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THE SCHOOL OF PHARMACY



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THE UNIVERSITY OF NORTH CAROLINA

(Six Component Institutions)

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By the act of the General Assembly of 1931 the University of North Carolina at Chapel Hill, the North Carolina College of Women at Greensboro, and the North Carolina State College of Agriculture and Engineering at Raleigh were merged into The University of North Carolina.

By the act of the General Assembly of 1963 effective July 1, 1963, The University of North Carolina comprised: The University of North Carolina at Chapel Hill, The University of North Carolina at Greensboro and North Carolina State of The University of North Carolina at Raleigh.

By the act of the General Assembly of 1965 effective July 1, 1965, The University of North Carolina comprised: The University of North Carolina at Chapel Hill, The University of North Carolina at Greensboro, The University of North Carolina at Charlotte, and North Carolina State University at Raleigh.

By the act of the General Assembly of 1969 effective July 1, 1969, The University of North Carolina comprises: The University of North Carolina at Chapel Hill, The University of North Carolina at Asheville, The University of North Carolina at Charlotte, The University of North Carolina at Greensboro, The University of North Carolina at Wilmington, and North Carolina State University at Raleigh.

Each institution has its own faculty and student body, and each is headed by a chancellor as its chief administrative officer. Unified general policy and appropriate allocation of function are effected by a single Board of Trustees and by the President with other administrative officers of The University. The general administrative offices are located in Chapel Hill.

Members of the Board of Trustees are elected by the Legislature, and the Governor of North Carolina is chairman ex officio.

The chancellors of the component institutions are responsible to the President as the principal executive officer of The University of North Carolina.

RECORD OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

FEBRUARY 3, 1970

NUMBER 744

**THE ONE HUNDRED AND
SEVENTY-SIXTH SESSION**

THE SCHOOL OF PHARMACY

**Announcements for the Session
1970-1971**

1970

JANUARY

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FEBRUARY

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1971

JANUARY							APRIL							JULY							OCTOBER						
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31																					31						
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28	29	30	31				27	28	29	30				26	27	28	29	30			26	27	28	29	30	31	

UNIVERSITY CALENDAR

1970-1971

SUMMER SESSION

First Term

June 5, Friday	Registration.
June 6, Saturday	First day of classes.
June 27, Saturday	Regular classes in all departments.
July 10, Friday	Last day of classes.
July 11, Saturday	Reading day.
July 13-14, Monday-Tuesday	Final examinations.

Second Term

July 16, Thursday	Registration.
July 17, Friday	First day of classes.
July 18, Saturday	Regular classes in all departments.
August 19, Wednesday	Last day of classes.
August 20, Thursday	Reading day.
August 21-22, Friday-Saturday	Final examinations.

Fall Semester, 1970

September 11, Friday	Fall Semester opens.
September 11, Friday Noon	Residence halls open.
September 12, Saturday, 8:30 A.M.	Orientation and placement for all freshman and transfer students.
September 14, Monday	Registration for freshmen only.
September 15-16, Tuesday-Wednesday	Registration for upperclassmen. Pre-registered students pick up schedules.
September 17, Thursday 8:00 A.M.	Classes begin.
October 12, Monday	University Day.
November 25, Wednesday, 1:00 P.M.	Instruction ends for Thanksgiving recess.
November 30, Monday, 8:00 A.M.	Instruction resumed.
December 18, Friday 5:00 P.M.	Instruction ends for Christmas recess.
January 4, 1971, Monday, 8:00 A.M.	Instruction resumed.
January 14, Thursday	Last day of classes for Fall Semester.
January 15-17, Friday-Sunday	Reading days.
January 18, Monday	Fall Semester final examinations begin.
January 27, Wednesday, 6:00 P.M.	Fall Semester final examinations end and semester closes.

SPRING SEMESTER, 1971

January 27, Wednesday
January 27, Wednesday, 1:00 P.M.
January 28, Thursday, 9:00 A.M.

January 29, Friday, 8:30-4:30 P.M.
February 1, Monday, 8:00 A.M.
March 26, Friday, 6:00 P.M.
April 5, Monday, 8:00 A.M.
May 13, Thursday
May 14-16, Friday-Sunday
May 17, Monday, 8:30 A.M.
May 26, Wednesday, 6:00 P.M.
May 29-31, Saturday-Monday

Spring Semester opens.
Residence halls open.
Orientation and placement of all new freshmen and transfer students.
Registration.
Classes begin.
Instruction ends for Spring recess.
Instruction resumed.
Last day of classes for Spring Semester.
Reading days.
Spring Semester examinations begin.
Spring Semester examinations end.
Commencement and Graduation.

SUMMER SESSION, 1971

First Term

June 7, Monday
June 12, Saturday
June 26, Saturday
July 9, Friday
July 12-13, Monday-Tuesday

Registration
Regular classes in all departments.
Regular classes in all departments.
Last day of classes.
Final examinations.

Second Term

July 15, Thursday
July 16, Friday
July 17, Saturday
August 20, Friday
August 23-24, Monday, Tuesday

Registration.
First day of classes
Regular classes in all departments.
Last day of classes.
Final examinations.

THE UNIVERSITY

The University of North Carolina at Chapel Hill, the first state university in the United States to open its doors to students, is situated at Chapel Hill in the beautiful Piedmont section of hills and forests. Its environment of natural beauty and simple culture, of age and traditions, is impressive. Chapel Hill is ten miles from Durham, thirty miles from Raleigh, and fifty miles from Greensboro. It may be reached by bus lines which maintain frequent schedules from these three points.

POLICY OF THE UNIVERSITY ON EQUAL OPPORTUNITY

Students of all races are equally welcome in the University of North Carolina. Persons of all racial backgrounds may apply for and accept admission, confident that the policy and regular practice of the institution will protect them from unfair discrimination.

STUDENT GOVERNMENT

The student body of the University is self-governing. The functions of this government are both disciplinary and administrative. These functions are exercised by executive, legislative, and judicial branches of representative government under a student constitution.

FIREARMS AND OTHER WEAPONS PROHIBITED

The possession of bowie knives, dirks, daggers, loaded canes, sword canes, machetes, pistols, rifles, repeating rifles, shotguns, pump guns, or other firearms or explosives upon any University campus or in any University owned or operated facility, unless explicitly permitted by the appropriate chancellor or his designated representative in writing, is forbidden. Violation of this prohibition constitutes grounds for suspension from the University.

RELIGION AND STUDENT WELFARE

The deep concern of the University for the religious life of the student is symbolized by the centrally located YMCA and YWCA building. Functioning in the heart of the campus and led by outstanding directors, these Christian Associations minister to a large group of students. The churches of Chapel Hill, representing most of the denominations, provide an effective ministry to the students in their services of worship and weekly religious programs.

The University has a Department of Religion, offering courses in the history, literature, and interpretation of religion. All students

thus have the opportunity to study with competent professors who can lead them to a better understanding and appreciation of their religious faith.

MEDICAL ATTENTION

To provide proper medical attention for the student, the University employs nine full-time physicians and maintains a well-appointed infirmary, with a modern X-ray unit under the direction of a full-time technician, and with a laboratory for diagnostic purposes under the direction of two full-time technicians. The infirmary is under the immediate supervision of the Director of Student Health Services and is provided with seventeen experienced nurses who are under the general supervision of a head nurse. At the discretion of his attending physician a student may be admitted to its wards, and for such services as may be rendered by the staff no charges are made. However, the student will be required to pay for any additional service (consultation, special nurses, and operations) recommended by the attending physician and approved by the parent or guardian.

PHYSICAL EDUCATION

A physical examination is given to students at the time of entrance. All students are classified on the basis of the examination, and an effort is made to adapt the program of physical education to the individual's particular needs.

Physical education is required of all undergraduate students two periods each week for the first two years. Encouragement is given to participation in athletic sports and all kinds of physical activity through a full program of intercollegiate and intramural athletics.

LIBRARIES

The School of Pharmacy Library, supervised by a trained librarian and three student assistants, is located on the main floor of the Pharmacy building. It includes a well lighted, spacious reading room, extensive stack space, and the librarian's office. The carefully selected collection contains over 12,000 books and bound volumes of periodicals pertaining to pharmacy and the collateral sciences. The Library holds subscriptions to 350 professional and scientific serials. A valuable pamphlet collection, including government documents, provides further facilities for research and study.

The Pharmacy Library is a part of the Division of Health Sciences Library, which has additional collections located in the

North Carolina Memorial Hospital, the School of Nursing, and the School of Public Health buildings. The combined collections total approximately 120,000 volumes specialized in Pharmacy, Dentistry, Medicine, Nursing, and Public Health.

The general University Library and ten specialized departmental libraries are also available to students of pharmacy. This collection contains approximately 1,922,787 volumes. Including manuscripts, pamphlets, maps, microfacsimiles, recordings, clippings, prints, etc., the count of holdings is more than 7,018,240 pieces. The rate of growth of the Library averages about 100,000 volumes a year through purchase, gift, and exchange. Periodical and other serial subscriptions number about 14,200.

PHARMACEUTICAL HISTORY

On July 1, 1957, the North Carolina Pharmaceutical Research Foundation, Inc., established a Research Historianship in the School of Pharmacy to develop the historical records of total pharmacy in North Carolina. Extensive files pertaining to pharmacy and pharmacists are maintained.

"The School of Pharmacy of the University of North Carolina: A History" by Alice Noble was published in 1961 by The University of North Carolina Press. Copies may be obtained from the North Carolina Pharmaceutical Research Foundation, Inc., c/o School of Pharmacy, The University of North Carolina at Chapel Hill.

THE SCHOOL OF PHARMACY

DEFINITION OF PURPOSES

The University was established in obedience to the first Constitution of the State which was adopted in December, 1776, and to the Charter which was granted by the General Assembly in 1789. A clause of section 41 of the Constitution declared that "all useful learning shall be duly encouraged and promoted in one or more Universities." In keeping with this Constitutional directive, the School of Pharmacy has the following purposes: to preserve, augment, criticize and transmit pharmaceutical knowledge; to advance and create pharmaceutical knowledge; to aid in conserving or improving the health and welfare of the public through influencing the patient, the health practitioner, or their common environment.

A thorough program of undergraduate instruction, graduate instruction, continuing education, and research is maintained. Every effort is made in the classrooms and laboratories, and through student organizations to develop character, personality, and integrity to the purposes of responsible citizenship and leadership.

GENERAL STATEMENT

The School of Pharmacy was established as an academic unit of The University of North Carolina in 1897 in response to urgent requests from the pharmacists of North Carolina. After many years in Howell Hall (named in honor of the School's first dean, Edward Vernon Howell), the School now occupies a modern, well-equipped building, Beard Hall (dedicated in 1960 and named in honor of the School's second dean, John Grover Beard). The School of Pharmacy is located in a medical center on the Chapel Hill campus and, with the Schools of Medicine, Dentistry, Public Health, and Nursing, it is a unit of the University's Division of Health Sciences.

The School benefits from the excellent resources, both on and off the campus, that are required for a center of excellence for pharmaceutical education, research and service.

