President’s Problem: Preparing Graduate for Future
“Dynamic” is the word used to describe Georgia Tech’s president, Dr. Edwin D. Harrison. His outstanding accomplishments and achievements put him among the most respected young university presidents in the United States today. Serving his tenth year at Tech, Harrison has brought the reputation of a “good practical engineering school” to that of one of the finest schools in the nation today.

Recently an advertisement in a leading magazine commented on the fact that college students today are more and more inclined to ignore business as an occupation. In a recent interview, Harrison pointed out that not only was this true, but a law degree could no longer run a business and that businesses were reaching out for the graduate with a scientific, technological and engineering oriented background. The unique type of curricula here at Tech is the reason why Tech graduates are becoming the leaders of business and industry not only today but in the future as well. Who is responsible for the increase in the betterment of the Tech student? It’s hard to point out one single person, but you can be sure that Dr. Harrison has played a major role in placing Tech among the top engineering schools in the nation.
ABOVE: Joe W. Guthridge, Vice President — Development.
RIGHT: E. A. Trabant, Vice President — Academic Affairs.
Administration

ABOVE LEFT: James R. Anthony, Vice President — Comptroller. ABOVE: Paul Weber, Vice President — Planning. LEFT: Robert E. Stiemke, Vice President — Programs.
ABOVE: James E. Dull, Dean of Students. RIGHT: William L. Carmichael, Registrar and Director of Admissions.
LEFT: Thomas W. Jackson, Dean of the Graduate Division. BOTTOM LEFT: Sam C. Webb, Acting Dean of the General College. BELOW: R. T. Staton, Jr., Dean of the Undergraduate College. BOTTOM: Arthur G. Hansen, Dean of the Engineering College.
FAR RIGHT: James G. Wohlford, Director of Co-operative Division. RIGHT: Fred W. Ajax, Director of Campus Affairs.
BELOW: Lawrence V. Johnson, Director of Engineering Extension Division.
Administration

TOP: W. Roane Beard, Director of Alumni Affairs. ABOVE: A. P. DeRosa, Director of Placement. RIGHT: Wyatt C. Whitley, Director of the Engineering Experiment Station.
Administration

ABOVE RIGHT: W. Eugene Nichols, Associate Dean of Students. ABOVE: Edwin P. Kohler, Assistant Dean of Students. RIGHT: Harry L. Baker, Jr., Director of Research Administration.
LEFT: Robert B. Wallace, Jr., Director of Publications and Information Services. BELOW: Jerry D. Purser, Assistant Dean of Students. BOTTOM: George C. Griffin, Dean of Students — Emeritus
The remarkable advancements of scientific knowledge in this century, typified by the dawning of the Space Age, have brought many extraordinary changes in the American way of life, making our world more technical with each passing day. Found at the center of this swirling whirlpool of scientific knowledge, scientific research has one aim: the discovery of knowledge leading to a better life for humanity. The determination to conquer space, the growing applications of nuclear power, the ex-
BELOW: Laser optics is one of the newest areas of research today.
ABOVE: Low energy electron diffraction equipment. TOP FAR RIGHT: Frank Neely reactor where most of the nuclear research is carried on. FAR RIGHT: Student tests dye capacity of cloth in textile chemistry lab.
panding physical, chemical and biological sciences — all point toward the betterment of mankind.

Contributions to the advancement of knowledge are coming from many sides, from private industry, from state governments and federal agencies, from organizations and from independent sources of research similar to the kind produced here at Tech. Georgia Tech is creating areas of contribution not only by its involvement in outstanding research but by supplying well educated graduates to government and industry — graduates who have the much-needed

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engineering, scientific, architectural, and management skills. In its research programs Tech is affording these agencies excellent facilities for scientific investigations and an experienced and versatile research staff.

