

The School of Pharmacy



RECORD OF
THE UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL

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**FEBRUARY 1982
NUMBER 923**

**RECORD OF
THE UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL**

**THE ONE HUNDRED AND
EIGHTY-EIGHTH SESSION**

THE SCHOOL OF PHARMACY
(USPS 651-960)

Announcements for the Session 1982-1983

**THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
CHAPEL HILL, NC 27514**

THE UNIVERSITY OF NORTH CAROLINA

Sixteen Constituent Institutions

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ROBERT W. WILLIAMS, JR., A.B., M.A., Ph.D., Associate Vice President—Academic Affairs

History of the University

The University of North Carolina is comprised of all the public institutions of higher education in North Carolina that confer degrees at the baccalaureate level or higher. The University was authorized by the State Constitution in 1776, and it was chartered in 1789 by the General Assembly.

The University of North Carolina opened its doors to students at Chapel Hill in 1795. Thereafter, beginning in the latter part of the nineteenth century, the General Assembly of North Carolina has established and supported fifteen other public senior institutions in keeping with Article IX, Section 8, of the Constitution of North Carolina which provides that the "General Assembly shall maintain a public system of higher education, comprising The University of North Carolina and such other institutions of higher education as the General Assembly may deem wise."

By 1969 The University of North Carolina included six constituent institutions, governed by a single Board of Trustees. This multicampus University had its beginnings in legislation enacted in 1931 that defined The University of North Carolina to include The University of North Carolina at Chapel Hill, North Carolina State University at Raleigh, and The University

of North Carolina at Greensboro. In the 1960s three additional campuses were added: The University of North Carolina at Charlotte, The University of North Carolina at Asheville, and The University of North Carolina at Wilmington.

Beginning in 1877, the General Assembly of North Carolina established or acquired ten additional separately governed state-supported senior institutions of higher education. They are: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, North Carolina School of the Arts, Pembroke State University, Western Carolina University, and Winston-Salem State University. Then, in 1971, the General Assembly redefined The University of North Carolina, and under the terms of that legislation all sixteen public senior institutions became constituent institutions of The University of North Carolina.

The constitutionally authorized Board of Trustees of the six-campus University of North Carolina was designated the Board of Governors and this body is by law The University of North Carolina. The Board of Governors consists of thirty-two members elected by the General Assembly, and it is charged with "the general determination, control, supervision, management, and governance of all affairs of the constituent institutions." The chief executive officer of the University is the President.

Each constituent institution of the University has its own faculty and student body. The chief administrative officer of each institution is the chancellor, and the chancellors are responsible to the President.

Each constituent institution also has a board of trustees composed of thirteen members: eight elected by the Board of Governors, four appointed by the Governor, and the elected president of the student body *ex officio*. (The School of the Arts has two additional *ex officio* trustees.) The principal powers of these institutional boards are exercised under a delegation of authority from the Board of Governors.

UNIVERSITY CALENDAR

1982-1983

SUMMER SESSION, 1982

First Term

May 24, Monday
May 25, Tuesday
May 26, Wednesday
May 31, Monday
June 1, Tuesday

June 11, Friday

June 14, Monday

June 18, Friday
June 25, Friday
June 26, Saturday
June 28-29, Monday-Tuesday

Second Term

July 6, Tuesday
July 7, Wednesday
July 8, Thursday
July 13, Tuesday

July 23, Friday

July 27, Tuesday

July 30, Friday
August 6, Friday
August 7, Saturday
August 9-10, Monday-Tuesday

Registration.
First day of classes.
Last day for late registration.
Holiday, Memorial Day.
Last day to drop a course for credit on student's financial account.
Last day to drop courses (undergraduates).
Last day to withdraw for credit on student's financial account.
Last day to drop courses (graduates).
Last day of classes.
Reading day.
Final examinations.

Registration.
First day of classes.
Last day for late registration.
Last day to drop a course for credit on student's financial account.
Last day to drop courses (undergraduates).
Last day to withdraw for credit on student's financial account.
Last day to drop courses (graduates).
Last day of classes.
Reading day.
Final examinations.

FALL SEMESTER, 1982

August 11, Wednesday
August 15, Sunday

August 16-17, Monday-Tuesday

August 18, Wednesday

August 18-20, Wednesday-Friday

Fall Semester opens.
Residence halls open for freshmen and undergraduate transfer students.
Orientation of all new freshmen and undergraduate transfer students according to schedule to be announced.
Residence halls open for returning students.
Registration according to schedule to be announced.

August 23, Monday	Classes begin for all students. Late registration begins. Fee of \$5.00 charged for late registration.
August 27, Friday	End of late registration and change in schedules. No registration accepted after this date.
September 6, Monday	Holiday, Labor Day.
September 7, Tuesday	Last day to drop a course for credit on student's financial account.
September 24, Friday	Last day for graduate students to file applications with Dean for degree to be awarded in December.
October 1, Friday	Last day for dropping courses (undergraduates) and last day for Pass/Fail declarations.
October 5, Tuesday	Last day for filing applications with Dean for degree to be awarded in December (undergraduates).
October 6, Wednesday	Fall Recess—Instruction ends 5 P.M.
October 11, Monday	Instruction resumes 8 A.M.
October 12, Tuesday	University Day.
October 15, Friday	Progress Reports for freshmen due.
October 22, Friday	Last day to withdraw for credit on student's financial account. Last day to withdraw without the semester being counted as a term in residence (undergraduates only).
October 25-29, Monday-Friday	Pre-registration for Spring Semester.
November 13, Saturday	Written examinations for master's candidates for December graduation may not be taken after this date.
November 19, Friday	Last day for graduate students to drop a course.
November 24, Wednesday	Thanksgiving Recess—Instruction ends 1 P.M.
November 29, Monday	Instruction resumes 8 A.M.
December 3, Friday	Fall Semester classes end.
December 6, Monday	Reading day.
December 7, Tuesday	Fall Semester examinations begin.
December 10, Friday	Final signed copies of doctoral dissertations and master's theses for candidates for the December graduation must be filed in the Graduate School by this date.
December 16, Thursday	Fall Semester examinations end.

SPRING SEMESTER, 1983

January 9, Sunday	Spring Semester opens.
January 9 (noon), Sunday	Residence halls open for new students.
January 10, Monday	Residence halls open for returning students.
January 10-11, Monday-Tuesday	Registration/schedule changes.
January 12, Wednesday	Classes begin for all students. Late registration begins. Fee of \$5.00 charged for late registration.
January 18, Tuesday	End of late registration and change in schedules. No registration accepted after this date.
January 25, Tuesday	Last day to drop a course for credit on student's financial account.
January 28, Friday	Last day for graduate students to file applications with Dean for degree to be awarded in May.
February 4, Friday	Last day for filing applications with Dean for degree to be awarded in May (undergraduates).
February 22, Tuesday	Last day for dropping courses (undergraduates) and last day for Pass/Fail declarations.
March 4, Friday	Spring Recess—Instruction ends 5 P.M.
March 14, Monday	Instruction resumes 8 A.M.
March 15, Tuesday	Last day to withdraw for credit on student's financial account. Last day to withdraw without the semester being counted as a term in residence (undergraduates only).
March 26, Saturday	Written examinations for master's candidates for May graduation may not be taken after this date.
April 4, Monday	Holiday, Easter Monday.
April 6-12, Wednesday-Tuesday	Pre-registration for summer and fall.
April 14, Thursday	Last day for graduate students to drop a course.
April 22, Friday	Final signed copies of doctoral dissertations and master's theses for candidates for the May graduation must be filed in the Graduate School by this date.
April 28, Thursday	Spring Semester classes end.
April 29, Friday	Reading day.
May 2, Monday	Spring Semester examinations begin.
May 11, Wednesday	Spring Semester examinations end.
May 15, Sunday	Commencement.