In its educational program, emphasis is given to the curriculum required for the Bachelor of Science in Pharmacy degree (B.S. in Pharm). A five-year curriculum for this degree became mandatory in all schools of pharmacy starting in 1960 through actions taken by the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy. This curriculum is

designed and administered in accordance with the current and changing demands for pharmaceutical services in communities and institutions. The School's B.S. in Pharm. curriculum is up-to-date. It is broad and deep with respect to general education and professional principles and practices. The curriculum is distinctively interdisciplinary with major emphasis on physical sciences, biological and biomedical sciences, pharmaceutical sciences and professional studies requiring substantial preliminary training in physical and biological sciences. It is administered with the flexibility necessary to accommodate the varying aspirations of individual students and, at the same time, with adequate rigidity to qualify the students as candidates for licensure as Registered Pharmacists and in every way for the important and expanding role of the pharmacist as a health professional. The graduate of the B.S. in Pharm. degree curriculum is qualified and motivated for the practice of clinical pharmacy (community pharmacy and institutional pharmacy), for professional and technical careers in industry and government, and for further study leading to advanced degrees in the pharmaceutical sciences and related physical, biological, and biomedical sciences.

The School offers M.S. and Ph.D. degree candidates and post-doctoral participants coursework and research training and experience in the pharmaceutical sciences, especially pharmacy (biopharmaceutics, physical pharmacy, and hospital pharmacy) and medicinal chemistry.

The School also engages in the continuing education of pharmacists and pharmaceutical scientists and technologists, supporting their efforts to adapt to an expanding and dynamic science and technology.

The faculty, staff and students of the School of Pharmacy are actively involved in research and other scholarly pursuits in the professional, scientific and technological aspects of pharmacy. Through their work they contribute to the knowledge characteristic of the pharmaceutical sciences, the recording and communication thereof, and its application in the educational and service phases of the School's programs.

In the third, or service, phase of the School's three-fold mission, the faculty and staff promote the disciplines and support the missions of the pharmacist in clinical practice and the pharmaceutical scientist in industry, government, or elsewhere. This is done particularly by motivating and providing for continuing edu-

cation at all levels, by innovating and contributing to the development of expanding pharmaceutical services, by engaging in the exploratory research that leads to new and improved pharmaceutical services and new drug products, and in the practical application of the results of their work by the profession and the industry, by contributing to good relations of the pharmacy profession and the pharmaceutical industry with the public and with other health professionals and, in general, by initiating and assisting the programs that will be beneficial to the pharmaceutical services required by a modern society.

The School of Pharmacy was admitted to membership in the American Association of Colleges of Pharmacy in 1917. This organization was formed for the promotion of sound educational programs and productive research and scholarly efforts in pharmacy and the pharmaceutical sciences. It maintains high standards for membership based on the quality of the faculty of its member institutions and the excellence of their instructional programs and their resources for education and research.

The School of Pharmacy of The University of North Carolina is accredited by the American Council on Pharmaceutical Education. The School is also accredited by all State examining boards.

Students are admitted to a four-year program of professional studies in the School of Pharmacy upon completion of at least one year (the prepharmacy year) of collegiate work in the General College of the University of North Carolina or in any accredited liberal arts college (1-4 program). Students who present two or more years of accredited collegiate work (including the required courses) before admission to the School of Pharmacy usually can complete their professional training in three years (2-3 program). As of January 1, 1938, the American Association of Colleges of Pharmacy stipulated for its member schools that students transferring from a college other than another school of pharmacy must spend a minimum of three years in the School of Pharmacy for the B.S. in Pharm. degree. Each application for admission must be approved by the Director of Admissions of the University. Applications should be filed as early as possible, preferably before February 1st of the calendar year in which the student desires admission. Applications received later in the year will be given every consideration within the limits imposed by the number of students admitted at an earlier date.

For students who transfer to the School of Pharmacy from another accredited School of Pharmacy, the minimum residence

required for the degree is one academic year, that is, two semesters within a twelve month period. Such students must complete at least thirty semester hours while in residence in the School of Pharmacy.

Graduate degrees offered through the School of Pharmacy are administered by the Graduate School of the University of North Carolina at Chapel Hill. These degrees include the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in pharmacy, medicinal chemistry, and hospital pharmacy.

The School of Pharmacy is considering a post-baccalaureate professional education and training program leading to an advanced professional degree in the fall of 1970 or 1971. This program will involve professionally oriented courses in different specialty areas.

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

JOSEPH CARLYLE SITTERSON, Ph.D., Litt. D., Chancellor

CLAIBORNE STRIBLING JONES, Ph.D., Assistant to the Chancellor

CORNELIUS OLIVER CATHEY, Ph.D., Dean of Student Affairs

JOSEPH COLIN EAGLES, JR., J.D., Vice Chancellor, Business and Finance

JAMES REUBEN GASKIN, Ph.D., Registrar and Director of Institutional Research

LYLE VINCENT JONES, Ph.D., Dean of the Graduate School and Vice Chancellor

C. ARDEN MILLER, M.D., Vice Chancellor, Health Sciences

JOHN CHARLES MORROW III, Ph.D., Provost

CHARLES MILTON SHAFFER, B.S. Comm., Director of Developmental Affairs

THE SCHOOL OF PHARMACY

GEORGE PHILIP HAGER, Ph.D., Dean

LEROY D. WERLEY, JR., M.H.A., Assistant Dean, Student Affairs

DAVID R. WORK, J.D., Assistant Dean, Fiscal Affairs

PHARMACY FACULTY AND STAFF

GEORGE PHILIP HAGER (1966), Ph.D., Professor of Medicinal Chemistry and Dean of the School of Pharmacy

LEROY D. WERLEY, JR., (1967), M.H.A., Assistant Professor of Pharmacy and Assistant Dean, Student Affairs

DAVID R. WORK (1969), J.D., Assistant Professor of Pharmacy Administration and Assistant Dean, Fiscal Affairs

MELVIN ARTHUR CHAMBERS (1959), Ph.D., Professor of Pharmacy

CHESTER J. CAVALLITO (1966), Ph.D., Professor of Medicinal Chemistry

ALBERT M. MATTOCKS (1966), Ph.D., Professor of Pharmacy

CLAUDE PIANTADOSI (1957), Ph.D., Professor of Medicinal Chemistry and Associate Professor of Biochemistry

FRED T. SEMENIUK (1947), Ph.D., Professor of Medicinal Chemistry

HERMAN ORA THOMPSON (1946), Ph.D., Professor of Pharmacy

THOMAS J. HALEY (1969), Ph.D., Adjunct Professor of Pharmacology

FRED L. SNYDER (1966), Ph.D., Adjunct Professor of Medicinal Chemistry

MONROE E. WALL (1966), Ph.D., Adjunct Professor of Medicinal Chemistry

GEORGE HARRY COCOLAS (1958), Ph.D., Associate Professor of Medicinal Chemistry

LOUIS S. HARRIS (1966), Ph.D., Associate Professor of Pharmacology

ARTHUR J. McBAY (1969), Ph.D., Associate Professor of Pharmacology
JACK KNIGHT WIER (1961), Ph.D., Associate Professor of Pharmacognosy
WILLIAM L. DEWEY (1969), Ph.D. Assistant Professor of Pharmacology
WILLIAM E. HALL (1966), Ph.D., Assistant Professor of Pharmacy
JAMES L. OLSEN (1969), Ph.D., Assistant Professor of Pharmacy
WILLIAM WEST TAYLOR (1952), Ph.D., Assistant Professor of Hospital Pharmacy
FREDERICK M. ECKEL (1966), M.S., Assistant Professor of Hospital Pharmacy
CLAUDE V. PAOLONI (1967), B.S., Assistant Professor of Hospital Pharmacy
RICHARD C. ALLEN (1969), Ph.D., Instructor
STEPHEN M. CAIOLA (1968), M.S., Instructor
MICHAEL L. EDWARDS (1969), Ph.D., Instructor
KATHRYN EAVES FREEMAN (1957), A.B. in L.S., Pharmacy Librarian
EMAD A. EL-BASSIOUNI, M.S., Research Assistant
RONALD KUDLA, M.S., Research Assistant
HYE SOOK YUN, M.S., Research Assistant
KHALID S. ISHAQ, Ph.D., Research Associate
MRS. HELEN WHITE, Ph.D., Research Associate
MRS. NELLE BARBOUR, Administrative Secretary
MRS. JUDY LARRICK, Secretary to the Dean
JANICE MARIE HANKS, Stenographer
MRS. GAIL MORIARTY, Stenographer
MRS. WAYNELL MORRIS, Stenographer
MRS. CHARLOTTE PERDUE, Stenographer
LEROY CLARK, Assistant Stockroom Manager
CLIFTON STONE, Stockroom Manager
KUN CHAE, Teaching Assistant
THANH THUY CHAU, Teaching Assistant
WEN-SHERNG CHEN, Teaching Assistant
ANN SUMMEY, Teaching Assistant
THEODORE SPAULDING, Teaching Assistant
CHARLES BIGGERSTAFF, Undergraduate Assistant
MICHAEL A. BOYKIN, Undergraduate Assistant
RICHARD CASPER, Undergraduate Assistant
CARL T. DAGENHART, Undergraduate Assistant
GEORGE IKE DAVIS, Undergraduate Assistant
ROBERT DAYVAULT, Undergraduate Assistant

WILLIAM K. ELMORE, Undergraduate Assistant
JAMES H. FRAZIER, Undergraduate Assistant
VIRGINIA W. FRAZIER, Undergraduate Assistant
SARAH J. LOHR, Undergraduate Assistant
THOMAS C. McCALL, Undergraduate Assistant
JAMES MINOR, Undergraduate Assistant
STEVEN MOORE, Undergraduate Assistant
NORMAN G. OVERCASH, Undergraduate Assistant
ARTHUR W. PITTMAN, Undergraduate Assistant
CLARENCE B. RIDOUT, Undergraduate Assistant
CHARLES W. ROSE, Undergraduate Assistant
SUSAN B. STAFFORD, Undergraduate Assistant
BONNIE J. TILLEY, Undergraduate Assistant
BILLY R. WEASE, Undergraduate Assistant
ANNE-MARIE WRAY, Undergraduate Assistant

GENERAL INFORMATION

REQUIREMENTS FOR ADMISSION

Freshmen

Applicants of either sex may be admitted to the General College for the first year of study (prepharmacy), provided they meet the requirements for entrance. Application blanks for admission may be secured by writing to the Director of Admissions, The University of North Carolina at Chapel Hill, who upon approving the application will undertake to secure directly from the proper high school official an appropriate certification of the applicant's record.

A non-refundable application fee of \$10.00 must be submitted with the application for admission. An applicant who has been offered admission reserves his place by the payment of a \$25.00 non-refundable deposit which is credited toward the first semester's tuition.

Freshmen are admitted to the General College by certificate from accredited schools or by examination, and they must show satisfactory scores on an entrance examination consisting of the College Entrance Examination Board. **The Dean of the School of Pharmacy should be advised when formal application for admission is made to the Director of Admissions.**

Admission to the General College is ordinarily based on the completion of four years of high school or preparatory school work and acquisition of fifteen or more units of credit according to the following distribution:

English	4 units	A Natural Science	1 unit
History of the United States	1 unit	Latin, German, French or Spanish	2 units
Algebra	2 units	¹ Electives to make	
Plane Geometry	1 unit	total of	16 units

Transfer Students

Candidates for admission as transfer students with second-year standing must have credit for the courses in the first-year curriculum. A limited number of transfers with third-year standing must have credit for the courses of the first two years of the curriculum including 8-9 semester hours of organic chemistry and substituting credit for either Zoology, Chemistry 43, or equivalent

1. Of the 5 elective units counted in the total of 16, not more than 4 may be vocational subjects. Experience has shown that physics and typing are most useful electives for prospective pharmacy students.

credit in elective courses, in place of Pharmacy 21, 30, and 31. Transfer students are required to submit transcripts of their college work at the time of their formal application for admission. Each application for admission or readmission must be approved by the Director of Admissions at the University before the application can be considered by the Committee on Admissions of the School of Pharmacy. Applicants for admission as transfer students should appear at the School of Pharmacy for a personal interview. All applications should be filed as early as possible in the period before February 1.

