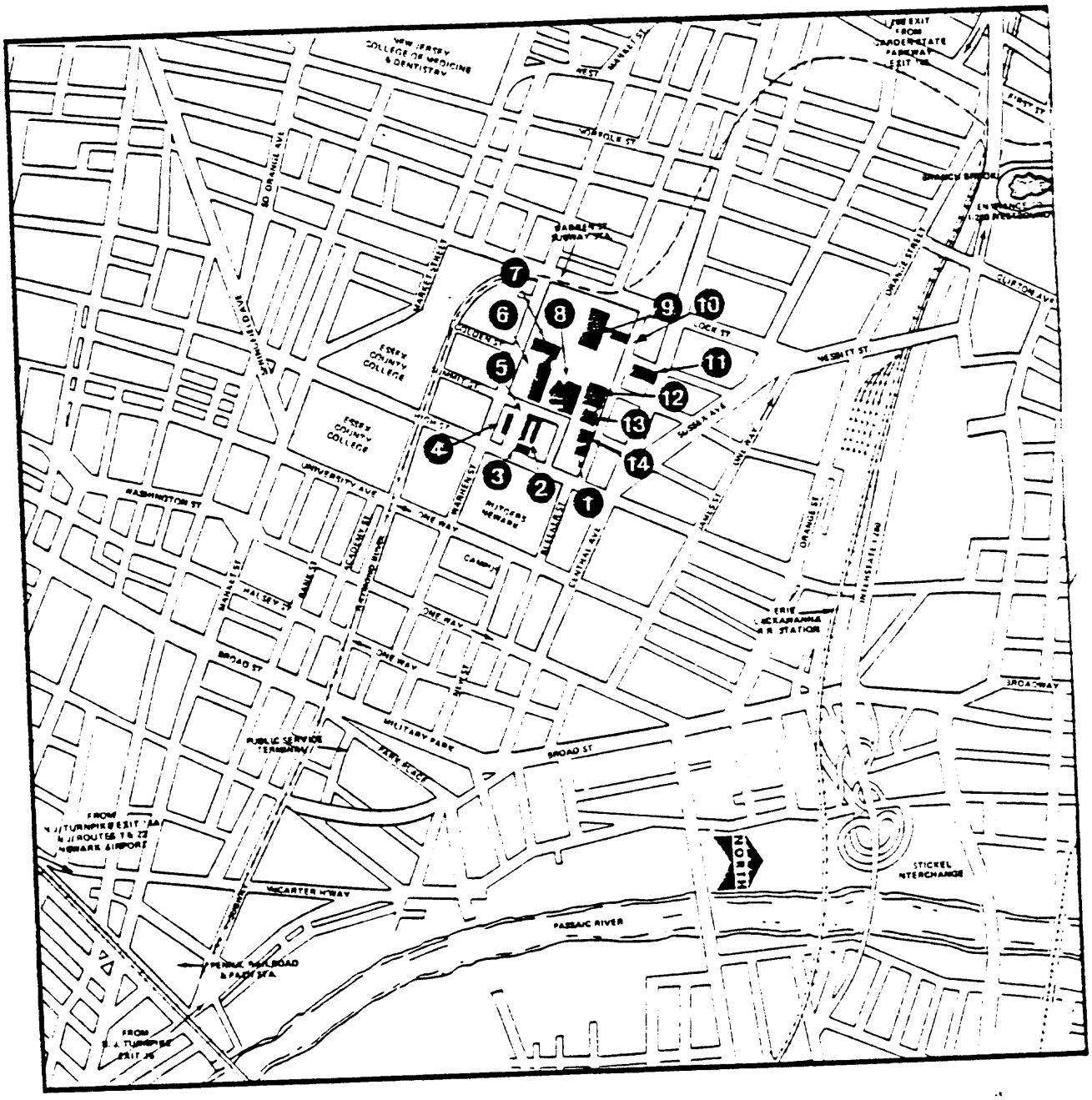
⊗ NJIT-RUTGERS SHUTTLE BUS STOP (SEE CURRENT SCHEDULE FOR TRANSPORTATION DETAILS).

Downtown Newark and the Campus of New Jersey Institute of Technology



FINANCIAL DATA

Institutional resources are allocated pursuant to a carefully prepared budget which is an expression of institutional goals and objectives developed as part of the master planning process. Approximately sixty percent of the Institute's revenue results from funds appropriated by the State pursuant to an annual contract between the Board of Trustees and the Board of Higher Education. The budget process begins with statements of goals and objectives, the NJIT Master Plan, institutional resource allocation studies, and certain planning parameters from the Department of Higher Education. After internal review and approvals, the budget is submitted to the Department of Higher Education prior to hearings by the Department of Higher Education staff and the Budget Committee of the Board of Higher Education. The Board of Higher Education then makes recommendations for the entire system to the Governor. Subsequent to review and modification of the Executive budget presentation, an appropriations measure is submitted by the legislature to the Governor.