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

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*Nonsalaried

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NANCY JENKINS, Secretary

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THE UNIVERSITY

The University of North Carolina, 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.

GENERAL INFORMATION

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.

Religious Interests and Activities

The interest of the University in the religious life of the community is expressed in the encouragement of foundations or centers supported by Protestant, Catholic, and Jewish institutions in the community and the support of the YMCA-YWCA on campus. The foundations and the YMCA-YWCA are staffed by theologically trained persons who seek to minister to the religious interests and needs of the entire University.

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 the 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 year. Encouragement is given to participation in athletic sports and all kinds of physical activity throughout a full program of intercollegiate and intramural athletics.

Libraries

The Pharmacy Collection is integrated into the holdings of the Health Sciences Library which includes more than 126,000 volumes

devoted to Pharmacy, Medicine, Dentistry, Nursing, Public Health, and other associated sciences.

The general University Library and ten specialized departmental libraries are also available to students of pharmacy. This collection contains approximately 2,109,448 volumes. Including manuscripts, pamphlets, maps, microfacsimiles, recordings, clippings, prints, etc., the count of holdings is more than 7,530,486 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 14,500.

RESIDENCE STATUS FOR TUITION PURPOSES¹

The following sections summarize important aspects of the residency law. A complete explanation of the Statute and the procedures under the Statute is contained in *A Manual to Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes*. This *Manual* and other information concerning the application of this law is available for inspection in the Admissions Offices of the University. Copies of the *Manual* are also on reserve at the Robert B. House Undergraduate Library.

All students are responsible for knowledge of the contents of the Statute and the *Manual*.

General. Every applicant for admission is required to make a statement as to his or her length of residence in North Carolina. 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 or her domicile in North Carolina for at least twelve months immediately prior to the beginning of the term for which classification as a resident for tuition purposes is sought. The student must also establish that his or her presence in the State during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education. A student seeking classification as a resident for tuition purposes must complete an application for resident status (obtainable at his or her admissions office) and return it to the proper admissions office. Every student must be classified either resident

1. The information in this section comes from three sources: (i) North Carolina General Statutes, Sec. 116-143.1, (ii) *A Manual to Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes*, Revised August 1981, (iii) Chancellor's Rules and Procedures for Residence Classification of Students for Tuition Purposes.

or nonresident before enrolling. Unless the student supplies enough information to allow the admissions officer to classify the student as a resident-for-tuition-purposes, the student will be classified as a nonresident for tuition purposes.

Domicile. Domicile means one's permanent dwelling place of indefinite duration, as distinguished from a temporary place of abode; synonymous with "legal residence."

Burden of Proof and Statutory Prima Facie Evidence. The student has the burden of establishing facts which justify his or her classification as a resident-for-tuition-purposes. The balancing of all the evidence must produce a preponderance of evidence supporting the assertion of in-state residence. Under the statute proof of resident status is controlled initially by one of two evidentiary beginning points which are stated in terms of prima facie evidence.

a. Even if the student is an adult, if his or her parents (or court-appointed guardian in the case of some minors) are not legal residents of North Carolina, this is prima facie evidence that the student is not a legal resident of North Carolina unless the student has lived in this state the five consecutive years prior to enrolling or re-registering. To overcome this prima facie showing of nonresidence, the student must produce evidence that he or she is a North Carolina domiciliary despite the parents' nonresident status.

b. Conversely, if the parents of the student are domiciliaries of North Carolina under the Statute, this fact constitutes prima facie evidence that the student is a domiciliary of North Carolina. This prima facie evidence may also be overcome by other evidence of legal residence. If the student has neither living parents nor legal guardian, the prescribed prima facie evidence rule cannot and does not apply.

Statutory Exceptions

a. **Grace Period.** If a student has been properly classified as a resident-for-tuition-purposes and, thereafter, his or her state of legal residence changes, the student does not automatically lose the benefit of the in-state tuition rate immediately. Instead the statute provides for a grace period if the following conditions are satisfied:

1. The student must have been properly classified as a resident for tuition purposes, on the basis of a valid finding that the student in fact was a legal resident of North Carolina and had been such for the requisite twelve-month period prior to classification;

2. At the time of subsequent change of legal residence to a state other than North Carolina, the student must have been enrolled in a public institution of higher education in North Carolina.

The extent of this grace period (during which the in-state rate is applicable in spite of the fact that the student is not a legal resident of North Carolina) is twelve months from the date of change in legal residence plus any portion of a semester or academic term remaining, as of the expiration date of the twelve-month period, in which the student is enrolled.

b. *Qualifying Periods for Spouses.* By virtue of the provisions of G.S. 116-143.1, if a student otherwise can demonstrate compliance with the fundamental statutory requirement that he or she be a legal resident of North Carolina, the second statutory requirement relating to duration of residence may be satisfied derivatively, in less than twelve months, by reference to the length of the legal residence of the spouse of the student, if the spouse has been a legal resident of the State for the requisite twelve-month period.

c. *Reacquisition of Resident Tuition Status.* The prescribed twelve-month period of legal residence may also be shortened if the person seeking to be classified as a resident for tuition purposes was formerly classified a North Carolina resident for tuition purposes, abandoned North Carolina domicile, and re-established North Carolina domicile within twelve months after abandoning it. Students should consult their admissions offices for a detailed explanation of the conditions which must be met to qualify under this section.

Married Persons. The domicile of a married person, irrespective of sex, is determined by reference to all relevant evidence of domiciliary intent. No person is precluded, solely by reason of marriage to a person domiciled outside of North Carolina, from establishing or maintaining legal residence in North Carolina. No person is deemed, solely by reason of marriage to a person domiciled in North Carolina, to have established or maintained a legal residence in North Carolina. The fact of marriage and the place of the domicile of his or her spouse are deemed relevant evidence to be considered in ascertaining domiciliary intent.

Minors. A minor is any person who has not reached the age of eighteen years. The domicile of a minor is that of the father. With a few exceptions noted below, this presumption is virtually irrebuttable. If the father is deceased, the domicile of the minor is that of the surviving mother. If the parents are divorced or legally separated, the domicile of the minor is that of the parent having custody

by virtue of a court order; or, if no custody has been granted by virtue of court order, the domicile of the minor is that of the parent with whom he or she lives; or, if the minor lives with neither parent, in the absence of a custody award, the domicile of the minor is presumed to remain that of the father.

In determining residence status for tuition purposes, there are two exceptions to the above provisions:

1. If a minor's parents are divorced, separated, or otherwise living apart and one parent is a legal resident of North Carolina, during the time period when that parent is entitled to claim, and does claim, the minor as a dependent on the North Carolina individual income tax return, the minor is deemed to be a legal resident of North Carolina for tuition purposes, notwithstanding any judicially determined custody award with respect to the minor.

If, immediately prior to his or her eighteenth birthday, a person would have been deemed to be a North Carolina legal resident under this provision but he or she achieves majority before enrolling in an institution of higher education, that person will not lose the benefit of this provision if the following conditions are met:

- a. Upon achieving majority the person must act, as much as possible, in a manner consistent with bona fide legal residence in North Carolina; and

- b. The person must begin enrollment at an institution of higher education not later than the fall academic term next following completion of education prerequisite to admission at the institution.

2. If, immediately prior to beginning an enrolled term, the minor has lived in North Carolina for five or more consecutive years in the home of an adult relative (other than a parent) who is a legal resident of North Carolina, and if the adult relative, during those years, has functioned as a de facto guardian of the minor, then the minor is considered a legal resident of North Carolina for tuition purposes. If a minor qualified for resident status for tuition purposes under this provision immediately prior to his or her eighteenth birthday, then, when he or she reaches the age of eighteen, he or she will be deemed to be a legal resident of North Carolina of at least twelve months' duration.