COMMITTEE ON ADMISSIONS

A special committee on admissions, composed of the Dean, the Assistant Dean, a staff member, and the Director of Admissions, is charged with the responsibility of selecting eligible students. Scholarship, entrance examination scores, character, industry, and priority of application are governing factors for admission.

RESIDENCE STATUS FOR TUITION PAYMENT

1. **General:** The tuition charge for legal residents of North Carolina is less than for nonresidents. To qualify for in-state tuition, a legal resident must have maintained his domicile² in North Carolina for a least six months next preceding the date of first enrollment or re-enrollment in an institution of higher education in this State.
2. **Minors:** The legal residence of a person under twenty-one years of age at the time of his first enrollment in an institution of higher education in this State is that of his parents, surviving parents, or legal guardian. In cases where parents are divorced or legally separated, the legal residence of the father will control unless custody of the minor has been awarded by court order to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

2. Domicile is synonymous with legal residence. A person's domicile is his permanent dwelling place. It is the place where he is generally understood to reside with the intention of remaining there indefinitely or of returning there when absent. It is presumed that a person whose domicile is in North Carolina is registered to vote, files a North Carolina State Income Tax and other reports, and complies with other obligations of persons resident in North Carolina.

A minor student whose parents move their legal residence from North Carolina to a location outside the State shall be considered to be a nonresident after six months from the date of removal from the State.

For the purpose of determining residence requirements under these rules, a person will be considered a minor until he has reached his twenty-first birthday. Married minors, however, are entitled to establish and maintain their residence in the same manner as adults. Attendance at an institution of higher education as a student cannot be counted as fulfilling the six-month domicile requirement.

3. **Adults:** A person twenty-one years of age or older is eligible for in-state tuition if he has maintained continuous domicile in North Carolina for the six months next preceding the date of enrollment or re-enrollment, exclusive of any time spent in attendance at any institution of higher education. An in-state student reaching the age of twenty-one is not required to re-establish residence provided that he maintains his domicile in North Carolina.
4. **Married Students:** The legal residence of a wife follows that of her husband, except that a woman currently enrolled as an in-state student in an institution of higher education may continue as a resident even though she marries a nonresident. If the husband is a nonresident and separation or divorce occurs, the woman may qualify for in-state tuition after establishing her domicile in North Carolina for at least six months under the same conditions as she could if she were single.
5. **Military Personnel:** No person shall be presumed to have gained or lost in-state residence status in North Carolina while serving in the Armed Forces. However, a member of the Armed Forces may obtain in-state residence status for himself, his spouse, or his children after maintaining his domicile in North Carolina for at least the six months next preceding his or their enrollment or re-enrollment in an institution of higher education in this State.
6. **Aliens:** Aliens lawfully admitted to the United States for permanent residence may establish North Carolina residence in the same manner as any other nonresident.

7. **Property and Taxes:** Ownership of property in or payment of taxes to the State of North Carolina apart from legal residence will not qualify one for the in-state tuition rate.
8. **Change of Status:**³ The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina and may not thereafter be changed except: (a) in the case of a nonresident student at the time of his first enrollment who, or if a minor his parents, has subsequently maintained a legal residence in North Carolina for at least six months, and (b) in the case of a resident who has abandoned his legal residence in North Carolina for a minimum period of six months. In either case, the appropriate tuition rate will become effective at the beginning of the term following the six-month period.
9. **Responsibility of Student:** Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his case in writing to the admissions officer. The student who, due to subsequent events, becomes eligible for a change in classification, whether from out-of-state to in-state or the reverse, has the responsibility of immediately informing the Office of Admissions of this circumstance in writing. Failure to give complete and correct information regarding residence constitutes grounds for disciplinary action.
10. **Appeals of Rulings of Admission Officers:** Any student or prospective student may appeal the ruling of the admissions officer in writing to the Chancellor of the Institution. The Chancellor may use any officer or committee which he deems appropriate in review of the appeal. Appeal of the Chancellor's ruling may be made to the President of the University; such appeals to be filed with the Chancellor and forwarded by him to the President.

DELAYED REGISTRATION

Any student registering later than the time appointed for his registration must pay an additional fee of five dollars (\$5.00). No

3. To qualify for in-state tuition, a legal resident must have maintained his domicile in North Carolina for at least six months next preceding the date of first enrollment or re-enrollment in an institution of higher education in the State. Attendance at an institution of higher education as a student cannot be counted as fulfilling the six-month domicile requirement. A person twenty-one years of age or older is eligible for in-state tuition if he has maintained continuous domicile in North Carolina for the six months next preceding the date of enrollment or re-enrollment, exclusive of any time spent in attendance at any institution of higher education.

appeal from the late registration charge will be granted, unless the delay results from circumstances clearly beyond the student's control. Such an appeal must be made in writing to the Chancellor, must show justification for the delay in registering, and must bear the approval of the Dean of the School of Pharmacy.

EXPENSES

TUITION AND OTHER FEES FOR EACH SEMESTER

	Residents of North Carolina	
	General College	School of Pharmacy
Tuition	\$112.50	\$150.00
Fees	86.50	90.25

The tuition for a nonresident of North Carolina is \$475.00 per semester in the General College and the School of Pharmacy.

The University reserves the right to make, with the approval of the proper authorities, changes in tuition and any other fees at any time.

Laboratory Breakage Deposit: Students taking laboratory courses are required to pay for breakage of equipment, use of more than normal expendable supplies and materials, and depreciation on unusual equipment. These fees are payable at the end of each semester prior to taking the final examination in these courses. Failure to pay breakage fees will result in the withholding of grades.

PAYMENT OF BILLS

Bills for the fall semester are payable at the time of registration. Bills for the spring semester are payable at the Cashier's Office on the first class day of the semester, and thereafter according to a schedule announced. Failure to pay or make the proper arrangements for payment results in the assessment of an extra fee of \$5.00.

HOUSING, FOOD, LAUNDRY, AND LINEN SERVICES

The University reserves the right to approve the housing of all students whether they live on or off the campus. Each University student is required to maintain a correct local address with the University. By Trustee action the administration is authorized to establish minimum standards of health, safety, and general welfare in regard to housing and to require that students maintain their residence in quarters which comply with these standards. The

University reserves the right to make changes in room rent and other charges stated in this section at any time. All charges are tentative and subject to annual cost studies.

UNIVERSITY-OPERATED FACILITIES

Residence Hall Accommodations—Men: The University provides residence hall accommodations for approximately half of its male enrollment. Rooms are rented for the academic year, September through May. All single male freshmen are required to live on the campus or in University Square¹ except bona fide residents of the Chapel Hill area. Semester rent is \$169.50 per person for a double room (\$244.50 single). This amount includes a \$5.00 residence hall social fee and a \$1.00 key deposit. A newly accepted student should mail the full semester rent along with his room application card to the University Cashier. The spring semester rent is payable by January 15. If for any reason, a student wishes to cancel his assignment for the spring semester he must notify the Housing Office on or before January 15. The rent payment, less \$25.00, is refundable on cancellations made by July 1 for the fall semester, and January 15 for the spring semester. Assignments to rooms are made in the order in which applications are received. After July 1 for the fall semester, and January 15 for the spring semester, rent payments are not refundable except for: illness which prevents enrollment; withdrawal because of illness; military draft; death in the family; or dismissal for disciplinary or academic reasons.

Residence Hall Accommodations—Women: The University provides residence hall space for approximately 2300 women students. Rooms are rented for the academic year, September through May.

Undergraduate women above the age of twenty-one and all senior women regardless of age may reside off campus. Senior women under age twenty-one must have parents' approval and must file a Parental Permission Housing Form in the Office of the Dean of Women. Exception to this policy is made for those students who live with their parents who are **bona fide** residents of Chapel Hill Township, or for those who have been granted permission to commute by the Office of the Dean of Women.

Semester rent is \$208.50 per person in a double room. There is a very limited number of single rooms at \$303.50. Most of these singles are in Spencer.

1. See page 25 for further information on University Square.

A newly accepted student should mail the full rent along with her room application card to the University Cashier. This payment includes rent for one semester plus a \$5.00 residence hall social fee. Fall semester rent must be paid by July 1. The rent, less \$25.00, is refundable on cancellations made by July 1 for the fall semester and by January 15 for the spring semester.

After these dates rent payments are not refundable except for: illness which prevents enrollment or causes withdrawal; military draft; death in the family; dismissal for disciplinary reasons; or scholastic ineligibility.

Spencer Hall is the only University Residence Hall where rooms and meals are provided. Meals cost approximately \$250 per semester. Spencer Hall residents must board there. A limited number of students from other residence halls may arrange for meals at Spencer.

Residence Hall Accommodations—General: The University reserves the right to make changes in room assignments or transfer students to other residence halls during the term or semester.

After registration, rent for residence hall (and board at Spencer Hall) will not be refunded unless the student withdraws from the University during the first nine weeks of a semester because of illness (if recommended by the Director of Student Health Service), death in the family, dismissal for disciplinary or academic reasons, or military draft.

Rent does not cover occupancy during periods when the University is not officially in session.

All rooms are furnished, but students are encouraged to bring desk lamps,² bed spreads, and small rugs. The University's pillow, linen, and blanket rental service is described on page 26. Students who elect to provide their own bedding should bring: four single sheets, two pillow cases, two blankets, and one or two bedspreads.

The right to occupy a room is not transferable and terminates with the expiration of the lease. Sale or transfer of a student's right to occupancy will be considered a fraudulent transaction and will result in forfeiture of the room by the lessee and the room becomes available for assignment by the University Housing Office.

Should a student be dismissed or otherwise withdrawn from the University, he or she is expected to leave the University residence and Chapel Hill within 48 hours.

2. Desk lamps are provided in Avery, Craige, Ehringhaus, Hinton James, Morrison, Parker and Teague.

The University reserves the right to require any student whom it considers, for any reason, an undesirable tenant to vacate a residence hall room.

The occupant of a room will be held directly responsible for all damage done to his room and its furniture.

No pets may be kept in University residence halls or housing units on penalty of forfeiture of right of occupancy. Outside aeri-als, cooking appliances, air-conditioning units, and other electrical equipment may not be used.

Under no conditions are firearms of any description or type to be kept in residence halls or on University property.

Residence Hall Tenancy: Students already living in a residence hall desiring to retain rooms for the next academic year must make application as follows:

Men: Pay a \$25.00 deposit to the University Cashier, and file a room reservation card with the Director of Housing by a date announced by the Director of Housing. The deposit is forfeited on cancellations after June 10th.

Women: Pay \$25.00 deposit to the University Cashier, and file a room reservation card with the Director of Housing by a date announced by the Director of Housing. The deposit is forfeited on cancellations after June 10th.

Room assignments will be cancelled and the deposit forfeited unless rent for the fall semester is paid in full by July 1.

Room reservation for either of the two summer terms is made upon payment of the full amount of rent for one term, refundable if cancellation is received by June 1 for the first summer term, and by July 13 for the second summer term.

Housing Units for Married Students

The University has a limited number of housing units for married students. It is the general policy of the University to give priority to the applications of married graduate students.

Most of the apartments are unfurnished. Minimum rent for the newer brick apartments is \$82.00 per month for one bedroom units, \$92.00 per month for two bedroom apartments, including electric stoves, refrigerators, heat, and water. A limited number of two bedroom apartments are furnished and rent for \$110.00.

Early application to the Director of Housing is urgently recommended. Married students, especially married foreign students,

should not bring their families to Chapel Hill until their housing arrangements have been settled.