Both basic and applied research are carried out here at Tech. With the Engineering Experiment Station leading the school by involvement in almost all research carried on at Tech, departmental

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ABOVE: Research shows the effects of a stormy sea on a shoreline. FAR RIGHT: Studies in magnetism are possible with the use of this twelve inch electromagnet. RIGHT: Gold plating quartz crystals involves extreme pressures.
research often takes the backlight. Even though this is so, it must be said that this type of research is often more productive. Some departments concentrate on certain basic aspects of research while other departments expand into areas of applied research while still holding certain experimentation in basic research. For example, the school of Chemistry produces on the average ten or more new organic compounds a month while the Engineering Experiment Station might apply these new compounds to public use. Research at Tech is on the move and this is one of the outstanding qualities that makes Tech the school it is today.
Aerospace Places
Emphasis on Research

Research is the key word this year in the School of Aerospace Engineering. Emphasis on research is divided into two major parts: (1) research toward the solution of problems which exist today as they apply to flight vehicles and (2) research which anticipates the aerospace problems of the future. Financing this exploration are four government agencies: the Army, Navy, Air Force, and NASA, all of whom provide contracts or grants to help the program.

A great deal of this research is being aimed toward experimental investigations. The experimental facilities to perform this research will be available upon completion of the new aerospace buildings in the Space Sciences and Technology Center.
LEFT: Dr. Arnold L. Ducoffe, director. BELOW: A.E. library provides for various types of research within the department. BOTTOM: Gas Dynamics apparatus reveals answers to unknown problems.
Architecture: The Skilled Artisan

One never knows what he might find when he walks into the architecture building. Three dimensional model structures, drawing displays, and artwork are among only a few of the types of exhibits located in the building. Evidence of time, hard work and skill shows the type of devoted student the architecture major is.

One of the most involved pieces of work an architecture major concerns himself with is the thesis problem. Before graduation each student is required to solve a problem in design. Research, drawing, and models, all go into the solution of this problem. After completion the problem is presented to the faculty for grading. Courses like free hand drawing, sculpture, and other types of artwork go into preparing the student for graduation.
Biology: Ph.D. to Be Offered

Boasting the newest and fastest growing graduate program on campus, the biology department is developing into one of the outstanding departments on campus. Moving into the new addition of the Radioisotopes Lab, the department expects to improve and expand into new areas. A Ph.D. degree and also an electron optics center are two goals the biology department hopes to reach in the near future.

To complement its curricula, lecture series are planned to give the liberal arts touch that is not obtainable at Tech. Outstanding research in basic cell biology is being carried out while studies in electron spin resonance and cytophotometry outline other work within the department.
Ceramics Department to Split

The field of ceramics has come into a new age. Ceramics provides most of the materials for industry today. The department of ceramic engineering is doing an excellent job in producing and training people to hold the responsibilities of producing materials for industry.

With an increase in student population this year, the department is still growing. Plans in the future include a major split between the science of geology and the ceramics department. A major in geological sciences is now being planned. Increase in graduate enrollment is being experienced also. Research within the department carried on by both graduate students and faculty members is outstanding also. Work with the artificial production of tooth enamel and clay beneficiation are only a few examples of the types produced within the department many other such experiments are carried on.

ABOVE: The production of glass products is important to the field of ceramics. TOP: Dr. Lane B. Mitchell, director.
ChE Acquires Field – Ion Microscope

Recent equipment acquired by the school of chemical engineering is steadily causing the department to climb to one of the best schools of chemical engineering in the nation. Research is on the move within the department. Detailed work in the field of transport phenomena and work in field ion studies are only a few examples of the types of research produced within the department.

Not just anybody can be a chemical engineer. The requirements are quite rigid. Before the ChE major can advance into his junior and senior year, he must have a set point average. As in most fields at Tech, not everyone makes it, but you can be sure that those who do will be the tops in this field.
BELOW: The newly purchased field ion microscope increases research within the ChE department. LEFT: "Unit Operations" is an important facet in the training of the ChE. BOTTOM LEFT: Dr. H. V. Grubb, director.
Chemistry: Ground Broken for New Building

Although the school of chemistry is not one of the largest undergraduate departments on campus, it is certainly one of the most outstanding. Research is only one of the notable qualities of the department. A recently acquired x-ray defractometer adds to the quality of research produced. Its job is to take a known substance in the form of a crystal and analyze its unknown structure. Aided by its own computer, the defractometer added not only to the quality but to the quantity of research produced by the department this year.