Even though a person is a minor, under certain circumstances the person may be treated by the law as being sufficiently independent from his or her parents as to enjoy a species of adulthood for legal purposes. If the minor marries or obtains a judicial decree of emancipation under N.C. Gen. Stat. §7A-717, *et seq.*, he or she is

emancipated. The consequence, for present purposes, of such emancipation is that the affected person is presumed to be capable of establishing a domicile independent of that of the parents; it remains for that person to demonstrate that a separate domicile in fact has been established.

Aliens. Aliens who are permanent residents of the U.S., or who hold a visa which will permit eventual permanent residence in the U.S., are subject to the same considerations with respect to determination of legal residence as citizens. An alien abiding in the United States under a visa conditioned at least in part upon intent not to abandon a foreign domicile (B, F, H, and J visas) cannot be classified a resident. An alien abiding in the United States under a visa issued for a purpose which is so restricted as to be fundamentally incompatible with an assertion by the alien of bona fide intent to establish a legal residence (C and D visas) cannot be classified a resident.

Under a special statute, a refugee or orphan from the Republic of Vietnam, Laos, or Cambodia, paroled into the United States after March 31, 1975, who has abided in this state for twelve consecutive months may receive in-state tuition privileges. No one shall be eligible for this special benefit for any term which ends after July 1, 1982.

Possession of certain other immigration documents may also allow an alien to be considered for in-state tuition status. For more details aliens should consult their admissions offices and the *Manual*. Aliens must file a Residence Status Supplemental Form in addition to the forms normally required of applicants for resident-status-for-tuition-purposes.

Military Personnel. The domicile of a person employed by the Federal Government is not necessarily affected by assignment in or reassignment out of North Carolina. Such a person may establish domicile by the usual requirements of residential act plus intent. No person loses his or her in-state resident status solely by serving in the armed forces outside of the State of North Carolina.

Prisoners. There are special provisions concerning domicile of prisoners. For more information, persons to whom these provisions may apply should consult the *Manual*.

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.

Change of Status. A student admitted to initial enrollment in an

institution (or permitted to re-enroll following an absence from the institutional program which involved a formal withdrawal from enrollment) is classified by the admitting institution either as a resident or as a nonresident for tuition purposes prior to actual matriculation. In the absence of a current and final determination by the admitting institution that the student is a resident for tuition purposes, relative to the term of initial enrollment or reenrollment, the student is classified a nonresident for tuition purposes prior to actual matriculation. A residential classification once assigned (and confirmed pursuant to any appellate process invoked) may be changed thereafter (with a corresponding change in billing rates) only at intervals corresponding with the established primary division of the academic calendar.

Transfer Students. When a student transfers from one North Carolina public institution of higher education to another, he or she is treated as a new student by the institution to which he or she is transferring and must be assigned an initial residential classification for tuition purposes.

The transfer into or admission to a different component of the same institution (e.g., from an undergraduate to a graduate or professional program) is not construed as a transfer from one institution to another and thus does not by itself require a reclassification inquiry unless (1) the affected student requests a reclassification inquiry or (2) the transfer or enrollment occurs following the lapse of more than one quarter, semester, or term during which the individual was not enrolled as a student.

Responsibility of Students. Any student or prospective student in doubt concerning his or her residence status must bear the responsibility for securing a ruling by completing an application for resident status and filing it with 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 these circumstances in writing. Failure to give complete and correct information regarding residence constitutes ground for disciplinary action.

It is the responsibility of the student to pay tuition at the rate charged and billed while an appeal is pending. In effect, the student who is classified as a nonresident at the time of tuition billing pays the nonresident rate. Conversely, if a student is classified as a resident at the time of billing, he or she pays the resident rate.

Any necessary adjustments in the rate paid will be made at the conclusion of the appeal.

If a student, who has been found to be a nonresident for tuition purposes, receives an erroneous notice from an institutional officer identifying the student as a resident for tuition purposes, the student is not responsible for paying the out-of-state tuition differential for any enrolled term beginning before the classifying institution notifies the student that the prior notice was erroneous.

If a student is classified a resident for tuition purposes after submitting falsified residency information or after knowingly withholding residency information, the student's application for in-state tuition status is fraudulent. The institution may re-examine any application suspected of being fraudulent, and, if warranted, will change the student's residence status retroactively to the beginning of the term with respect to which the student originally made the fraudulent application. If this occurs the student must pay the out-of-state tuition differential for all the enrolled terms intervening between the fraudulent application and its discovery. Further, knowing falsification of responses on a resident status application may subject the applicant to disciplinary consequences, including dismissal from the institution.

Appeals of Rulings of Admissions Officers. A student appeal of a classification decision made by any admissions officer must be in writing and signed by the student and must be filed by the student with that officer within fifteen working days after the student receives notice of the classification decision. The appeal is transmitted to the Residence Status Committee by that officer, who does not vote in that committee on the disposition of such appeal. The student is notified of the date set for consideration of such appeal, and, on request of the student, he or she is afforded an opportunity to appear and be heard by the Committee. Any student desiring to appeal a decision of the Residence Status Committee must give notice in writing of that fact, within ten days of receipt by the student of the decision of the Committee, to the Chairman of the Residence Status Committee, and the Chairman promptly processes the appeal for transmittal to the State Residence Committee.

Students or prospective students who believe that they are entitled to be classified residents for tuition purposes should be aware that the processing of requests and appeals can take a considerable amount of time and that applications for classification should not be delayed until registration, when the number of applicants make accelerated handling impossible.

NOTICE ON "DIRECTORY INFORMATION" TO ALL STUDENTS OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

The University of North Carolina at Chapel Hill has routinely made public certain information about its students. Some typical ways this has been done include the following: names of students who are selected by the various honorary societies, who receive scholarships, who make the Dean's List, who hold offices, or who are members of athletic teams are frequently made public. To facilitate campus communication the University annually publishes the **Campus Directory**. Some professional and graduate school student groups publish directories of students in their departments or schools. The annual commencement program publishes the names of persons who have received degrees during the year.

The Family Educational Rights and Privacy Act defines the term "directory information" to include the following categories of information: the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. The University will make public information about each student **limited** to these categories in ways such as those described above. Of course, information from all these categories is not made public in every listing. The **Campus Directory**, for example, publishes only names, addresses and telephone numbers.

Students who do not wish to have any or all of such "directory information" made public without their prior consent must notify the Office of Records and Registration, The University of North Carolina at Chapel Hill, of this fact in a signed and dated statement specifying items that are not to be published. This notice must be received by the Office of Records and Registration by the end of the registration period for the semester or session of first enrollment or, after an absence, of re-enrollment, and by the end of each fall registration period thereafter.

Delayed Registration

Any student registering later than the time appointed for his registration must pay an additional fee of five dollars (\$5.00). No appeal from the late registration charge will be granted, unless the delay results from circumstances clearly beyond the student's con-

trol. Such an appeal must be made in writing to the Director of the Office of Records and Registration, must show justification for the delay in registering, and must bear the approval of the Dean of the School of Pharmacy.

EXPENSES

Tuition and Fees for Each Semester

	N.C. Resident	Non- resident
Tuition	\$250.00	\$1,130.00
Fees	<u>132.50</u>	<u>132.50</u>
Total	\$382.50	\$1,262.50

\$50.00 — Academic Field Fee — Billed During Fifth Year when students register for Pharmacy Practice 92L

The University reserves the right to make changes in tuition and any other fees at any time.

Laboratory Breakeage 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.