The Housing Office maintains listings of off-campus accommodations. Satisfactory arrangements for these places are best made by applying in person.

Student Dining Facilities: A new meal plan has been introduced. Unlimited Seconds on all food items are offered at the New Chase Cafeteria and Lenoir (Except the Saturday Evening steak).

Prices: Full Year — 7 days — \$480.53

5 days — \$396.44

Fall Term — 7 days — \$245.10

5 days — \$200.07

Spring Term — 7 days — \$235.43

5 days — \$196.37

Another meal plan is a Tear Ticket that can be used at either Lenoir or Chase Cafeteria in the new meal plan sections. Tickets may be used for any meal by students and their guests.

Prices: 200 meal plan tickets are \$220.00 (This is four books issued as the students need them).

Note: The above prices are for the 1969-1970, academic year.

Those interested in these new meal plans should send a check payable to:

Saga Food Service of North Carolina, Inc.

Lenoir Hall

The University of North Carolina at Chapel Hill

Chapel Hill, North Carolina 27514

Other Food Service Locations are, Spencer for women, Monogram Club for table service, Pine Room (Cafeteria and Snack Bar), and the Carolina Union Snack Bar.

PRIVATELY OWNED RESIDENCE HALL ACCOMMODATIONS— UNIVERSITY SQUARE

Approximately 800 women and 700 men are housed in privately owned Granville Towers. The location is just off the UNC campus about one block from the Carolina Inn.

These supervised residence halls, one for women, one for men, and one coeducational have a cafeteria-dining commons. The fee charged includes room and board. Further information is available from Granville Towers, University Square, Chapel Hill, North Carolina 27514.

Arrangements for these accommodations should be made direct with Granville Towers Business Office.

LAUNDRY, LINEN, PILLOW, AND BLANKET SERVICES

Laundry Service: Finished laundry service at reasonable cost is provided by the University Laundry Department to students who wish to use it. This service is available on a Cash-and-Carry basis at any of the eight Laundry Call Offices. (Students desiring to do so may use the deposit system in lieu of Cash-and-Carry.)

Additional Laundry Services: Wash-Dry-Fold service (nothing finished) is available at any of the University Laundry Call Offices. This is an economical, Cash-and-Carry service and is separate from the finished laundry service.

Linen Rental Service: For students who do not wish to provide their own linen, the University Laundry will furnish two sheets, one pillow case, and three bath towels each week on an exchange basis. This service is available at all Laundry Call Offices. A fee of \$33.00, which includes a \$5.00 refundable deposit, for the school year (September through May) is payable when service is requested.

Pillows may be rented for \$1.55 for the school year. Blankets are available for a deposit of \$5.00 each, with provision for a refund of \$2.00 when blanket is returned in good condition.

Dry Cleaning: Complete dry cleaning service is available at all University Laundry Call Offices on a Cash-and-Carry basis.

Coin-Op-Service: Coin-Op service is available at Avery, Craig, James, and Joyner laundry offices.

SUMMARY OF ESTIMATED EXPENSES FOR THE COLLEGE YEAR OF THE AVERAGE MALE STUDENT WHO IS A RESIDENT OF NORTH CAROLINA

Board estimated at \$15 a week	\$ 600.00
Residence Hall room (for men)	339.00
(for women \$417.00)	
Tuition	300.00
Fees	180.50
Laundry and Linen deposit (optional)	80.00
Miscellaneous expenses (clothing, travel, spending)	282.50
Books and supplies, estimated for year	125.00
Total for North Carolina Resident	\$1,907.00
Total for Nonresident	\$2,557.00

FINANCIAL AID

The University has certain funds which may be loaned to worthy students who can show definite need. In addition, there are

part-time jobs involving various kinds of work which enable some students to earn a part of their expenses. Information about all these types of assistance may be obtained by writing to the Director of Student Aid, 300 Vance Hall, Chapel Hill.

Pharmacy students who are residents of North Carolina and have successfully completed the freshman year are eligible to apply for loans appropriated by the General Assembly. The student agrees upon (1) completing requirements for the Degree of Pharmacy, and (2) becoming Board registered to repay the loan by practice in North Carolina in either (1) a rural community of 10,000 or less population or (2) a State-owned mental, tuberculosis or rehabilitation facility one year for each academic year of assistance. The maximum loan available is \$1,000 per academic year or \$4,000 for a four-year period. Detailed information may be obtained from the North Carolina Medical Care Commission, P.O. Box 25459, Raleigh, North Carolina 27611.

Students from farm homes may be eligible for loans to a limit of \$1,000 per year from the North Carolina Rural Rehabilitation Corporation, P. O. Box 2504, Raleigh, North Carolina.

Pharmacy students are eligible for loans to cover tuition, fees, and books not exceeding \$500 per semester from the John W. Dargavel Foundation, 4101 East Michigan Street, Indianapolis 1, Indiana. Loans are made only to complete the last three years of pharmaceutical education. The applicant must be recommended by the Dean of the School of Pharmacy. Two co-signers are required. The loan is free of interest and is repayable in reasonable monthly installments after graduation. The loan, however, becomes payable immediately if the student withdraws from the School of Pharmacy for any reason whatsoever.

SCHOLARSHIPS

Special scholarships are available to students of pharmacy. They are listed on pages 45-50.

VETERAN'S ADVISER

Questions concerning educational benefits under the GI Bills should be taken up with the Veteran's Adviser, Room 1, Hanes Hall.

REGISTRATION

All students are expected to present themselves for registration in accordance with the plan of registration established for the current year. A student registering for the first time will report for

a physical examination to the Infirmary and present at registration a clearance card from the Director of Student Health Services. Failure to attend to this matter before registering causes extra expense to the University and entails for the student the payment of an extra charge of five dollars (\$5.00).

Students who expect to register for the first-year class should be in Chapel Hill in time for the first Orientation meeting. The time between this date and formal registration is devoted to placement tests and to a systematic plan of acquainting new students with their surroundings. All students begin their registration with their advisers in Beard Hall.

Registration for credit for any course is limited to the first three full days of instruction in a semester, unless the late registration is approved by the instructor concerned and the Dean.

The listing of a course in the catalogue does not obligate the University to give the course in any particular year.

Changes in registration are limited to the first three days of a semester.

ATTENDANCE REGULATIONS

Regular attendance at class is a student obligation. It is his obligation to know the rules governing class attendance, to **know his attendance status in all classes at all times.**

For classes by the pharmacy faculty, a student will be reported to the Dean of the School when he has been absent without excuse the number of times equal to the number of class lecture meetings per week. Each unexcused absence during the two-day period immediately before or immediately after University holidays will be counted as two absences. Unexcused absences from laboratory or from class on the day of a scheduled quiz or examination will result in failure of the work missed.

When a student has the limited number of unexcused absences in a single class the instructor will notify him and the Dean that the student is on attendance probation for the course. One additional unexcused absence will be reported to the Dean and will result in the student being dropped from the course by his Dean with the grade of **F**.

A student who is on the honor roll is exempt from regulations governing class attendance except those pertaining to absence from laboratory or quizzes and examinations.

The faculty is responsible for enforcement of the regulations. In order to discharge this responsibility properly, members of the faculty will: (a) explain the attendance regulations during the first week of every class; (b) keep an accurate daily record of attendance; (c) report promptly to the Dean the name of any student who has been placed on attendance probation for being absent the limited number of times without excuse; and (d) report promptly to the Dean the name of any student on attendance probation who is absent without excuse.

The grade of a student who quits a course without the permission of the Dean is recorded officially as **F**.

The grade of a student who drops or is dropped for other than disciplinary reasons from a course in which he is failing at that time is recorded as an **F** unless, in the judgment of the Dean, his failure was caused by circumstances beyond his control.

The Dean will determine whether a student may remain in residence after having been dropped from or having quit one or more courses.

EXAMINATIONS

Regular written examinations are required at the end of each term in all courses except those whose nature makes written examinations unnecessary.

Special examinations may be taken at the period of the special examinations in the fall by students who have received the condition grade (**Cond.**). Provided he has no conflict with a course regularly taken by him in the semester, such a student may take the examination with the class in the same subject at any regular term examination period within a year after he has made the grade Condition. A fifth-year student who makes a grade of Condition in his last term of residence is allowed to take a special examination for removal of the Condition not earlier than three days after his last examination in that period of examinations. The grade Condition becomes **F** if the student fails to pass a re-examination within one year.

Examinations to remove the grade of Condition at times other than those specified in the preceding paragraph may be arranged between the instructor involved and the Dean of the School.

Special examinations for students who have been excused by the instructor from regular examinations on account of sickness or at the September period, or at a regular term examination excused may be held at suitable times fixed by the Office of Records

and Registration and the instructors concerned. Such examinations must be taken within twelve months from the date of absence.

To be entitled to take a special examination within a term, or at the September period, or at a regular term examination period, the student is required to file a written request with a recorder in the Office of Records and Registration at least one week before the time for the examination.

Students absent from an examination without an excuse, or present and failing to submit examination papers, are reported absent. This mark is equivalent in every respect to grade **F**, or failure, and is so recorded in the Office of Records and Registration.

Each student is required to subscribe his name on the following pledge or its equivalent on every paper: "I hereby certify that during this examination I have neither given nor received aid." The instructor will not report a grade for any student whose examination paper lacks this pledge.

Papers handed in at a special examination by students who have been excused by the instructor from the regular examination will be graded by the usual system; all others will be marked **passed** or **failed**.

By action of the faculty, quizzes are not to be given during the last six days of instruction of any term.

STANDING

At the close of each term, reports of the standing of all students in all of their studies are sent to parents or guardians. The reports are based upon the following system of grading: **A**—Excellent, **B**—Good, **C**—Fair, **D**—Barely passed; **Cond.**—Conditioned, **F**—Failure, or **I**³—Work incomplete.

RANK OF CLASSES

A student must attain a grade of **D** or better to pass any course.

If a student fails a course in the major field (Pharmacy, Medicinal Chemistry, Pharmacy Administration, or Pharmacognosy) a grade of **C** or better is required for passing when the subject is repeated.

The right of appeal to the Committee on Petitions of the School of Pharmacy is allowed with respect to grading, provided the appeal is made within three months.

3. The grade **I** may be converted into one of the other grades by completing within a period of twelve months such additional assignments as may be required by the instructor in the course. A grade of **I** not so converted becomes **F**.

Any student who is denied promotion or readmission but who offers evidence of extenuating circumstances is permitted to make a written and personal appeal to the Committee on Petitions. The Committee will meet each year at a time to be designated by the Dean to consider petitions of students who have definite and convincing reasons on which to base a request for readmission.

ELIGIBILITY AND PROMOTIONS

A **C** average, corresponding to a quality point average of 2.0, is required for graduation with the degree of Bachelor of Science in Pharmacy. A **C** average is required also in professional courses to qualify for graduation; professional courses include Pharmacology 101-102 and Biochemistry 51. Quality points are earned as follows: 4 for each credit hour of **A**, 3 for each credit hour of **B**, 2 for each credit hour of **C**, and 1 for each credit hour of **D**. The calculation of the quality point average is based only on the work taken at this University; grades transferred from another institution are not included in the calculation.

An applicant who has a quality point average of 1.50 or better for his first year's work (prepharmacy year) and who satisfies all other requirements will be admitted to the School of Pharmacy for the second year of the five-year curriculum. Applicants whose quality point averages for the first year's work are less than 1.50 but not less than 1.25 will be given individual consideration by the Committee on Admissions.