The long awaited-for new chemistry building was started this winter, while plans for completion reach into the late part of 1969. Time passes quickly though, and the Tech student will soon find himself in newer surroundings instead of the creaky floors and acid eaten labs of Lyman Hall.
TOP: Dr. William M. Spicer, director. ABOVE: Tiny crystal is mounted on base of defractometer. LEFT: Analytical technique plays an important part in the training of a chemist.
CE Experiences Growing Pains

The School of Civil Engineering is expanding to stay abreast of its responsibilities. Construction of a new building began the first of the year and is scheduled for completion in the fall of 1969. The graduate program is becoming more research oriented and the department is attempting to attract Tech graduates to the program. In addition, Georgia high school graduates are being encouraged to come to Tech since they may find employment readily in Georgia.

The CE is a rare breed of engineer in that he becomes almost immediately useful to his employer following graduation. No prolonged training period is usually required and this results in increased benefits for both the employer and the civil engineer.
BELOW FAR RIGHT: Dr. William M. Sangster, director.
FAR RIGHT: Dr. Benjamin J. Dasher, director.
BELOW RIGHT: Student works on circuit.

A. M. Bush  J. M. Clark  D. C. Fielder

D. L. Finn  F. K. Hurd  W. B. Jones, Jr.

H. L. McKinley  M. F. Moed  F. O. Nottingham
New curricula changes within the School of Electrical Engineering brought about the betterment of the department this year. Besides the addition of two communication theory courses, information science was added as a required course for the EE major. Coordinated with the Engineering Extension Division, the graduate program expanded into off campus work at Lockheed and classes at Rome were aided by telewriter machines.

Research is approaching a relatively new aspect. Work in bio-engineering is beginning to develop and expand. Electronics in medicine is coming into the light with the invention of newer and better types of electronic equipment to aid the field of medicine.
Engineering Graphics
Plans Graduate Program

Engineering Graphics offers the Tech student a chance to expand culturally since it provides him with a new language — the language of engineering. Thus, there is a cultural side to Engineering Graphics in this scientifically oriented society.

The department plans to launch a graduate program starting perhaps in early 1969. This would be more of a lecture program rather than a drawing program and would be based more on theory. As of now, the big source of students in this program would be graduates of engineering courses such as ME. A supplement would be a bachelor's program which does not exist at present.

RIGHT: Dr. R. Kenneth Jacobs, director.
Engineering Mechanics:
The Fundamental of Engineering

Engineering Mechanics has long been recognized as a fundamental of engineering. For this reason the mechanics student receives a broad background so that a program in almost any engineering-based field can be followed after graduation.

Recent advances in science and technology are creating problems for most of the departments on campus. The Engineering Mechanics department is meeting the demands for the solution of these problems by involvement in outstanding research. Work in areas such as stress analysis, vibration and material analysis help to meet the need for the solution of most of the problems.

ABOVE: Dr. Milton E. Raville, director.
English: A Chance for Personal Interpretation

LEFT: Dr. Andrew J. Walker, director
The purpose of the English department here at Tech is to teach future architects, engineers, businessmen and scientists to think, write and speak clearly. Freshmen begin their studies with courses in short story, drama, and poetry. Sophomore courses include various courses in the classics, with emphasis on the great masterpieces. The courses in humanities taken in the sophomore year pave the way for building an awareness of values that give meaning to the life of man.
BELOW: TV instruction was initiated during the year. RIGHT: Dr. Robert N. Lehrer, director.
IE Offers Senior Design Options

The past year has seen the implementation of a new undergraduate program, with senior design options in (a) operations and facilities design, (b) information and control systems design and (c) systems engineering. The new program better integrates new developments of the field, and provide electives which can be used to complement the stem selected. This is an interdisciplinary program supporting option programs in other engineering schools.