Summary of Estimated Expenses for the Academic Year for an Average Student Who Is a Resident of North Carolina

Tuition (School of Pharmacy)	\$ 500.00
Fees	265.00
Board estimated	1,350.00
Residence Hall room (average)	700.00
(See "Room to Live" booklet.)	
Miscellaneous expenses (clothing, travel, spending)	650.00
Books and supplies, estimated for year	275.00
Total for North Carolina Resident	\$3,740.00
Total for Nonresident	\$5,500.00

Payment of Bills

Tuition and fees are due at registration and must be paid by the last day of registration for each semester. Bills may be paid in advance. Checks should be made payable to The University of North Carolina at Chapel Hill and mailed to the University Cashier, 103 Bynum Hall 008A, Chapel Hill, NC 27514. Failure to pay results in the assessment of a late fee.

Housing, Food, Laundry, and Linen Service

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.

Student Housing. The primary objective of the Department of University Housing at Chapel Hill is to provide a physical and psychological atmosphere conducive to each and every student having opportunity to develop to the utmost his or her personality, ability, and sensitivity. The University provides residence hall accommodations for approximately 6600 registered students—undergraduate, graduate, and professional men and women. Three hundred and six apartments are available for student family housing.

Information regarding residence hall accommodations is available by writing to: Department of University Housing, Contracts Office, Carr Building, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27514.

Information regarding student family housing is available by writing to: Manager, UNC Student Family Housing, Odum Village, Branson Street, Chapel Hill, NC 27514.

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, NC 27514.

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

Student Dining Facilities. Dining facilities are operated in locations convenient to residence halls and meals are offered at reasonable rates.

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 \$45.00 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 \$1.50 for the school year. Blankets are available for a deposit of \$3.50 each, with provision for a refund of \$2.00 when the 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, Connor, Craig, Ehringhaus, James, Joyner, Morrison, Odum Village, Spencer, and Winston.

Veterans Adviser

Questions concerning educational benefits under the GI Bill should be taken up with the Veterans Adviser, Room 101, Hanes Hall.

Financial Aid

The University has certain funds which may be granted as scholarships or loaned to any worthy student 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, Vance Hall, UNC, Chapel Hill. Applications should be submitted in January for financial aid expected in the following academic year.

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.

THE PHARMACY PROFESSION

Pharmacy is a unique profession with an unlimited future. Pharmacists are vital members of this nation's essential health team. Expanding opportunities exist in the research, preparation, preservation and dispensing of drugs and pharmaceuticals.

Each year the 72 schools of pharmacy in the United States graduate close to 7,400 pharmacists. This number is far from adequate to fill existing needs. In fact, it is estimated that the **minimum** requirement is at least a thousand more every year. North Carolina has an acute shortage of pharmacists due to the number of single pharmacist store operations and the expansion of other areas of specialization, such as manufacturing and hospital pharmacy practice.

What about women in pharmacy? It is estimated that 10 percent of all pharmacists and 31 percent of all pharmacy students in the United States are women. This is a rewarding profession offering excellent working conditions and salaries. At the School of Pharmacy of The University of North Carolina, 58 percent of its students are women—which exceeds the national average.

Should You Be A Pharmacist?

Well, that depends. Do you have a very real and sincere interest in people? This is essential since the pharmacist works as a member of the health team in intimate contact with people—both sick and well. **The main purpose of this speciality is the relief of human suffering and the advancement of better health for all.**

Personal qualifications are important before considering a pharmacy career. You should have ability, aptitude, and interest in science. This is quite natural since a pharmacist deals with drugs and chemicals and the ways these affect the human body. Do you strive for accuracy and order? These are other desirable attributes of the person who chooses pharmacy as a professional career.

Of course, you should have outstanding personal characteristics including high morals and good judgment.

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 excellent resources, both on and off campus, 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 distinc-

tively 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 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.

An optional professional education and training program leading to an advanced professional degree (Doctor of Pharmacy) is also offered. This program involves professionally oriented courses in different speciality areas for a selected number of students.

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

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, hospital pharmacy, and pharmacy administration.

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 program.

In the third, or service, phase of the School's threefold mission, the faculty and staff promote the disciplines and support the mis-

sions 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 education 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 three-year program of professional studies in the School of Pharmacy upon completion of at least two years (the prepharmacy years) of collegiate work in the General College of The University of North Carolina or in any accredited liberal arts college (2-3 program) and designated courses. The American Association of Colleges of Pharmacy stipulates for its member schools that students transferring from a college other than another school of pharmacy must complete the required professional courses in proper sequence in the School of Pharmacy for the B.S. in Pharmacy Degree. Each application for admission must be approved by the Director of Admissions of the University and the Committee on Admissions of the School of Pharmacy. An application 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 for 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.

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, Chapel Hill, NC 27514.

Loans

Health Professions Loan Program. For the past several years the United States Government has made available to the School of Pharmacy funds which support loan programs. Recent experience indicates that these funds may be sharply decreased in the future.

Federal law provides that the Surgeon General shall make grants to each accredited school of medicine, osteopathy, dentistry, optometry, pharmacy, and podiatry for loans to be awarded to eligible students. These loans are available only to students who without this financial assistance would not be able to pursue the required studies. Loans are to be awarded to full-time students who meet the year-class requirements in addition to financial need. Application for these loans is to be made to the Office of Student Aid, Vance Hall. Financial need is determined by that office. Awards are determined by the Committee on Scholarships of the School of Pharmacy. The loan 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 \$2,500 plus tuition and fee costs for any year. Financial eligibility is determined by analysis of the Parents' Confidential Statement.

N.C. Department of Human Resources Loans. 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 (a) a rural community of 10,000 or less population, or (b) licensed hospitals or nursing homes within the State, (c) State or local public health departments and nonprofit community primary care programs, or (d) a medically underserved urban or rural area not included in a, b, or c but in which there is a need as determined by the Division of Facility Services, for one year for each academic year of assistance. The maximum loan available is \$2,000 per academic year or \$8,000 for a four-year period. Detailed information may be obtained from the Department of Human Resources, Division of Facility Services, P.O. Box 12200, Raleigh, NC 27605.

N.C. Rural Rehabilitation Corporation Loans. 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, NC.

Edwin H. Smith, Jr., Loan Fund. Annual loans from the Edwin H. Smith, Jr., Loan Fund, of up to \$2,000 are available to students who have been residents of Halifax County for at least two years and who are enrolled in the curriculum at the UNC School of Pharmacy. Interest is at 2 percent; loans are payable within four years after graduation. Application should be made to the Edgecombe Bank and Trust Company, P.O. Box 1259, Tarboro, NC 27870.

National Association of Retail Druggists Loans. Pharmacy students are eligible for loans to cover tuition, fees, and books not exceeding \$500 per semester from the National Association of Retail Druggist's Foundation, 1750 K Street, N.W., Washington, D.C. 20006. Loans are made only to complete the three years of pharmaceutical education. The applicant must be recommended by the dean of the School of Pharmacy. Two cosigners 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.

The North Carolina Pharmaceutical Association Scholarship Loans. The N.C. Pharmaceutical Association makes available a number of short term tuition loans which do not usually exceed \$300 per semester and which bear no interest. Application is made

to A. H. Mebane III, Institute of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514. These loans are restricted to members of the Student Branch of the N.C. Pharmaceutical Association. The maximum of such loans to a student is \$1800. Repayment must begin within six months of graduation from the School of Pharmacy or termination of pharmacy studies.

Under the Board of Governors general **Minority Presence Grant Program** black students may be eligible for special financial assistance if they are residents of North Carolina, enrolled for two or more courses in a degree program, and demonstrate financial need.

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 most of these scholarships throughout the year. Application for a scholarship must be submitted to the Office of Student Aid before March 1. Financial need is determined by the Office of Student Aid. Scholarship awards are determined by the Committee on Scholarships of the School of Pharmacy.

The values of these scholarships range from \$200 to \$1,000 per year. The tenure of these scholarships is one year, provided the recipient maintains a "C" average. Application must be made each year, as set forth above, for any scholarship.