Eligibility for continued residence in the School of Pharmacy requires cumulative quality-point averages as follows: 1.50 or better to begin the third year, 1.75 or better to begin the fourth year, 1.90 or better to begin the fifth year, and 2.00 or better (**C** average or better) to graduate.

In view of its responsibility to the public, the pharmacy faculty reserves the right to drop a student from the School at the end of any semester providing he does not in its judgment show sufficient promise to justify continuing the study of pharmacy regardless of his grades.

WITHDRAWALS

If a student wishes to withdraw at any time other than the end of a semester, a formal withdrawal, which is prerequisite to honorable dismissal or re-entrance to this institution, must be approved by the Dean in order to be valid. Such a withdrawal will be approved only after full investigation of the circumstances and

after the lapse of twenty-four hours from the time the first application is filed with the Dean. The withdrawal form after approval by the Dean must be filed promptly with the Office of Records and Registration, 1 Hanes Hall.

If a student withdraws after mid-term and is reported as below passing in two or more courses, that will be counted as a semester in residence in all computations of his requirements for readmission. If a student withdraws before mid-term, it will be left to the discretion of the Dean whether that semester is to be counted as a semester in residence. The Dean's decision will be indicated specifically on the form used for withdrawal. Students withdrawing from the School of Pharmacy may lose the privilege of re-entering at a certain time, since the numbers admitted to classes are limited.

DESCRIPTION OF CURRICULUM

The School of Pharmacy recognizes that its graduates may elect to pursue one or another of a number of related but definitely different forms of pharmaceutical practice. They may practice clinical pharmacy in community pharmacies as proprietors or employees. They may also practice pharmacy in hospitals or other medical care institutions. The graduate of the School of Pharmacy is also in demand in the various divisions of the pharmaceutical industry: research, development, production, control, and marketing. Positions are open to the graduate in various government agencies, for example, the United States Public Health Service and the Veterans Administration. Each of these different careers requires a specialized type of training, and the School attempts to provide such specialization. Certain subject matter, however, is basically necessary regardless of the career which the student may expect to follow after graduation. The School has one basic curriculum. Specialization is possible by the judicious selection of electives in the last three years. Students, particularly those considering graduate study, who are interested in specialization, should consult the Dean before registering for elective courses. The curriculum is given on page 34. Statements about graduate work are given on pages 13 and 33.

Degree of Bachelor of Science in Pharmacy

To be recommended for the degree of Bachelor of Science in Pharmacy the student must have completed the five-year course of study outlined on page 34. A minimum residence of three years in the School of Pharmacy is required except for students who

transfer from another school of pharmacy with advanced standing in professional courses (minimum residence of one year as given under the **General Statement**, page 10).

GRADUATE WORK IN PHARMACY

The degrees of Master of Science and Doctor of Philosophy will be conferred upon students who have completed satisfactorily approved graduate work extending over not less than one year for the master's degree and not less than three years for the doctor's degree. Students will be considered for admission to graduate study only if they satisfy the requirements of the Graduate School and have a B.S. degree in pharmacy, chemistry or the biological sciences from an accredited college or university. The major fields of study include pharmacy (physical pharmacy; hospital pharmacy; biopharmaceutics) and medicinal chemistry. The minor fields of study may be selected with the departments of the University. The graduate degree programs of the School of Pharmacy benefit considerably from the relations of the faculty with the School of Medicine, the Research Triangle Institute (especially the Natural Products Laboratory) and the Oak Ridge Institute of Nuclear Studies. The graduate courses are administered by the Graduate School, and information concerning them may be obtained by addressing the Dean of the Graduate School or the School of Pharmacy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

First Year¹

Fall Semester				Spring Semester			
	D.	L.	C.		D.	L.	C.
English 1	3	0	3	English 2	3	0	3
Mod. Civilization 1	3	0	3	Mod. Civilization 2	3	0	3
Foreign Language	3	0	3	Foreign Language	3	0	3
Mathematics 1	3	0	3	Mathematics 2	3	0	3
Chemistry II & 11L	3	3	4	Chemistry 21 & 21L	3	3	4
Phys. Educ. 1	1	0	1	Phys. Educ. 2	1	0	1
	16	3	17		16	3	17

Second Year

Chemistry 41 & 41L	2	4	4	Chemistry 42 & 42L	2	4	4
Physics 24	4	2	4	Physics 25	4	2	4
Pharmacy 21	1	0	1	English 21	3	0	3
Pharmacy 30	1	0	1	Zoology 11	3	3	4
Pharmacy 31	2	3	3	Chemistry 62	2	0	2
Chemistry 61	2	0	2	Phys. Educ. 4	1	0	1
Phys. Educ. 3	1	0	1				
	13	9	16		15	9	18

Third Year

Zoology 41	3	3	4	Bacteriology 51	3	2	4
Pharmacognosy 59	2	3	3	Pharmacognosy 60	2	3	3
Economics 31	3	0	3	Pharmacy 67	3	3	4
² Electives	6	0	6	Biochemistry 51	3	3	4
	14	6	16		11	11	15

Fourth Year

Pharmacy 101	1	0	1	Med. Chem. 64	2	6	4
Physiology 91	3	2	4	Pharmacy 72	3	3	4
Pharmacy 80	1	1	1	Med. Chem. 69	3	0	3
Pharmacy 71	2	3	3	² Electives	6	0	6
Med. Chem. 68	3	0	3		14	9	17
³ Business Ad. 74	3	0	3				
² Elective	3	0	3				
	15	7	18				

Fifth Year

Pharmacy 102	2	0	2	⁴ Pharmacy 103	2	3	2
⁴ Med. Chem. 81	3	0	3	Pharmacy 89	1	0	1
Pharmacy 88	1	0	1	Pharmacy 92	2	6	4
Pharmacy 91	3	6	5	Pharmacy 95	1	0	1
³ Pharmacy 94	1	0	1	³ Pharm. Admin. 98	3	1	3
³ Pharm. Admin. 96	2	0	2	Pharm. Admin. 99	2	0	2
Pharmacology 101	2	3	3½	Pharmacology 102	2	3	3½
	14	9	17½		13	13	16½

1. Students are registered in the General College for the first year and in the School of Pharmacy for the following four years. Transfer students should see page 12.

2. The five electives must be taken in not less than three departments of the Humanities and Social Sciences. Recommended electives are public speaking, business English, American history, and public health. For specific courses, consult the General Catalogue. Electives must be approved by the Dean.

3. Subject to the approval of the Dean, these courses may be replaced for students preparing for graduate work by courses in a foreign language and advanced mathematics.

4. Optional courses—may be replaced with other selected course options approved by the Administrative Board, School of Pharmacy.

COURSE OF INSTRUCTION¹

MEDICINAL CHEMISTRY

Courses for Undergraduates

- 64 **DRUG ANALYSIS** (4). Prerequisites, Chemistry 43 and Chemistry 61 and 62 or the equivalent. A lecture and laboratory course designed to acquaint the student with a general knowledge of the quantitative and qualitative analysis of pharmaceutical products with emphasis on official analytical procedures. **Two lecture and six laboratory hours a week, spring semester, fourth year.** Cocolas; assistants.
- 68, 69 **MEDICINAL CHEMISTRY** (3 each). Prerequisites, Chemistry 62, MedC 51, or equivalents. An introduction to the study of the chemical and physical properties of drugs and their relationship to biological activity. **Three lecture hours a week, fall and spring semesters.** Cocolas, Cavallito, staff.
- 81 **ORGANIC MEDICINAL PRODUCTS** (3). Prerequisite, Chemistry 62 or equivalent. A lecture course dealing with the relationship between chemical structure and medicinal activity, properties, reactions and uses of natural and synthetic drugs. Textbook: Burger, **Medicinal Chemistry**. **Three lecture hours a week, fall semester, fifth year.** Cavallito, Piantadosi.

Courses for Graduates and Advanced Undergraduates

- 121 **CHEMISTRY OF NATURAL PRODUCTS** (3). Prerequisites, Chemistry 61, 62 or equivalent; permission of the instructor. The study of the essential principles involved in the isolation, separation and characterization of natural products. **Three lecture hours a week, spring semester.** Wall.
- 124 **ADVANCED PHARMACEUTICAL ANALYSIS** (3). Prerequisites, Chemistry 43, 61, 62 or equivalents. The applications of quality control and analysis to pharmaceutical products. **Two lecture and three laboratory hours a week, fall.** Cocolas.
- 141, 142 **INTRODUCTION TO RESEARCH IN MEDICINAL CHEMISTRY** (1-4). Prerequisites, Chemistry 61, 62, and permission of professor. **One conference and three or more laboratory hours a week, fall and spring.** Staff.
- 165 **DRUG INFORMATION ANALYSIS AND RETRIEVAL** (2). Description and application of modern methods of handling information in areas of Chemistry and Biomedical Sciences. **Fall or spring.** Hager.

Courses for Graduates

- 241, 242 **SPECIAL PROBLEMS IN MEDICINAL CHEMISTRY** (1-4 each). Prerequisite 61, 62, or equivalent and permission of professor. Conduct feasibility studies in a potential research area. **Fall and spring.** Staff.

¹ The number in parentheses following the descriptive title indicates the credit value of the course counted in semester hours.

- 271, **MEDICINAL CHEMISTRY** (3 each). Prerequisites, Biochemistry 51,
272 Chemistry 61, 62, or equivalent. An intensive study of the concepts pertinent to an understanding of the interaction of natural and synthetic drugs and biological systems at the molecular and quasi-molecular level. Discussion centers around biochemical mechanisms of drug action, and drug synthesis based on biochemical information, structure activity, and physiochemical factors. (1969-1970 and alternate years.) **Three lecture hours a week with reports, fall and spring semesters.** Piantadosi.
- 273 **PERSPECTIVES IN MEDICINAL CHEMISTRY** (3). For graduate and post-doctoral students. **Fall and spring.** Cavallito.
- 361, **SEMINAR** (0). **One hour a week, fall and spring semesters.** Members of
362 the Staff.
- 391, **RESEARCH IN MEDICINAL CHEMISTRY** (1 or more). This course for
392 graduate students consists of laboratory work, conferences with the major professor, and library investigations relating to research. The professor in charge is responsible for the assignments and approval of the subject and character of the thesis. **One conference and nine laboratory hours a week per course, fall or spring semester.** Cavallito, Cocolas, Hager, Piantadosi, Semeniuk.
- 393 **MASTER'S THESIS** (3 or more). **Fall or spring semesters.** Staff.
- 394 **DOCTORAL DISSERTATION** (3 or more). **Fall or spring semesters.** Staff.

PHARMACY

Courses for Undergraduates

- 21 **INTRODUCTION TO PHARMACY** (1). This course introduces the student to the background and total content of the study and practice of pharmacy. The course consists of lectures based on selected references and weekly quizzes. **One hour a week, fall semester, second year.** Werley; members of the staff.
- 30 **METROLOGY AND PHARMACEUTICAL CALCULATIONS** (1). A study of the systems of weights and measures used in pharmacy and their application to pharmaceutical problems. Textbook: Bradley, Gustafson, and Stoklosa, **Pharmaceutical Calculations** (4th ed.). **Two lecture hours a week, fall semester, second year.** Hall; staff.
- 31 **PRINCIPLES OF PHARMACY** (3). Basic pharmaceutical operations and introductory physical pharmacy. Textbook: Martin, **Physical Pharmacy**. **Two lectures and three laboratory hours a week, fall semester, second year.** Hall.
- 67 **PHYSICAL PHARMACY** (4). Prerequisite, Pharmacy 31. A study of the physical structure and properties of matter, solubility, solutions of nonelectrolytes and electrolytes, pH and buffer action, isotonicity, colloids, suspensions, emulsions and other dosage forms. **Three lecture**

and three laboratory hours a week, spring semester, third year. Hall; assistants.