Sponsorship of research has increased greatly within the past year, including several projects extending the interaction of Industrial Engineering with other endeavors; for example, a project applying operations research to water quality management; and systems analysis applications to problems of urban development.

Taped TV instruction has attracted considerable attention during the past year, with both favorable and critical comments. The lecture presentation is well organized and supported by semi-notes, and the laboratory sections are conducted as small group tutorials with opportunity for individual attention and discussion.
Industrial Management Expands

The Industrial Management department remains one of the largest and fastest growing departments on campus. Plans for the future include a complete split into a separate school of Industrial Management. Other plans include a new building to be completed in 1970.

Curricula changes and research hold the spotlight for this year. Math course changes include the incorporation of two calculus courses and a linear algebra course. A new faculty lounge and lab space for calculators have been newer additions also. Research studies in "the economic impact of the Braves and Falcons" have been outstanding in the department this year. (NOTE: This page will self-destruct in 30 seconds.)
Information Science Gets Grant

The Information Science Department is expanding with the addition of information science courses to many of the departments’ curricula. Computer technology is advancing as fast as anything else today and the I.S. department is helping with this advancement. A half million dollar grant has helped the department to buy a new computer for the school and plans for a new building and a research center has caused a great deal of excitement. Work in research is presently being performed with computer-instructor relationships and a program is being planned for the near future.

ABOVE: Dr. Vladimir Slamecka, director.
Modern Language Prepares Students

The main concern of the department of modern languages is to train and prepare the Tech student to read technical and scientific materials in the Tech library. Probably the closest thing to liberal arts besides English, the department tries to acquaint the Tech student with the civilization and literature of the language he is studying.

Courses include a variety of different types of languages — Chinese, German, French, Russian and Spanish. With most of the technological books in the library written in foreign languages, it is important for the student to get a good background in language.
BELOW: Mathematics — the precise science.
Mathematics: The Engineer’s Best Friend

Mathematics is the basis for all engineering curricula; that’s why it is so important that the math department be outstanding — and it is. Tech’s engineers become closely associated with Math during the first two years. Four courses in fundamental calculus and one in differential equations are required by most of the departments on campus. The department provides more advanced courses for the student who plans to make math his profession. Numerous extra-curricular courses provide the student with the opportunity to go beyond the required curricula of his department.
BOTTOM LEFT: Dr. S. Peter Kezios, director.
BOTTOM RIGHT: The shop provides many involved hours for the ME.
ME Offers Broad Program

Mechanical Engineering offers a broad based program aimed toward the serious engineering student. Although most entering freshmen enter into such glamorous fields as AE, many will eventually return to ME as they discover its diversity is more suited to their needs. It is broad enough to include almost any facet of engineering.

Many people have the mistaken concept that an ME is someone who carries a wrench in his pocket and a can of oil around his neck. However, ME is far from being a haven for car mechanics. It can and does offer perhaps the broadest program in engineering available at Tech.
Although the Nuclear Engineering department is known officially as a graduate school, many undergraduate schools participate in research within the department. Such facilities as a five megawatt heavy water reactor, a pulsed fast neutron beam generator, a one mev Van de Graff generator and a 12,000 curie cesium 137 radiation source attract not only the attention of other departments but potential graduate students as well. Several of the major study areas include reactor technology, energy conversion and space power, nuclear propulsion and radiation utilization to mention only a few.

TOP RIGHT: Dr. C. J. Roberts, director.
The purpose of the physical training department here at Tech is to keep the Tech student in shape physically while he goes through the mental strain before graduation. Freshman courses include applications in swimming, track and gym while the sophomore enjoys the more recreational sports of tennis, football, and basketball, all with slight variations according to the season. This year the department offered a supplementary course for juniors and seniors who have completed the requirements of the basic courses. This course involved the application of exercise once a week for students who were interested in keeping fit.
The physics department is now beginning to feel the effects of the curricula changes of last year. Experimentation with sophomore courses are still producing material and results for future changes.