The David Astor Dowdy Pharmacy Scholarship. Established in 1948. Endowed by the Mann Drug Stores of High Point. The fund maintains a number of pharmacy scholarships 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 three years. The basis for selection shall be high scholastic rank, character, promise of professional aptitude, and financial need.

The Justice Drug Company Scholarships. Three in number. Established in 1931 by the Justice Drug Company of Greensboro.

The William Julius and Vivian Spradlin Smith Scholarship. Established in 1932 by the Women's Auxiliary of the North Carolina Pharmaceutical Association as a loan fund. In 1946 it was converted to an endowed scholarship and named to honor Vivian Spradlin Smith.

In 1977, at the request of Mrs. Smith, and to honor Mr. Smith's approaching retirement as Executive Director of the N.C. Pharmaceutical Association, it was retitled to include Mr. Smith's name. This scholarship is given annually to a deserving pharmacy student who shows both need and ability.

C.B. Miller Memorial Scholarship. Established in 1945 by Mr. B. R. Ward of Goldsboro, in memory of Mr. C. B. Miller, of Goldsboro.

The McKesson & Robbins Scholarships. Two in number. Established in 1955 by McKesson & Robbins, Inc. of Charlotte.

The Eckerd Scholarships. Four in number. Established in 1957 by the Eckerd Drug Stores and continued by the Jack Eckerd Corporation.

The North Carolina Mutual Wholesale Drug Company Scholarships. Two in number. Established in 1960 by the North Carolina Mutual Wholesale Drug Company of Durham. Intended for students who will pursue a career in community pharmacy.

Lucile 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.

Vivian Spradlin Smith Scholarship. Established in 1978 by the Women's Auxiliary of the North Carolina Pharmaceutical Association and given annually to a deserving pharmacy student who shows both need and ability.

The Hall Scholarship. Established in 1976 by Mr. J. B. Clay of Oxford in honor of John Perry Hall and Samuel Cannady Hall. An annual stipend of \$500 to be awarded either as a single scholarship or two small scholarships.

The North Carolina Pharmaceutical Research Foundation Scholarship. Number varies. In recent years these funds have been utilized as matching funds for the federal grants which provide the health professions loans.

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 registration 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 catalog 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 class attendance is a student obligation, and a student is responsible for all the work, including tests and written work, of all class meetings. No right or privilege exists which permits a student to be absent from any given number of class meetings.

If a student misses more classes than the instructor deems advisable, the instructor will report the facts to the Office of the Associate Dean for appropriate action. Instructors should explain their attendance regulations during the first week of every class and report promptly to the Office of the Associate Dean the name of any student who exceeds the number of absences deemed advisable. If the student misses without excuse more classes than the instructor deems advisable, the instructor may request that the Dean drop him from the course with a grade F.

The appearance of a student's name on the Infirmary List constitutes an excuse for the student for absences from classes during the period the student is in the Infirmary. This list is circulated to the School of Pharmacy, and, in cases of doubt, the instructor may check with the Dean's office.

Students who are members of regularly organized and authorized school activities and who may be out of town taking part in some scheduled event are to be excused during the approved period of absence.

Absences from class for valid reasons are excused only by the instructors. A student should present the explanation for any absences to his instructor at the next meeting of the class."

Final 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 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 period 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 five days of instruction of any term.

Standing

For undergraduates, the permanent grades are **A** (highest level of attainment); **B** (high level of attainment); **C** (adequate level of attainment); **D** (minimal passing level of attainment); **PS** (passed on the "Pass-Fail" option); and **F** (failed—unacceptable performance). The temporary grades are **AB** (absent from examination) and **IN** (work incomplete). Temporary grades are calculated as **Fs** until and unless they are converted to permanent grades. Conversion must occur within 12 months from the date of assignment of the temporary grade.

Rank of Classes

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

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 Progression

A student must maintain a minimum 2.0 grade point average in order to progress through the B.S. in Pharmacy Degree Program, commencing upon completion of the first semester of the professional program.

If, from that time onward, a student's grade point average drops below a 2.0 in the professional courses, he/she is placed on academic probation. A student must regain a 2.0 grade point average in the professional courses by the end of the next regular semester (fall, spring) in order to continue in the program. A student may not register for a course until he has satisfactorily completed the prerequisite course.

A review board will monitor student progression through the B.S. in Pharmacy Degree Program.

If a student who has been placed on academic probation does not regain his eligibility by the end of the next semester, the case will come before the review board. This board will determine: (a) if the student will be allowed to continue in the B.S. in Pharmacy Degree Program, or (b) if the student is allowed to continue with a deficiency, specify the provisions for making up the deficiency. Eligibility may be regained by repetition of courses (with no grade lower than "C") or taking of courses to be specified by the review board. If a student fails a professional course, he must repeat the course to get a minimum grade of "C." If a student makes a "D" in a professional course, he may repeat the course to get a minimum grade of "C." If a student makes a "C" or higher in a professional course, he cannot repeat the course for a letter grade.

A student will not be allowed to register for the Pharmacy Prac-

tice 92L (Off-Campus Clinical Rotation) until his cumulative grade point average is 2.0.

If a student is placed on probation, regains eligibility, and is placed on probation a second time, he must come before the review board for evaluation and disposition.

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. (The current progression requirements are being reviewed and revised by the faculty.)

Requirements for Graduation

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 all work taken in the last three years of the Pharmacy curriculum.

Beginning in the Fall Semester, 1978, and subsequent semesters, quality points are earned as follows: A = 4.0; A- = 3.7; B+ = 3.3; B = 3.0; B- = 2.7; C+ = 2.3; C = 2.0; C- = 1.7; D+ = 1.3; D = 1.0; F = 0. 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.

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's Office 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 or Associate Dean must be filed promptly with the Office of Records and Registration, 1 Hanes Hall.

If a student withdraws after midterm and is reported as below passing in two or more courses, that will be counted as a semester in residence in all computation of his requirements for readmission. If a student withdraws before midterm, it will be left to the discretion of the Dean's Office 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.

In case of withdrawal from the University, tuition and fees will be prorated over a period of nine weeks from the date of registration. The student pays one-tenth of his semester bill for each week he remains in residence. No refund will be made after the ninth week of the semester.

PHARMACY DEGREE PROGRAMS

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 pages 39-40. 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 28).

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. Certain subject matter, however, is basically necessary regardless of the careers which the student may expect to follow after graduation. 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 pages 39-40. Statements about graduate work are given on pages 26 and 27.

REQUIREMENTS FOR ADMISSION

Freshman and Sophomore

Applicants may be admitted to the General College for the two years 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 certificate of the applicant's record.

A nonrefundable application fee of \$15.00 must be submitted with the application for admission. An applicant who has been offered admission reserves his or her place by the payment of \$25.00 nonrefundable 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 sixteen 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	² Electives to make total of	16 units
Plane Geometry	1 unit		

Registration in the prepharmacy curriculum on the UNC at Chapel Hill campus or elsewhere does not automatically assure the student of a place in the third-year class of the School of Pharmacy. Enrollment is limited and students must be selected on a competitive basis. Final selections of students are made by the Admissions Committee of the School of Pharmacy which is composed of faculty members and students and is charged with the responsibility of selecting eligible students. Scholarship, character, indus-

2. 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 some useful electives for prospective pharmacy students.

try, entrance examination scores, and priority of application are governing factors for admission. In addition, all students must complete the Pharmacy College Admission Test (PCAT) for consideration for admission.

Transfer Students

Candidates for admission as transfer students with third-year standing must have credit for the courses in the two-year prepharmacy curriculum. 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 may be requested to appear at the School of Pharmacy for a personal interview. All applications should be filed as early as possible in the period before December 1. No applications will be reviewed by the Admissions Committee if received after March 1.