271, **PHARMACEUTICAL PREPARATIONS** (3-4). Prerequisites, Pharmacy 31,
72 67, and Chemistry 62. Important classes of drug forms and individual preparations are studied in relation to physico-chemical and pharmaceutical theory and technology. Textbooks: **United States Pharmacopoeia XVII; National Formulary XII.** Three lecture and three laboratory hours a week, fall and spring semesters, fourth year. Thompson.

80 **FIRST AID** (1). The American Red Cross Standard and Advanced Courses in first aid. Textbook: **American Red Cross First Aid Textbook.** One lecture and one practice hour a week, fall semester, fourth year. Wier; assistant.

88, **PRESCRIPTION SPECIALTIES** (1 for 88) (1 for 89). Prerequisites, Chem-
89 istry 62, and Pharmacy 72. Distinctive classes of pharmaceutical forms, important pharmacotherapeutic groups, and individual drugs are studied in relation to current professional practice. The background, development, actual and potential needs and uses, nomenclature, combinations, and action summary of hormones and congeners, psychotropics, vasculars are emphasized. Textbooks: Kastrup, **Facts and Comparisons**; Burger, **Medicinal Chemistry.** Two lecture hours a week in fall and one lecture hour in spring semester, fifth year. Caiola; staff.

91 **DISPENSING** (5). Prerequisite, Pharmacy 71 and 72. A study of the scientific principles of compounding, including incompatibilities, and the application of these principles to prescription practice. The laboratory work includes the preparation of capsules, suspensions, ointments, etc. Textbook: Jenkins, Sperandio and Latiolais, **Clinical Pharmacy.** Three lecture and six laboratory hours a week, fall semester, fifth year. Paoloni; assistants.

92 **FORMULATIONS** (4). Prerequisite, Pharmacy 91. The application of fundamental principles in the preparation of new dosage forms, including the use of kinetic studies in determining the rate of product deterioration and in estimating the storage life of the new products, etc. Two lecture and six laboratory hours a week, spring semester, fifth year. Paoloni; assistants.

94 **INSTITUTIONAL PHARMACY PRACTICES** (1). To provide the student with an understanding of the institutional environment and the types of pharmacy services required in it. Emphasis will be on Pharmacy service in the small hospital and nursing home. One lecture a week, fall semester, fifth year. Eckel.

94a, **LABORATORY ORIENTATION TO HOSPITAL PHARMACY** (1 each). Pre-
94b requisite, permission of the instructor; registration is limited to fifteen students a year. An impression *in vivo* of hospital pharmacy practice is given as supervised experience in the ongoing operations of the pharmacy department of North Carolina Memorial Hospital. Two laboratory hours a week, fall and spring semesters, fifth year. Taylor, Eckel.

2. During fall semester Pharmacy 71 is given (3 cr.) and taught as corequisite with Pharmacy 101 1 cr.).

- 95 **ORIENTATION TO PROFESSIONAL PRACTICE** (1). Attention is focused on the role of the community pharmacist in public health care and the pharmacist's relationship to other members of the health professions. **One lecture hour a week, spring semester, fifth year.** Hager.

Courses for Graduates and Advanced Undergraduates

- 101 **CONTROL OF PHARMACEUTICAL PRODUCTION** (1). Prerequisite, Pharmacy 67 or equivalent. **One lecture, fall.** Mattocks, Olsen.
- 102 **BIOPHARMACEUTICS** (2). Prerequisite, Pharmacy 67. **Two lectures, fall.** Mattocks.
- 103 **STERILE PHARMACEUTICAL PRODUCTS** (2). Prerequisite, Pharmacy 67. **Two lectures, three laboratory hours a week, spring.** Mattocks, Olsen.
- 104 **TOXICOLOGY** (3). Prerequisite, MedC 69, Bioc 51. An introduction to the study of drug and chemical adverse reactions, including important aspects of toxicology and industrial hygiene. **Three lectures, fall.** McBay, Haley.
- 132a, b **TOPICS IN HOSPITAL PHARMACY** (1). Prerequisites, graduate standing
133a, b or permission of instructor.
- 162, **PHARMACEUTICAL TECHNOLOGY** (4 each). Prerequisite, Chemistry 62
163 and Pharmacy 67. The study and manufacture of pharmaceuticals on a large and semicommercial scale. The laboratory consists of field trips and the preparation and design of tablets and parenterals. **Two lecture and four laboratory hours a week, fall and spring semesters.** Olsen; staff.
- 171, **INTRODUCTION TO RESEARCH IN PHARMACY** (1-4). Prerequisite, per-
172 mission of the instructor. These two courses provide one or two semester's assignments to special research problems in pharmacy. **Fall and spring semesters.** Staff.
- 191, **PRODUCT FORMULATION** (5 each). The development and evaluation of
192 pharmaceutical and cosmetic products. **Two lecture and six laboratory hours a week, fall and spring semesters.** Staff.

Courses for Graduates

- 249 **HOSPITAL PHARMACY AND HOSPITAL ORGANIZATION** (3). **Three lectures a week, fall.** Ekel.
- 250 **PRINCIPLES OF HOSPITAL PHARMACY** (3). Prerequisite, Pharmacy 249. **Three lectures a week, spring.** Eckel.
- 251, **ADVANCED PHARMACEUTICAL TECHNOLOGY** (5 each). Tablets, similar
252, drug forms, parenteral products, and the basic relevant processes are
253, intensively studied. The laboratory consists of the preparation of
254 tablets and parenterals. Field trips are made to observe the large scale production of pharmaceuticals. The pertinent literature is reviewed. **Two lecture and six laboratory hours a week, fall and spring semesters in consecutive years.** Staff.

- 255, **BIOPHARMACEUTICS** (3 each). Prerequisite, Chemistry 182, or equivalent and permission of professor. **Three lectures a week, fall and spring.** Mattocks.
- 256
- 291, **ADVANCED PHYSICAL PHARMACY** (5 each). An intensive study of the application of fundamental physical and chemical principles to the study of drug decomposition and formulation of acceptable dosage forms. The laboratory work includes the application of chemical kinetics to drug stability, the use of buffers, particle size analysis, antioxidants and molecular addition compounds for the stabilization of pharmaceutical products. **Three lecture and six laboratory hours a week, fall and spring semesters.** Hall, Mattocks.
- 292
- 361, **SEMINAR** (0). **One hour a week, fall and spring semesters.** Members of the Staff.
- 362
- 391, **RESEARCH IN PHARMACY** (1 or more). Statements regarding Medicinal Chemistry 391 apply to this course. **One conference and nine laboratory hours a week per course, fall and spring semesters.** Staff.
- 392
- 393 **MASTER'S THESIS** (3 or more). **Fall or spring semesters.** Staff.
- 394 **DOCTORAL DISSERTATIONS** (3 or more). **Fall or spring semesters.** Staff.

PHARMACY ADMINISTRATION

Courses for Undergraduates

- 96 **PHARMACY MANAGEMENT I** (2). A general introduction to the distribution of pharmaceutical products. Comprises a study of the channels of distribution for pharmaceutical products; the functions of the middleman; factors of income and wealth, consumer motivation, and population; history and policies of selected pharmaceutical manufacturers; and other marketing topics. **Two lecture hours a week, fall semester, fifth year.** Chambers, Work.
- 98 **PHARMACY MANAGEMENT II** (3). A study of community pharmacy in the distribution of pharmaceutical products. Comprises a study of personnel policies and training; store layout, design, location, and organization; merchandise operations and control; and expense control and analysis. Textbook: Chute and Hall, **The Pharmacist in Retail Distribution**. **Three lecture and one laboratory hours a week, spring semester, fifth year.** Chambers, Work.
- 99 **PHARMACEUTICAL LAW** (2). A study of the laws affecting the profession of pharmacy and a limited study of selected laws affecting retailers. **Two lecture hours a week, spring semester, fifth year.** Work, McAllister.

PHARMACOGNOSY, THERAPEUTICS, AND THE BASIC SCIENCES

- 59, **PHARMACOGNOSY** (3 each). Prerequisites, Zoology 11, and Chemistry 61, 62. A study of medicinal and pharmaceutical products of biological origin: their production, evaluation, active constituents and uses. Lab-
- 60

oratory work includes microscopical study of powdered drugs and an introduction to the use of other techniques useful in the evaluation of natural drugs and their constituents, including extraction and isolation techniques and identification tests. Textbook: Claus and Tyler, **Pharmacognosy**. **Two lecture and three laboratory hours a week, fall and spring semesters, third year.** Wier; assistants.

- 51 **BACTERIOLOGY** (4). Prerequisites, Chemistry 11-21. The general principles and techniques of bacteriology and the relations of microorganisms to sanitation, agriculture, medicine, and industry. **Three lecture and two laboratory hours a week, spring semester, third year.** Manire, Straughn.
- 51 **BIOCHEMISTRY** (4). Prerequisites, Chemistry 61, 62. The chemistry of products important in the processes of the living organism primarily as a basis for understanding drug action. **Three lecture and three laboratory hours, spring semester, third year.** Piantadosi; assistants.
- 91 **PHYSIOLOGY** (4-5). Prerequisites, Zoology 41 and Chemistry 11-21, or equivalents. A general course in mammalian physiology with emphasis on the various organ systems and their interrelationships. Available to nursing students at 5 semester hours and other students at 4 semester hours. **Three to four lecture and two laboratory/conference hours a week, fall.** Ennis, Staff.
- 101, 102 **PHARMACOLOGY** (3½ each). Prerequisites, all preceding courses in chemistry, zoology, bacteriology, and physiology in the pharmacy curriculum. This course is intended to give an appreciation of the general principles of pharmacology and an understanding of the mechanism of action of the more important agents of modern therapeutics. **Two lecture and three laboratory hours a week, fall and spring semesters, fifth year.** Members of the staff.

COURSES IN ACADEMIC DEPARTMENTS

CHEMISTRY

- 11 **GENERAL DESCRIPTIVE CHEMISTRY** (3). Corequisite, Chemistry 11L. **Three lecture hours a week, fall and spring.** Staff.
- 11L **QUANTITATIVE CHEMISTRY LABORATORY** (1). Corequisite, Chemistry 11. **One 3-hour laboratory a week, fall and spring.** Staff.
- 21 **GENERAL DESCRIPTIVE CHEMISTRY** (3). Prerequisite, Chemistry 11; corequisite, Chemistry 21L. **Three lecture hours a week, fall and spring.** Staff.
- 21L **QUANTITATIVE CHEMISTRY LABORATORY** (1). Prerequisite, Chemistry 11; corequisite, Chemistry 21. Techniques for quantitative acid-base, redox, and complexometric titrimetry. Gravimetric analysis. Total salt ion exchange analysis. (Transfer students who have not had quantitative analysis in their previous courses will take this laboratory.) **One 3-hour laboratory a week, fall and spring.** Staff.

- 41 **MODERN ANALYTICAL METHODS FOR SEPARATION AND CHARACTERIZATION (2).** Prerequisite, Chemistry 21; corequisite, Chemistry 41L; prerequisite or corequisite, Chemistry 61 (2-hour course). The basic principles of chemical separations, including chromatography and electrophoresis, and an introduction to analytical spectroscopy (visible, ultraviolet, and infrared) from a quantitative and structural viewpoint. **Two lecture hours a week, fall and spring.** Buck, Bursey, Knight, Murray, and Reilley.