With the move into its new building, the department is beginning to expand research with the acquirement of new equipment and space. The graduate program is still flourishing while students do important work in such areas as atomic, nuclear, solid state, and neutron diffraction studies. These are only a few examples of the work being produced within the department.
New Physics Building: A Step Toward the Future

ABOVE LEFT: The completion of the new building brought about many new changes within the department. LEFT: Dr. Vernon Crawford, director.
The main objective of the Psychology department here at Tech is to provide the student with an understanding of human behavior and its effect on personal, family, and industrial problems. The department emphasizes the experimental approach by involving not only the faculty but graduate and undergraduate students in research programs. "Reliability of Human Performance" is only one example of the type of fine work the department is producing.

TOP RIGHT: Dr. Edward H. Loveland, director.
The department of Social Sciences serves Tech as an integral part of the program of general education. Without pre-professional training the engineering student needs a liberal arts curriculum to complement his four years of professional training. From study in fields of history, government, sociology, and philosophy, the student acquires the knowledge which is the basis for the universal understanding between all educated people. The courses are presented in the realization that Tech students are not only engineers, but also the framers of political, economic, and social policies of the state and the nation.

Social Sciences: A Liberal Arts Education

LEFT: Dr. George Hendricks, director.
ABOVE: The chemistry of dyeing plays a very big role in the textile industry today. RIGHT: Dr. James L. Taylor, director.
Textiles: “It Varies From Mill to Mill”

As the Textile industry moves full-force into the newly developed field of synthetics, so goes the A. French Textile School. Much research is being carried on by students under the direction of several instructors in the field of processing, dyeing, and finishing synthetics. At the present time a computerized system, by which any dyestuff available could be matched to any fabric shade obtainable and the correct method of application given, is being developed. As the school grows in size and obtains even more financial aid from the industry which depends on the school for much information and many employees, more emphasis is being exerted on the graduate program. The near future holds a revised curriculum in which more math and engineering physics will be required of all students in the school and the chances of getting off lightly by saying that “it varies from mill to mill” will be reduced.

ABOVE: The weaving process can be a delicate operation at times. LEFT: Student examines the mechanism that inserts the bobbin into the shuttle on a loom.
Army Program: Unique

The Army ROTC program at Tech is unique in its field. The brigade boasts the only program in the Third U.S. Army which offers Branch Material Training. The Tech student may receive training in Infantry, Chemical, Signal, Ordinance, Engineering or Artillery branches. In addition, newly commissioned lieutenants from Tech perform twice as well as the national average at the Army Service Schools.

Available statistics show that the average cadet stands in the upper three-eighths of his class academically and while the national enrollment decreases, Tech enrollment steadily increases. Plans are in the making for adding system’s problems and planning of more faculty aid to give the Army better methods for presenting problems.
Air Force Changes Curriculum

The department of Air Force Aerospace Studies was established in 1950 to select and prepare students to serve in the regular and reserve components of the United States Air Force. The curriculum emphasizes the high level of military understanding and knowledge required by all Air Force officers. This is the reason Tech turns out so many promising cadets.

The Aerospace Studies saw several changes in its program this year. The student enrolled in this program was exposed to more classroom material than usual. This tended to give the student more knowledge of basic principals other than just the methods of drill.

An increase in classroom emphasis was created by curricula changes.
Navy Revamps Merit System

ABOVE: Col. L. P. Harris, USMC, Commandant. RIGHT: Maintenance and care of your weapon plays a role in self-discipline.
The revamped merit-demereit systems was only one of the changes made within the department of Naval Science this year. The department initiated an "officer of the deck" watch program for midshipmen to help encourage underclassmen participation.

Besides drill involvement, class studies plays an important part in the development of an officer. The first year involves the study of naval history while sophomores concentrate on weapons and engineering applications. The junior and senior spends his time studying navigation and leadership qualities.