Readmissions

A student leaving the University with an academic deficiency must restore his eligibility before applying for readmission as a regular student. Restoration of eligibility may only be accomplished by enrolling at The University of North Carolina at Chapel Hill in summer sessions or through correspondence instruction from this campus.

Students who have become academically ineligible on more than one occasion will not be considered for readmission.

Industrial Trip

A planned visit is scheduled during the Fourth year to one of the major pharmaceutical industrial plants. This trip is designed to introduce the students to an educational experience involving modern methods of research, quality control, production, and marketing of pharmaceuticals. Students are required to participate in this trip and they are encouraged to plan in advance for it.

Pharmacy Experience

The requirements for licensure as a pharmacist in North Carolina provide that the candidate must submit satisfactory evidence of at least 1500 hours of practical pharmacy experience under the supervision of a licensed pharmacist in a program approved by the North Carolina Board of Pharmacy. The structure of the practical pharmacy experience program necessary to meet requirements is described in the **Extern/Internship Program Instructions** of the North Carolina Board of Pharmacy. Such experience may be acquired in a community or hospital pharmacy. Up to 600 hours of experience credit may be acquired concurrent with college attendance when gained in an approved pharmacy course or project. No practical experience can be credited prior to completion of two years of college work.

In order to validate any practical experience, it is necessary for the candidate to register with the North Carolina Board of Pharmacy within five days of 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 each period of practical experience claimed as supplied by the applicant during his training period and by the pharmacist who supervised the practical experience. Full details may be secured from the North Carolina Board of Pharmacy, 209 Carr Mill Mall, P.O. Box H, Carrboro, NC 27510.

Requirements for Two-Year Prepharmacy Program¹

	UNC at Chapel Hill	Other Schools
English Composition	6	6
General Chemistry	8	8
Math (including Calculus)	6 ²	6
Biology—Fund. Human Anat. & Physiology	8	8

1. A minimum of 62 academic credit hours exclusive of physical education activity courses required for admission to the 2-3 Professional Program.

2. Recommended that other Math requirement come from following UNC at Chapel Hill equivalents: Math 2, 30, 32; Stat 12, 23; Computer Science 14, 16.

Economics	3	3
Organic Chemistry and Advanced Analytical Chemistry	12	8 ⁴
General Education Electives (Must be taken from list on next page)	15	15
Physics	4 ³	8
Physical Education	2	2

Three-Year Professional Program (Leading to B.S. in Pharmacy Degree)

	Lec.	Lab.	Cred.		Lec.	Lab.	Cred.
Bact. 51.....	3	2	4	Med. Chem. 66.....	4	0	4
Physiol. 93.....	3	2	4	Pharmacy 48.....	3	3	4
Phar. Prac. 21.....	1	0	1	Pharmaceutics 53..	3	0	3
Pharmaceutics 52... 3	0	3	3	Pharmaceutics 53L.	0	3	1
Pharmaceutics 52L.. 0	3	1	1	Phar. Prac. 75.....	4	0	4
Med. Chem. 65..... 2	0	2	2		14	6	16
Pharmaceutics 51... 1	0	1	1				
	13	7	16				
Pharmacology 55... 3	0	3	3	Phar. Admin. 96....	3	0	3
Phar. Admin. 90..... 3	0	3	3	Pharmacology 56... 3	0	3	3
Med. Chem. 68..... 3	0	3	3	*Pharmaceutics 72L.	0	3	1
Phar. Prac. 76..... 4	0	4	4	Med. Chem. 69..... 3	0	3	3
Pharmaceutics 54... 3	0	3	3	Phar. Prac. 77..... 4	0	4	4
	16	0	16	Phar. Admin. 99....	2	0	2
					15	3	16
Fall or Spring				Fall or Spring			
Professional and Allied Options.... 12	0	12	12	*Pharmacy Practice.. 0	40	12	12
"Free Elective"..... 3	0	3	3	92L			
	15	0	15		0	40	12

*Students will be divided into two sections. One-half of the Fourth Year class will be assigned to Pharmaceutics 72L in the Spring Semester of the Fourth Year and will be assigned to Pharmacy Practice 92L in the Fall Semester of their Fifth Year. The other half of class will take Pharmaceutics 72L in the Fall Semester of the Fifth Year and Pharmacy Practice 92L in the Spring Semester of the Fifth Year. (Pharmaceutics 72L is a prerequisite for Pharmacy Practice 92L.)

General Education Electives (At least one course must be taken from the Social Sciences group and one from the Humanities and Fine Arts group.)

All foreign language will count toward the general elective requirements.

3. Physics 20 if taken at UNC at Chapel Hill—if taken elsewhere Physics 24 and 25 (or their equivalents). (Most schools do not have an equivalent for Physics 20 given at UNC Chapel Hill.)

4. Organic Chemistry *with* laboratory.

All foreign language will count toward the general elective requirements.

Humanities and Fine Arts

Art 30, 31, 32, 36, 39, 44, 46, 49, 51, 52, 94

Classics:

Classical Archaeology 31, 34, 35, 40, 41, 42

Classics 26, 30, 31, 33, 34, 35, 36

Greek, 3, 4, 21, 22

Latin 3, 4, 21, 22

Comparative Literature 21, 22, 85, 90, 91, 95, 96

Dramatic Art 15, 35, 50, 59, 60, 80, 81, 82

English 20, 21, 22, 23, 24, 25, 26, 28, 29, 42

German 3, 4, 21, 31, 32, 70, 71, 80, 81

Linguistics:

Linguistics 30

Chinese 50

Music 21, 22, 31, 32, 41, 42, 43, 81, 82, 83, 84, 85, 86

Philosophy 20, 22, 31, 32, 33, 35, 37

RTVMP (Radio Television, and Motion Pictures) 42, 45

Religion 20, 21, 22, 24, 26, 27, 29, 30, 35, 36, 37, 38, 39, 41, 46, 71, 72, 73, 91

Romance Languages:

French 3, 4, 21, 22, 40, 41, 52, 53, 60, 61, 62, 70, 71, 72, 73, 74, 75, 80, 81, 82

Italian 3, 4, 21, 41, 42, 70, 82

Portuguese 3, 4, 35, 53

Spanish 3, 4, 21, 22, 35, 40, 52, 71, 72, 73, 80, 81, 82, 85, 86

Slavic Languages:

Russian 3, 4, 44, 70, 72, 74

Speech Communication 21, 33, 35, 41, 53

Social Sciences

African Studies 40

Afro-American Studies 40, 41

Anthropology 26, 36, 37, 41, 42, 55

Economics 31, 32, 59

Geography 48, 51, 52

History 11, 12, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 41, 42, 44, 45, 46, 47, 48, 49

Philosophy 36

Political Science 17, 41, 42, 43, 52, 54, 55, 56, 60, 63, 64, 85

Psychology 10, 28, 33

Sociology 51, 52, 53, 54, 55, 64

Applied Options (no more than 2 courses may be taken from this list)

Anthropology 112, 115, 121, 170

Biostatistics 101, 105, 106, 108

Business 130, 144, 161

Economics 70, 150

Epidemiology 160, 162

Health Administration 100

Maternal and Child Health 105
Parasitology 131, 134
Pharmacology 90, 106, 123, 118
Philosophy 102
Psychology 80
Sociology 151, 159
Biochemistry 22, 140
Bacteriology 110, 115
Zoology 104, 110, 120, 121, 122, 125, 101, 100, 102
Physiology 140
Chemistry 144, 145, 146, 147, 160, 166, 168, 180, 181, 182
Physical Education 88
Nutrition 110

Doctor of Pharmacy (Pharm.D.) Program

The purpose and objectives of the professional degree program are to prepare an advanced pharmacy specialist who can effectively cope with the complex problems in the delivery of comprehensive pharmaceutical health care; who possesses both the knowledge and skills necessary to function as an authority in the clinical use of drugs; who can apply pharmaceutical and biomedical sciences to the practical problems of drug therapy; who is motivated to participate in the interdisciplinary delivery of health care; and who can function as an easily accessible health care informant and educator for drug therapy.