(This will replace Chemistry 43, which will be deleted in fall, 1970. Chemistry 43 must be taught 1969-70 during transition to new offerings.)

- 41L **LABORATORY IN SEPARATIONS AND ANALYTICAL CHARACTERIZATION OF ORGANIC AND BIOLOGICAL COMPOUNDS (2).** Corequisite, Chemistry 41; prerequisite or corequisite, Chemistry 61. Applications of separation and spectroscopic techniques to organic compounds, including some of biological interest. Principles of chromatography and absorption spectroscopy; correlation of spectra with structure. (This laboratory serves as an organic chemistry laboratory for pre-medical and pre dental students.) **One 4-hour laboratory a week, fall and spring.** Analytical and organic staff.

(This will replace Chemistry 43L, which will be deleted in fall, 1970. Chemistry 43L must be taught 1969-70 during transition to new offerings.)

- 42 **MODERN ANALYTICAL METHODS FOR SEPARATION AND CHARACTERIZATION: SECOND COURSE (2).** Prerequisite, Chemistry 41; corequisite, Chemistry 42L; prerequisite or corequisite, Chemistry 62 (2-hour course). Intermediate analytical spectroscopy (magnetic resonance and mass spectroscopy); principles of Nernstian electrochemistry; acid-base solvent concepts; analytical coordination chemistry; analysis of kinetics and equilibria; radiochemical techniques. **Two lecture hours a week, fall and spring.** Buck, Bursey, Knight, Murray, and Reilley.

(This will replace Chemistry 44, which will be deleted in fall, 1970. Chemistry 44 must be taught 1969-70 during transition to new offerings.)

- 42L **LABORATORY IN SEPARATIONS AND ANALYTICAL CHARACTERIZATION OF ORGANIC AND BIOLOGICAL COMPOUNDS: SECOND COURSE (2).** Prerequisite or corequisite, Chemistry 62; corequisite, Chemistry 42. Applications and illustrations of modern analytical spectroscopic techniques; quantitative investigation of chemical properties through electrochemical, radiochemical, and new titrimetric techniques (some preparative experience is included with these studies). (This course serves as an organic chemistry laboratory for premedical and pre dental students.) **One 4-hour laboratory a week, fall and spring.** Analytical and organic staff.

(This will replace Chemistry 44L, which will be deleted in fall, 1970. Chemistry 44L must be taught 1969-70 during transition to new offerings.)

- 61 **INTRODUCTION TO ORGANIC CHEMISTRY (2).** Prerequisite, Chemistry 21. Molecular structure and its determination by modern physical methods, correlation between structure and reactivity and the theoretical basis for these relationships; classification of "reaction types" exhibited by organic molecules using as examples molecules of biological importance. **Two lecture hours a week, fall and spring.** Hiskey, Little, McKee, Coke, Whitten, Rieke, Harrison, and Brookhart. (This course is for students on the new Chemistry curriculum.)
- 62 **INTRODUCTION TO ORGANIC CHEMISTRY (2).** Prerequisite, Chemistry 21. Molecular structure and its determination by modern physical methods, correlation between structure and reactivity and the theoretical basis for these relationships; classification of "reaction types" exhibited by organic molecules using as examples molecules of biological importance. **Two lecture hours a week, fall and spring.** Hiskey, Little, McKee, Coke, Whitten, Rieke, Harrison, and Brookhart. (This course is for students on the new Chemistry curriculum.)

ECONOMICS

- 31 **GENERAL ECONOMICS I (3).** Not open to freshmen. An introduction to economic principles, problems, and policies. **Three lecture hours a week, fall and spring semesters, third year.** Staff.

BUSINESS ADMINISTRATION

- 74 **GENERAL ACCOUNTING (3).** Prerequisite, Junior-Senior standing Non-business administration students only. Basis for understanding, evaluating, and interpreting Accounting information. Accounting process, determination of cost and income, sources and uses of capital, reporting, changing price levels. **Fall and spring.** Langenderfer, Terrell, Windham, Lunn.

ENGLISH

- 1 **ENGLISH COMPOSITION AND RHETORIC (3).** Required of all students except those qualifying by placement test for English 2. **Fall and spring.** McQueen, Director; staff.
- 2 **ENGLISH COMPOSITION AND RHETORIC (3).** Required of all students except those qualifying by placement test for English 21. **Fall and spring.** McQueen, Director; staff.
- 21 **ENGLISH LITERATURE (3).** Prerequisite, English 2. Substantial readings in Chaucer, Shakespeare, and Milton. Required of all students in the General College. **Fall and spring.** McQueen, Director; staff.

MATHEMATICS

- 1, 2 **INTRODUCTION TO MATHEMATICS (3 each).** An introduction to some basic notions of mathematics, intended for those not planning to do further mathematical work. **Fall and spring.** Staff.

- 15 **INTRODUCTION TO MATHEMATICAL ANALYSIS** (3). Numbers systems, inequalities, equations and graphs, trigonometric functions, inverse trigonometric functions, linear functions, conic sections, mathematical induction, logarithmic and exponential functions, complex numbers. Fall. Staff.

PHYSICAL EDUCATION

- 1-2 **PHYSICAL EDUCATION** (1 each). Required of freshman men. **Four hours a week, fall and spring semesters.** Staff.
- 3-4 **PHYSICAL EDUCATION** (1 each). Required of sophomore men. **Four hours a week, fall and spring semesters.** Staff.
- 21W, 22W **PHYSICAL EDUCATION** (1 each). Required of freshman women. **Four hours a week, fall and spring semesters.** Staff.
- 31W, 32W **PHYSICAL EDUCATION** (1 each). Required of sophomore women. **Four hours a week, fall and spring semesters.** Staff.

PHYSICS

- 24, 25 **GENERAL PHYSICS** (4 each). Prerequisites, Mathematics 15 or equivalent. **Two lecture, one recitation, and two laboratory hours a week, fall and spring semesters.** Shearin, Briscoe, Rowan, Crawford.

ZOOLOGY

- 11 **PRINCIPLES OF ZOOLOGY** (4). No prerequisite. Open to freshmen. Prerequisite to all other courses in zoology. Principles, problems, and experimental methods of animal biology; basic similarities of all living organisms; organ systems and their physiology; embryology, genetics, organic evolution, ecology; survey of the major animal phyla. **Three lecture and three laboratory hours a week, fall and spring semesters.** Staff; assistants.
- 41 **INTRODUCTORY VERTEBRATE ZOOLOGY** (4). Prerequisite, Zoology 11. Especially designed for premedical, pre dental, and pharmacy students. Fundamentals of vertebrate anatomy, physiology, histology, embryology, classification, and homology. **Three lecture and three laboratory hours a week, fall and spring semesters.** L. Y. Lehman, Mueller, Terry; assistants.

DRUGSTORE EXPERIENCE

The Pharmacy Law of North Carolina requires that a candidate for license to practice pharmacy submit evidence of not less than forty-eight months of practical pharmacy experience. However, it allows successful college work leading to the degree of Bachelor of Science in Pharmacy not to exceed thirty-six months to be credited in lieu of practical experience. By a special provision of the Board of Pharmacy, three months of undergraduate research

experience when properly approved by the Board may be credited in addition to the thirty-six months described above. At least three months of practical pharmacy experience must be acquired following graduation. No practical experience can be credited prior to the completion of one year of college work.

In order to validate any experience as mentioned above, it is necessary for the candidate to register with the North Carolina Board of Pharmacy at the time he begins his practical experience training and to discharge the requirements of a program of supervised experience. The Board of Pharmacy will not allow credit for claims of practical experience required under the pharmacy laws unless such claims can be corroborated by records on file in the Board office showing the beginning and ending of the practical experience claimed as supplied by the applicant during his training period and by the pharmacist who supervised the practical experience during the training period. Full details may be secured from the North Carolina Board of Pharmacy, Box 471, Chapel Hill.

SCHOLARSHIPS, FELLOWSHIPS, LOAN FUNDS

UNDERGRADUATE SCHOLARSHIPS

The scholarships that follow are awarded to worthy and needy students of pharmacy who subscribe to the requirements of the donors. A **C** or better average must be maintained each semester in order to be eligible for a scholarship throughout the year. Application for a scholarship must be submitted to the Dean of the School of Pharmacy on or before June 1.

THE AMERICAN FOUNDATION FOR PHARMACEUTICAL EDUCATION SCHOLARSHIPS. This foundation offers annually \$600 to be utilized by the School for undergraduate pharmacy scholarships, and the School awards these scholarships to college students enrolled in the fourth- or fifth-year classes who are in need of financial aid, and who have established evidence of competence and scholastic ability (maintaining a rank in the upper one-quarter of their class or an average of **B** as a minimum).

THE DAVID ASTOR DOWDY PHARMACY SCHOLARSHIP. (Established in 1948.) Endowed by the Mann Drug Stores, of High Point. The fund maintains a pharmacy scholarship valued at \$300 annually. The tenure of the scholarship is for one year, provided the holder of the award maintains high standards both in character and in scholarship, but it may be renewed each year until graduation at the end of five years. The basis of selection shall be high scholastic rank, character, promise of professional aptitude, and financial need.

The scholarships that follow are valued at \$250 or more for each.

THE JUSTICE DRUG COMPANY SCHOLARSHIPS. Three in number. Established in 1931 by the Justice Drug Company, of Greensboro.

THE SCOTT DRUG COMPANY SCHOLARSHIPS. Three in number. Established in 1931 by the Scott Drug Company, of Charlotte.

THE W. H. KING DRUG COMPANY SCHOLARSHIPS. Two in number. Established in 1931 by the W. H. King Drug Company, of Raleigh.

THE VIVIAN SPRADLIN SMITH SCHOLARSHIP. (Established in 1932 by the Woman's Auxiliary of the North Carolina Pharmaceutical Association as a loan fund and converted in 1946 as an endowed

scholarship. It was named to honor Mrs. Vivian Spradlin Smith in 1959.) This scholarship is given annually to a deserving pharmacy student who shows both need and ability. Its value for the current year was \$300.

C. B. MILLER MEMORIAL SCHOLARSHIP. Established in 1945 by Mr. B. R. Ward of Goldsboro, in memory of Mr. C. B. Miller, of Goldsboro.

OWENS, MINOR & BODEKER SCHOLARSHIP. Established by the parent organization in 1945 and continued by Owens, Minor & Bodeker, Inc., of Richmond, Virginia.

THE CHARLOTTE WOMEN'S DRUGGIST AUXILIARY SCHOLARSHIP. Established in 1953 by the Charlotte Women's Druggist Auxiliary.

THE VIRGINIA TOWNSEND HAYES SCHOLARSHIP. Established in 1954 by the Greensboro Drug Club Auxiliary and named in 1963 to honor Mrs. P. A. Hayes.

THE McKESSON & ROBBINS SCHOLARSHIPS. Two in number. Established in 1955 by the McKesson & Robbins, Inc., of Charlotte.

THE NORTH CAROLINA PHARMACEUTICAL RESEARCH FOUNDATION SCHOLARSHIPS. Three in number. Established in 1955.

THE ECKERD SCHOLARSHIPS. Three in number. Established in 1957 by the Eckerd Drug Stores. (Two additional scholarships were awarded to prepharmacy students in the General College.)

THE NORTH CAROLINA MUTUAL WHOLESALE DRUG COMPANY SCHOLARSHIPS. Two in number. Established in 1960 by the North Carolina Mutual Wholesale Drug Company, of Durham.

THE BEARD SCHOLARSHIP. Established in 1960 by a gift from Mrs. Gladys A. Beard of the J. G. Beard Memorial Fund of the North Carolina Pharmaceutical Research Foundation as an endowment to support undergraduate scholarships.