Institute expenditures are monitored and controlled through routine management reports which are summarized for presentation at the Board of Trustees' monthly meetings. At the completion of each Fiscal Year, complete financial statements are certified by external, independent public accountants. The most recent report, the year ended June 30, 1981, is included with the study as Appendix C.

As noted, the budget process begins with a statement of goals. The FY 1983 Budget Request included the following goals:

1. Continuation of long-range institutional and departmental planning articulated with the Statewide master planning

process; continuation of a formal system of facilities master planning.

2. Expansion of efforts to meet the needs of changing student populations and a variety of related increasing societal expectations. This includes the introduction of additional elements of an improved student retention program and the offering of additional off-campus courses and programs to meet the needs of individuals, corporations, and government agencies at substantial distances from the Newark Campus.
3. Continuation of and increased attention to efficient and responsible management of the physical plant, recognizing the substantial capital investment in buildings and grounds.
4. Improvement of the management and support capabilities of the Institute.
5. Development of additional approaches to inter-institutional cooperation, with particular emphasis upon the Newark higher educational community.
6. Increased emphasis upon areas of activity within the Institutional mission which address the needs of the State's high technology corporate sector.

Also, included with the budget document is a fiscal summary which provides data for three years: actual appropriations for the prior Fiscal Year 1981, appropriations for the current Fiscal Year 1982, and the request for the following Fiscal Year, 1983.

Through the 1970's, the Institute appropriation from State funds was largely determined in the initial review of the Department of Higher Education through application of a system-wide support formula. In 1979 and 1980, the Institute presented a number of position papers and supporting

documents which argued that certain elements of the system formulas did not reflect the broadened mission of NJIT. Furthermore, other factors were inappropriate to a special purpose institution such as NJIT which cannot produce a lower overall program cost as is possible in other types of institutions by averaging relatively costly programs with other, less expensive, programs. Discussions with Department of Higher Education officials have been positive and in recent years there have been increasing modifications of the formulas pursuant to the initial recommendations of the Institute.

In the Fall of 1981, increasing awareness of the fact that the State is a major national center for research and development, and that the industrial base is reliant upon high technology, led to a State Board of Higher Education proposal to construct a "high technology" oriented budget supplement for higher education. For the FY 83 budget, this resulted in separate funding recommendations for "high-technology" related projects. What influence upon the institutional appropriation this may have remains to be revealed in the months ahead as the New Jersey FY 83 budget is developed.

The fiscal management of the Institute has been strengthened significantly in recent years. Positions including Treasurer and Chief Financial Officer and Directors of Budget, Purchase, and Internal Audit have been added, augmented, or re-established within the past three years. Currently, the Office of Financial Affairs is being reviewed with particular attention being given accounting support for the research and student financial aid functions.

FY 1983 BUDGET REQUEST

FISCAL SUMMARY

	FY81 Actual	FY32 Appropriation	FY83 Request
EXPENDITURES	(000's)		
Instruction	$10,580	$11,865	$14,078
Research, Institute	502	560	688
Public Service	468	549	971
Auxiliary Enterprises	2,203	1,686	1,800
Research, External Sponsored	2,500	2,640	2,800
Academic Support	2,387	2,151	3,278
Student Services	1,603	1,741	2,018
Institutional Support	4,100	4,296	4,697
Physical Plant	3,702	3,931	5,189
Total All Operations	$28,045	$29,419	$35,519
REVENUE SOURCES			
General Services (Primarily Tuition and Fees)	$6,389	$7,046	$7,681
Auxiliary Enterprises	2,203	1,686	1,800
Sponsored Research	2,500	2,640	2,800
	$11,592	$11,372	$12,281
STATE SUPPORT			
Base Appropriation	$15,776	$16,508	$23,238
Salary Program	677	1,539 (A)	(B)
	$16,453	$18,047	$23,238
TOTAL	$28,045	$29,419	$35,519

(A) Amount Requested, Actual Funding Subject To State Budget Transfer

(B) Budgeted In Central State Account, Amount Transferred Subsequent To Start of Fiscal Year.

LIBRARY, MEDIA CENTER AND COMPUTER FACILITIES

During 1980-81, roughly 1,800 students, faculty and staff used the Library each school day. The Library is open 73 hours per week during the Academic Year (50 hours a week during Summer Sessions). Reference service is provided whenever the Library is open and students are encouraged to seek assistance whenever they encounter difficulty in locating information for assignments. In 1980-81, 48,681 books and periodicals and 24,283 slides were borrowed. Orientation tours are arranged for classes upon faculty request. Last year, 735 students utilized this service. These sessions are designed not only to aid students in becoming aware of the resources of the Library, but also to provide instruction in the use of the catalog and various indexes which lead to specific books, reports and journal articles required for research projects and classroom assignments.