While there continues to be need for baccalaureate level pharmacists, the emerging role of the pharmacist in the clinical setting has brought demands for exceeding the baccalaureate level.

The Pharm.D. pharmacist emphasizes the clinical application of scientific and pharmaceutical information into pharmacy practice as it pertains to patient care.

Recognizing the need in North Carolina for pharmacists with a professional degree and realizing the inability of the existing health care system to use more than a small percentage of pharmacists at the professional degree level, The UNC School of Pharmacy Pharm.D. Degree Program is restricted to a maximum of 15 students per year. These students will be given reasonable opportunities to introduce a new pharmacy expertise in an evolving interprofessional system of health care delivery. Our immediate goals must be centered on practical needs for contemporary services, but our long-range goals must lead us toward a greater level of sophistica-

tion in the evolving health care system through the adoption, on a limited scale, of the professional degree program.

The adoption of a professional degree program is the response of pharmacy education to the demands of the rapidly changing health care delivery system to provide an individual who possesses comprehensive knowledge and a higher level of sophistication in the profession of pharmacy.

The Pharm.D. Program is consistent with the University's mission to educate and train students to achieve the highest level of skills and competencies. It is also consistent with the School of Pharmacy's mission to provide clinical pharmacy training as a requirement for accreditation.

Requirements and Curriculum

The Pharm.D. Program is an optional professional degree program that is available for students enrolled in the Bachelor's curriculum. Students in their second year of study can apply to the Pharm.D. curriculum, and if accepted, the students will be enrolled in a two-year Pharm.D. program. Applicants who have already been granted a Bachelor of Science Degree in Pharmacy are also eligible to apply.

The curriculum is designed to specifically provide knowledge in medically related sciences which relate to clinical utilization of drugs and to assure comprehension of this knowledge.

The students will rotate through a number of settings to bring to their education a broad spectrum of practice. The students may rotate through the Drug Information Center, Clinical Pharmacology, Pediatrics, and Adult Medicine Services. Additionally, time will be spent in special areas of interest such as Cardiology, Endocrinology, Hematology, and Ambulatory Care Centers. The general philosophy will be to expose students to a broad range of practices and their problems and to develop solutions to these problems.

The course of study will encompass a minimum of four full semesters and one summer (20 consecutive months and 70 credit hours). All students, whether they have been admitted to the program after four or five years of study, must complete the entire complement of required coursework.

Employment opportunities for graduates of a professional degree program exist in: 1) nonteaching hospitals and institutions, 2) teaching hospitals, 3) AHEC pharmacies, 4) prescription centers, group practices, and clinics, 5) health maintenance organizations, 6) schools of pharmacy, and 7) Public Health Service.

Courses

Coursework for the Pharm.D. Program is listed and summarized below. Students who are accepted after their fourth year at UNC at Chapel Hill School of Pharmacy will also be required to take Pharmacy Practice 92L, a nine-credit course, the summer after their fourth year.

Tuition and Fees for Each Semester

Current tuition and fee rates for North Carolina residents and nonresidents in the Pharm.D. Program are summarized below. These rates are subject to change based upon modifications made by The University of North Carolina Board of Governors.

Fall or Spring Semester

	Resident	Nonresident
Tuition	\$486.00	\$1,395.00
Fees	126.75	126.75
Total	<u>\$612.75</u>	<u>\$1,521.75</u>

Each Summer Term

	Resident	Nonresident
Tuition	\$194.00	\$558.00
Fees	43.00	43.00
Total	<u>\$237.00</u>	<u>\$601.00</u>

For further information regarding the Pharm.D. curriculum and applications process, please contact Dr. Ralph H. Raasch, UNC at Chapel Hill, School of Pharmacy, Beard Hall — 200H, Chapel Hill, NC 27514.

Curriculum Leading to Doctor of Pharmacy Degree

Students will be accepted for this program after their fourth year at UNC at Chapel Hill, or a B.S. in Pharmacy Degree program from UNC or another school of pharmacy.

First Summer

Pharmacy 92L - modified to include a Community, Hospital, and Clinical Pharmacy Externship for 12 weeks for 9 semester hours. (Only for students admitted after their fourth year at UNC School of Pharmacy. All other students begin in the Fall Semester.)

First Year - Fall Semester	Lec	Lab	Cred
PhPr 176 - Advanced Clinical Pharmacy	0	9	3
MedC 152 - Mechanism of Adverse Drug Reactions	3	0	3
PhAd 179 - Drugs in Health Care	3	0	3
Professional Option	3	0	3
Bios 105 - Principles of Statistical Inference	3	0	3
PhPr 132 - Seminar	1	0	1
	<u>13</u>	<u>9</u>	<u>16</u>

First Year Spring Semester	Lec	Lab	Cred
PhPr 178 - Drug Information Retrieval & Analysis	1	3	2
PhPr 177 - Advanced Clinical Pharmacy	0	9	3
Pharmacy 182 - Clinical Pharmacokinetics	3	2	4
Professional Option	3	0	3
Phar 156 - Clinical and Analytical Toxicology	3	0	3
PhPr 133 - Seminar	1	0	1
	<u>11</u>	<u>14</u>	<u>16</u>

Second Summer	Lec	Lab	Cred
PhPr 179 - Monitoring Drug Therapy	2	2	3
PhPr 194 - Clinical Pharmacy Clerkship	0	27	9
	<u>2</u>	<u>29</u>	<u>12</u>

Second Year - Fall Semester	Lec	Lab	Cred
PhPr 195 - Clinical Pharmacy Clerkship	0	36	12
PhPr 132 - Seminar	1	0	1
	<u>1</u>	<u>36</u>	<u>13</u>

Second Year - Spring Semester	Lec	Lab	Cred
PhPr 196 - Clinical Pharmacy Clerkship	0	36	12
PhPr 133 - Seminar	1	0	1
	<u>1</u>	<u>36</u>	<u>13</u>

PROFESSIONAL OPTIONS FOR PHARM.D. STUDENTS

Pharmaceutics

Pharmacy 104	Toxicology and Drug Abuse (3)
Pharmacy 106	Radiopharmaceuticals (3)
Pharmacy 106L	Radiopharmaceuticals Laboratory (2)
Pharmacy 162	Pharmaceutical Technology (3)

Pharmacy Practice

Pharmacy Practice 94	Institutional Pharmacy Practice (3)
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Pharmacy Practice 203	Metabolic Management of the Hospitalized Patient (2)
Pharmacy Practice 192	Research Methods in Pharmacy Practice (3)
Pharmacy Administration	
Pharmacy Administration 180	Pharmaceutical Marketing and Economics (3)
Medicinal Chemistry	
Medicinal Chemistry 151	Biomedical Chemistry (3)
Medicinal Chemistry 153	Basic Concepts of Cancer and its Therapy (3)
Allied Options	
Biostatistics 145	Principles of Experimental Analysis (3)
Parasitology 134	Human Parasitology (4)
Pharmacology 107	Introduction to Neurobiology (3)
Pharmacology 123	Behavioral Pharmacology (3)
Biochemistry 140	Clinical Chemistry (3)
Pharmacology 90	Introduction to Neurobiology (3)
Pharmacology 106	Current Concepts in Molecular Endocrinology (2)
Pharmacology 118	Neuroendocrinology (2)

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. A brief description of the major fields of study follows. The minor fields of study may be selected with the departments of the University.

