Photography at RIT

(The Department of Photography of the Rochester Institute of Technology was founded in 1930. During the 27 years of its existence it has developed a comprehensive and sound program in this field. RIT boasts a large and active SMPTE Student Chapter, most of the members of which are associated with the technical program of the Department. The author of this paper, which describes the program, is a Past-Chairman of the Chapter.)

On its one hundredth anniversary in 1930, the Rochester Institute of Technology founded the Department of Photography. The department is one of ten and occupies 30,000 sq ft of floor space on the third floor of the Clark Building. Its facilities include chemistry, physics, sensitometry and color processing and printing laboratories; darkrooms for black-and-white and color photography, studios, classrooms and utility rooms. The photographic equipment on hand for student use is valued at well over $150,000.

A fulltime faculty of fourteen, in addition to several specialized guest lecturers, is retained by the Department. Members of the Art, Chemistry, Electrical and Mechanical Departments give instruction in their respective fields and the program is rounded out with liberal art courses from the General Education Department.

Three major programs are offered to entering students. They are photographic science, applied photography and illustrative photography. The courses in science or applied photography lead to the Degree of Bachelor of Science after the successful completion of four years of study, while the illustrative program leads to the Degree of Bachelor of Fine Arts. The SMPTE student chapter is primarily associated with the technical program and it is for this reason the discussion is limited to that program.

The immediate objective is the position the graduate will obtain in the photographic industry or related fields. The graduate in applied photography is prepared for positions in photographic engineering, as technical or sales representatives, for positions in large scale processing laboratories, and for beginning positions in the motion-picture industry. The photographic science major is trained for positions in the testing, control, development, sales and technical service departments in the photographic industry.

All entering photographic students are required to enroll in the same freshman program. Each freshman acquires a foundation in general chemistry, algebra and trigonometry, and photographic physics. Photographic Physics stresses the types of light sources and lighting equipment available while special emphasis is given to the physical characteristics of light and color. Basic photometry is studied in addition to the reflection, transmittance and adsorption characteristics of various materials. Both lecture and laboratory periods in sensitometry are concerned with the fundamentals of sensitometry and densitometry, the interpretation of the D log E curve, positive and negative materials and tone reproduction. At the end of his freshman year, the student may enter the illustrative or technical program.

In the technical student's second year the applied photography and photographic science requirements are identical. Special attention is paid to the technical aspects of the control of photographic processing while advanced courses in black-and-white and color sensitometry are emphasized. Photographic Technical Analysis is an advanced course in the quantitative analysis of photographic chemicals and solutions for color and black-and-white processing. The course in Photographic Chemistry deals with the theory of image formation, gelatins, emulsions, film base, processing solutions and the chemistry of special photographic processes.

Although there are several courses common to both programs in the third and fourth years, the required curricula for the two programs differ in direction and aim. The science major follows the pure science or chemical aspects of photography while the Applied Photography course is designed to meet the requirements of industry in the field of photographic applications and management.

Photographic Optics, one of the several common courses, concerns itself with the geometrical optics of mirrors and lenses, rangefinders, printers and other forms of photographic equipment. The lecture course in Scientific Applications of Photography includes such applications as photomicrography, metallography, plan copying, infrared and ultraviolet, high-

speed motion pictures, criminology, engineering and astro physics. The characteristics of photographic materials, and problems in their manufacture and application are stressed in the course on materials and processes. Mathematics through Analytical Geometry and Calculus are studied and a course in the Statistics of Quality Control is also taken.

In addition to these required courses, the student in Applied Photography receives instruction in Business Management and Personnel Relations. Among the electives offered in this program is a motion-picture course designed to give the student a thorough coverage of the basic fundamentals in this type of work with stress on motion-picture production, planning and editing. Lectures and laboratory work in Electrical Engineering involve a-c and d-c circuits, electrical measurement, controls and the fundamentals of electronics. The course in Offset Lithography stresses camera work, platemaking and presswork.

In addition to the varied chemical subjects studied, the science major in his third and fourth year takes additional photographic subjects. One of these is the theory of Photographic Process, a course emphasizing sensitivity and optical sensitizing, mechanism of exposure, reactions of latent image and development. Advanced theory in color photography and color reproduction is discussed. The senior applicant for the Bachelor of Science Degree in the science program is required to complete an original research paper in the photographic field. A seminar in the philosophy of research and technique is conducted to render assistance to the student. Seven credit hours of electives are offered in the fourth year. These may be filled with any course offered by the Institute, if approved by the Department. Among the suggested courses are those electives in the applied program in addition to chemical subjects as Organic Chemistry and Chemical Engineering.

These curricula, in conjunction with liberal arts and additional technical subjects, are designed to fulfill certain objectives. They provide a foundation in the basic sciences and apply this to photographic theory, materials and processes. The student is familiarized with equipment and concepts, while problem solving experience is gained in the arts and sciences. Through the Institute's formal educational program, as well as through school-sponsored groups such as technical societies and fraternities, the student gains a sense of responsibility and confidence. After four years he is expected to have a sufficient scientific and engineering background to meet and solve successfully an array of photographic problems, to have an appreciation for the attainment of knowledge and to lead a successful life as a good citizen.

Additional information regarding the program offered at the Rochester Institute of Technology can be obtained from the student chapter of the SMPTE.—*Howard J. Hall*, Past-Chairman, R.I.T. Student Chapter of SMPTE, 148 Troup St., Rochester 8, N.Y.