The Library makes available certain items of equipment such as coin-operated photocopying machines, typewriters and microfilm and micro-fiche printers. Users have access to calculators, slide viewers and audio cassette players without charge.

Approximately 30,000 square feet of the Robert Van Houten Library building are devoted to library activities. The upper level includes the main reading room housing the circulation desk. In addition to the reading area, the administrative offices are located on this floor. The lower level contains the periodicals collection, a rare book room and a small museum.

Over 128,000 volumes are held in the Library with the collection oriented to the fields of engineering, technology, science, mathematics, architecture, management and computer science. Periodical subscriptions totalling

1,464 are received by the Library and a substantial group of indexing and abstracting services provide access to this information. As a technological, research oriented institution, the Institute experiences an unusually high demand for journals and other periodicals which report on state-of-the-art developments. For this reason, a significant proportion of available resources is allocated to periodicals.

A rare book collection of some two hundred and fifty works illustrates the development of science and technology over the past three centuries. Special collections include the Edward Weston Collection of Personal Papers, Books and Original Equipment. Edward Weston, an inventor, contemporary and rival of Thomas Edison was an early benefactor and founding trustee of the Newark Technical School. The Edward C. Molina Collection contains 1200 books devoted to mathematics, probability, astronomy and related subjects.

Students and faculty of NJIT may use and borrow materials from the libraries of Rutgers University-Newark, the University of Medicine and Dentistry of New Jersey, Essex County College and the Newark Public Library. In addition, books may be borrowed from libraries across the country using traditional interlibrary loan procedures.

Automation was introduced into the Library several years ago with the production of a computer generated periodicals holdings list. This useful publication is updated regularly. In addition, the Library is represented in the New Jersey Union List of Serials coordinated by Rutgers University. This is a computer-produced microfiche catalog indicating which libraries hold specific periodical titles in their collections and is an imporant inter-library loan tool.

A further step towards automation was taken four years ago when the Library joined the Ohio College Library Center network and began using OCLC

terminals for cataloging and inter-library loan purposes. Before the end of the current academic year, a computerized circulation system will be installed. This represents a joint effort of the eight New Jersey State Colleges, the University of Medicine and Dentistry of New Jersey and NJIT. Thus, an intra-state network will be established. Within the next two months, the Library will offer a computerized literature searching service to faculty and students to supplement the printed indexes now available. It is expected that the Library's staff and collection resources coupled with the benefits of automation, will result in substantially improved service to the campus community.

The Instructional Media Center, located in the Library, serves as a central source for media and audio-visual materials and equipment for faculty, staff and students. The Center staff serve as consultants, coordinators, and producers for campus A-V materials available to the college community and general public. In addition, the Center serves as an active laboratory for the instruction of faculty, staff and students in media, audio-visual and related technologies.

The Media Center provides production services in the following formats: overhead transparencies, thermal spirit masters, 35 mm photography, drafting and graphic arts, color video tape, audio tape, super 8 film, and 4 X 5 photography.

The fastest growing format, color video tape, has seen substantial improvement in recent years and is considered a high priority in meeting future demand. In addition to classroom delivery service, the Center maintains a stock of A-V equipment for over-the-counter loan to Institute personnel. The Institute community is encouraged to use this equipment.

The Institute Computer Center and offices are located on the second floor of Colton Hall. The UNIVAC 90/80-3 mainframe, which became operational in 1980, has a memory capacity for two million bytes augmented by disc storage

to one billion bytes. The basic processor capacity can service 64 simultaneous users and has expansion capacity to 200. This equipment was installed under a coordinated plan together with the New Jersey Educational Computer Network and the New Jersey Department of Higher Education. A complete description of the system is contained in the Five Year Plan for Computing of the Institute which is being updated.

There are currently 50 system related interactive terminals on campus. Thirty five are assigned to student/departmental utilization. Twenty of these are "public" terminals located in Colton Hall and available to all faculty and students. The remainder are distributed about the campus with at least one per academic department. In addition, 14 keypunch units are available for "batch" operation.

Equipment is not quite keeping pace with sharply expanding demand. The following excerpt from an October 29, 1981 Memorandum from the Executive Director of Computer Services describes the problem and provides a sense of computer utilization.

"Conversational use of the computer system, that is use via terminal, has nearly doubled since 1980. The number of conversational jobs in September 1980 was 3486. In September 1981 this had increased to 6287. CPU time used by conversational jobs increased from 11:07:22 (hours:min:sec) in September 1980 to 24:35:57 in September 1981."

In response to this demand, twenty additional terminals have been ordered and long range plans have been moved ahead to provide 74 student terminals by the Fall of 1982.

The Computer Center provides three types of service to Institute users: (1) System design, programming, and consulting services oriented to academic and administrative needs through Center staff personnel, (2) Augmented technical assistance through student aides, and (3) Resource information through the Academic Computing Library in the Center.