THE MAY SCHOLARSHIP. Established in 1960 through a bequest by T. H. May of Wake Forest to the North Carolina Pharmaceutical Research Foundation, endowing the Thomas H. and Bertie Redford May Memorial Fund, with its income designated for financial aid to worthy undergraduate students.

THE COMMUNITY PHARMACISTS SCHOLARSHIP. Established in 1962 by the O'Hanlon-Watson Drug Company, Inc., of Winston-Salem, as a Christmas remembrance in the name of the pharmacists for a worthy student from the area. Its value for the current year was \$300.

THE PEABODY DRUG COMPANY SCHOLARSHIPS. One award for \$300.00. Established in 1962 by the Peabody Drug Company, of Durham.

THE MYRA KINLAW MEMORIAL SCHOLARSHIP AWARD. Established in 1962 by contributions to the North Carolina Pharmaceutical Research Foundation from the members of the graduating class for an endowed scholarship to the memory of a classmate who lost her life in an auto accident just before Commencement. The annual scholarship is designated for a member of the rising senior class, preferably a woman student, who best qualifies on the basis of scholarship, moral character, professional and general student activities, promise of professional attainment, and financial need. The recipient is determined by a committee consisting of the dean, two faculty members selected by the dean, president of student body, and senior past president of Kappa Epsilon. The award of this scholarship for the following year is announced at the Awards Night program each spring.

LUCILLE SWARINGEN ROGERS SCHOLARSHIP. Established in 1966 by the Women's Auxiliary of the N. C. Pharmaceutical Association. This scholarship is given annually to a deserving pharmacy student who shows both need and ability. The value is \$450 for the current year.

HEALTH PROFESSIONS SCHOLARSHIP PROGRAM. Public Law 89-290 (Health Profession Educational Assistance Amendments of 1965) provides that the Surgeon General shall make grants to each accredited school of medicine, osteopathy, dentistry, optometry, pharmacy and podiatry for scholarship to be awarded to eligible students. These scholarships are available only to such students who without this financial assistance would not be able to pursue the required studies. Scholarships are to be awarded to full-time students who meet the year-class requirements in addition to financial need. Applications for pharmacy students are approved by the Scholarship Committee of the School of Pharmacy. The scholarship may cover such portion of the cost of the student's tuition, fees, books, equipment, and living expenses as the school finds

necessary, but it may not exceed \$2500 for any year. Financial eligibility is determined by results of the Parents Confidential Statement.

The scholarship that follows is valued as stated:

JOHN W. DARGAVEL FOUNDATION SCHOLARSHIP. Valued at \$200 and established in 1964 by the National Association of Retail Druggists for a worthy student in the third, fourth or fifth year class.

Scholarship loans valued at \$250:

THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION SCHOLARSHIP LOANS. Three in number. Established as scholarships in 1938 by the North Carolina Pharmaceutical Association. In 1954 these grants were converted to non-interest bearing loans.

Pharmacy students are also eligible for scholarships, usually valued at \$175 per year, administered by the University Scholarship Committee. The application form should be obtained from the Director of Student Aid, 2 Hanes Hall, and submitted before March 15.

NORTH CAROLINA PHARMACEUTICAL RESEARCH FOUNDATION, INC.

In December, 1946, the North Carolina Pharmaceutical Research Foundation was established by the pharmacists of North Carolina through their state association. Under the terms of its charter the "Foundation is a non-profit, charitable corporation carrying no capital stock and will have the full power to receive donations and bequests; can purchase, lease and otherwise acquire property; and can pay in full or supplement salaries of persons engaged in pharmaceutical research and education. It can also donate equipment, materials or other facilities for the development, expansion and extension of educational, research and service projects thereby promoting the pharmaceutical service of the State and the South through the University at Chapel Hill." The general purposes of the Foundation are to foster and promote the growth, progress, and general welfare of pharmaceutical education and research at the School of Pharmacy and throughout the state. Its main objectives are (1) research fellowships of \$2,500 a year to worthy graduate students for specialized training in pharmacy; (2) special equipment and library materials; (3) experimental culture of drug plants; (4) great teachers secured through salary supplements; and (5) an information bureau at the School of Pharmacy to act as liaison between the new discoveries and the practicing pharmacists.

GRADUATE ASSISTANTS

A number of graduate assistantships have been established in the School of Pharmacy by the University at Chapel Hill. The stipend for the assistantships is determined annually and covers a nine-month period. Holders of these assistantships are expected to devote from twelve to fifteen hours a week in the supervision of laboratory classes and the checking of reports. This allows assistants to carry approximately two-thirds of the regularly scheduled graduate program each semester.

GRADUATE FELLOWSHIPS

THE NORTH CAROLINA PHARMACEUTICAL RESEARCH FOUNDATION, INC., FELLOWSHIPS. Several of these fellowships have been made available to the School for the intensive scientific training of qualified graduate students. Appointments are made upon an annual basis, subject to renewal. These fellowships carry an annual stipend of \$1,800 plus tuition.

Further information concerning these graduate assistantships and fellowships may be obtained from the Dean of the School of Pharmacy.

POST-DOCTORATE FELLOWSHIPS

A number of post-doctorate fellowships in Medicinal Chemistry are available for holders of doctorate degrees in Medicinal Chemistry or in a related field of the pharmaceutical sciences, in organic chemistry, biochemistry, etc., providing the candidate has appropriate minimal academic training and experience to conduct exploratory research on medicinal agents of synthetic or natural origin. Appointments are on a 12 month basis and carry a stipend of \$7,500 including tuition and University fees. Further information may be obtained from the Dean of the School of Pharmacy.

AMERICAN FOUNDATION FOR PHARMACEUTICAL EDUCATION FELLOWSHIPS

The Foundation offers a limited number of fellowships for students seeking graduate degrees in pharmaceutical subjects. These fellowships are open to students (men and women) qualified for registration in approved graduate schools or colleges for one or more of the following major fields: pharmacy, medicinal chemistry, pharmacy administration, pharmacology, and pharmacognosy. Each fellow will receive from the Foundation a stipend to cover the year

of his appointment, plus an allowance for tuition and miscellaneous fees in cases where these expenses are not remitted. Information regarding these fellowships may be obtained by writing to the American Foundation for Pharmaceutical Education, 777 Fourteenth St., N.W., Washington, D. C. 20005.

SPECIAL LOAN FUNDS

THE RHO CHI LOAN FUND. Established in 1933. The Xi Chapter of the Rho Chi Honorary Society has established a loan fund for deserving students of pharmacy.

THE WINSTON-SALEM DRUGGISTS' LOAN FUND. Organized druggists in Winston-Salem gave \$200 in 1942 as an addition to the loan fund used to assist worthy student of pharmacy.

THE T. M. STANBACK LOAN FUND. Established in 1962 by T. M. Stanback of Salisbury by a gift of \$5,000 to be loaned to worthy students of pharmacy.

The loan funds of the University, the North Carolina Medical Care Commission, the North Carolina Rural Rehabilitation Corporation, the John W. Dargavel Foundation, and the North Carolina Pharmaceutical Association are discussed on page 27.

AWARDS AND ORGANIZATIONS

THE PHARMACY FACULTY AWARD.—(Established in 1958.) An engraved bronze mortar and pestle is given annually by the faculty of the School of Pharmacy and awarded to the student in the graduating class making the highest average during the four years of study.

THE BUXTON WILLIAMS HUNTER MEDAL.—(Established in 1937.) A gold medal is offered annually by Mr. D. R. Davis, of Williamston, in memory of his great uncle, the late Mr. Buxton Williams Hunter, of New Bern, to that graduating student who excels in campus citizenship and scholarship.

THE LILLY ACHIEVEMENT AWARD.—(Established in 1966.) This gold medal is given by Eli Lilly and Company of Indianapolis and awarded to a graduating student for superior scholastic and professional achievement. The recipient is determined by the faculty.

THE SCHOOL OF PHARMACY STUDENT BODY AWARD.—(Established in 1948.) A mortar and pestle plaque is given annually by the student body of the School of Pharmacy to the member of the graduating class who has demonstrated the highest qualities of character, deportment, scholarship, participation in extra-curricular activities, and promise of future distinction in the profession. The winner of the plaque is determined by a special committee composed of representatives from each recognized organization in the School of Pharmacy.

PHARMACY SENATE AWARD.—(Established in 1950.) A bronze mortar and pestle in the name of the Pharmacy Senate is awarded to the graduating student who has shown the greatest loyalty and service to the School of Pharmacy. The recipient is determined by a committee of students and faculty appointed by the Pharmacy Senate.

KAPPA EPSILON AWARD.—(Established in 1947.) The Lambda Chapter of Kappa Epsilon, national pharmaceutical fraternity for women, awards annually a silver tray to a fourth or fifth year woman student in the School of Pharmacy who has demonstrated qualities of leadership, character, service, and scholarship. The recipient is selected by eight persons associated with the School of Pharmacy and elected by the chapter.

MERCK AWARDS.—(Established in 1941.) Two awards, each consisting of two reference works, are given annually by Merck & Co., Inc., to graduating students for noteworthy achievement in pharmacy. The recipients are determined by the faculty.

BRISTOL AWARD.—(Established in 1951.) An award consisting of a useful reference work is given annually by Bristol Laboratories Inc., to a graduating student for noteworthy achievement in pharmacy. The recipient is determined by the faculty.

THE REXALL AWARD.—(Established in 1958.) A mounted replica of an antique bronze mortar and pestle is given annually by the Rexall Drug Company and awarded to a graduating student for high achievement in the pharmacy administration courses.

THE M. L. JACOBS MEMORIAL AWARD.—(Established in 1951.) In honor of the memory of Dr. M. L. Jacobs, Dean of the School of Pharmacy from 1946 to 1950, the Xi Chapter of Rho Chi annually awards a prize in the form of a gold key to that student demonstrating the greatest excellence in medicinal chemistry.

RHO CHI FIRST YEAR AWARD. (Established in 1933.) The Xi Chapter of Rho Chi annually awards a prize in the form of a suitable reference work to that student who shows the highest scholarship in the first year of the pharmacy curriculum.

DISTINGUISHED SERVICE AWARD.—(Established in 1961.) An engraved mortar and pestle is presented to an individual other than a student or member of the Pharmacy Faculty who has made outstanding contribution to the instruction, research, and/or service function of the School of Pharmacy.

FRATERNITY SCHOLASTIC AWARD.—(Established in 1964.) A plaque is presented annually to the pharmacy fraternity whose members attain the highest scholastic average in the preceding two semesters. The three professional fraternities, Kappa Epsilon Kappa Psi, and Phi Delta Chi, who participate in the competition sponsor the award to stimulate academic achievement.

THE XI CHAPTER OF RHO CHI.—(Established in 1929.) Charter for chapters of this national pharmaceutical society are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the society is based on high attainment in scholarship, character, personality, and leadership. All candidates selected for

membership must have completed 105 semester hours, or the equivalent, of college work, and they must be approved by the Dean of the School of Pharmacy.

THE UNIVERSITY OF NORTH CAROLINA STUDENTS' BRANCH OF THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION.—(Established in 1936.) The aim of the organization is to unite students of pharmacy for mutual assistance, encouragement, and improvement, and to advance the science and art of pharmacy.

THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF PHARMACY STUDENTS' CHAPTER OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.—(Established in 1952.) It is the purpose of this organization to increase interest in pharmaceutical problems and progress at the national level. The group holds joint meetings with the Students' Branch of the North Carolina Pharmaceutical Association.