Hospital Pharmacy

A combined graduate program in Hospital Pharmacy is offered. The residency program is accredited by the American Society of Hospital Pharmacists. This program offers the opportunity to specialize functionally in various areas of pharmacy practice during the second year of the program.

The program requiring 24 months to complete leads to a Master of Science degree in pharmacy with specialization in pharmacy practice and a certificate of residency. During the summer months, the student spends full time working in the various activities associated with the hospital pharmacy. From September to May, the student spends half-time in his graduate work and half-time in the residency. The program begins July 1.

The program's pharmacy practice philosophy is to provide a broad scope of pharmacy services. Because of continuous emphasis on developing new pharmacy services, the resident has an opportunity to be involved in their implementation.

This opportunity to participate in the implementation of new programs is a unique and valuable experience for future practitioners. The student is also expected to participate in the teaching program of the School of Pharmacy. This provides an opportunity to develop teaching skills, a very important aspect of future pharmacy practice.

Medicinal Chemistry

This program leads to the Master of Science and Doctor of Philosophy degrees granted by the Graduate School of The University of North Carolina.

The field of medicinal chemistry is interdisciplinary. It applies and extends the concepts of chemistry, biochemistry, and pharmacology to the investigation of biomedical problems such as the relationship between molecular structure and biological activity. The graduate student has the opportunity for interdisciplinary cooperative research. The Medicinal Chemistry program benefits from relations with the Research Triangle Institute (especially the Chemistry and Life Sciences Laboratory), the Burroughs Wellcome Research Laboratories, and the Oak Ridge Associated Universities in Oak Ridge, Tennessee.

Facilities are available for graduate instruction and research in the building occupied by the School of Pharmacy. In Medicinal Chemistry, research programs are being conducted in synthetic and natural products with special implications to neurochemistry, enzymology, drug mechanisms, drug metabolism, lipid chemistry, radioactive labeling, cancer chemotherapy, and biomedical mechanisms.

Pharmaceutics

Graduate programs in Pharmaceutics lead to a Master of Science or Doctor of Philosophy degree awarded by the School of Graduate Studies. Students may elect a program concentrating in pharmacokinetics and biopharmaceutics, physical pharmacy, radiopharmacy, or industrial pharmacy. The graduate student in Pharmaceutics has a close association with all of the Pharmaceutics faculty and students, and frequent contact with those of other disciplines in the School. Many of the research projects involve cooperative effort with members of the Medicinal Chemistry faculty in the School of Pharmacy and with the clinical faculty of the Medical School and North Carolina Memorial Hospital.

Regardless of the area of specialization within the Pharmaceutics Division, the student has a broad course of study which develops a high level of knowledge in the basic sciences.

Excellent space and equipment for this program is available, most of it on one floor in Beard Hall, which is close to the medical school, hospital, and the health sciences library.

Pharmacy Administration

The graduate program in Pharmacy Administration offers a program leading to the Master of Science degree.

Pharmacy administration is one of the major disciplines taught in pharmacy schools throughout the United States. It expands the skills learned in the behavioral and administrative sciences that are related to pharmacy practice. The goal of the graduate program in Pharmacy Administration is to provide advanced training to individuals with a professional pharmacy degree that they might apply the principles and methods of the behavioral and administrative sciences to issues and problems of pharmacy. A person with a degree in Pharmacy Administration will maintain a continued interest in the problems vital to pharmacy and could contribute significantly to its better development.

Students entering the graduate program in Pharmacy Administration at The University of North Carolina at Chapel Hill have the opportunity to obtain exposure to highly rated, excellent schools such as Business, Public Health, Economics, Statistics, and Sociology. The student also has access to excellent computer facilities and services and can gain valuable experience by interacting with personnel at Burroughs Wellcome Company, a well-known drug company.

Inquiries and requests for application forms should be directed to the Director of Graduate Studies, School of Pharmacy, The University of North Carolina at Chapel Hill, Beard Hall — 200H, Chapel Hill, NC 27514.

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 Scholarships and Fellowships

Teaching Assistantships: Provide a basic stipend of \$4,800 for nine months service. Recipients of certain appointments may be entitled to pay tuition at a lower rate at the discretion of the Board of Trustees. Total teaching time required is 12 to 15 hours per week. Additional support is available for the summer months (\$1,200). Positions are also available for predoctoral students as research assistants on specific research grants. These furnish up to \$5,200 for the calendar year and possible waiver of out-of-state tuition.

Postdoctorate Fellowships: A number of postdoctorate fellowships in Medicinal Chemistry are available for holders of doctoral degrees in medicinal chemistry or in a related field of the pharmaceutical sciences—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. Stipends vary depending upon experience and are in the range of \$11,000-\$15,000 for twelve months with additional allowances for travel and University fees. Inquiries should be addressed to the School of Pharmacy, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27514.

Hospital Pharmacy Residency: Provides a stipend of \$15,000 for 24 months service and training. Total time required is 20 hours per week during academic year and 40 hours per week during the summer months.

The Minority Presence Grant Program for Doctoral Study, Law, and Veterinary Medicine provides stipends of up to \$4,000 for the academic year, with an option of \$500 in additional support for study in the summer session, for black residents of North Carolina who are selected to participate. Recipients must be full-time students pursuing doctoral degrees, law degrees, or degrees in veterinary medicine at East Carolina University, North Carolina State University at Raleigh, The University of North Carolina at Chapel Hill, and The University of North Carolina at Greensboro.

COURSES OF INSTRUCTION

MEDICINAL CHEMISTRY AND PHARMACOGNOSY

Courses for Undergraduates

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
65	INTRODUCTION TO MEDICINAL CHEMISTRY. Initiates the student into functional group classification schemes of drug molecules and draws correlations between chemical, physical, and pharmacodynamic characteristics of drugs. Staff.	Chem 61, 62 or equivalents	2	F	2
66	BIOCHEMISTRY. An introduction to the principles of biochemistry that gives the students a command of its concepts and language. The course also serves to give the student an appreciation of the biochemistry of the living organism as a basis for understanding drug action. Piantadosi; staff.	MedC 65, Chem 61, 62	4	Sp	4
68 69	MEDICINAL CHEMISTRY. The study of the chemical and physical properties of drugs and their relationship to biological activity. Cocolas, Loeffler, Ishaq, Piantadosi.	Chem 61, 62, MedC 65, MedC 66 or equivalents (Physiology 93, Phar 48)	3	F, Sp	3

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
Courses for Graduates and Advanced Undergraduates						
	CHEMISTRY OF NATURAL PRODUCTS. An introduction to the isolation, structure, determination, biosynthesis, and synthesis of natural products; emphasis on aspects relating to medicinal chemistry. Lee; staff.	Chem 61, 62, or equivalents	3	F or Sp	3	
	INTRODUCTION TO RESEARCH IN MEDICINAL CHEMISTRY. Staff.	Chem 61, 62, & permission of professor	1-3	F & Sp	1 or 3/ credit hr. more	
	BIOMEDICINAL CHEMISTRY. Principles of genetic regulation and disease which alter drug handling by the body. The effects of drugs on the regulatory mechanisms of cell metabolism, immunodefense, reproduction, and disease states. Hall; staff.	MedC 69, MedC 66, 3 or equivalents & permission of instructor	3	F or Sp	3	
	MECHANISM OF ADVERSE DRUG REACTIONS. Introduction to mechanisms of drug interactions using major drug groups as examples with some case histories. Hall; staff.	MedC 68, 69 Phar. 54, Phar. Prac. 77	3	F or Sp	3	
	BASIC CONCEPT OF CANCER AND ITS THERAPY. The etiology, pathogenesis, types, metabolic, and biochemical differences, detection, prevention, management therapy, adverse effects of cancer therapeutic agents are discussed. Hall.	MedC 66 or Biochem 100, Phco 55, 56, or 216, Phar. Prac. 76, 77, Physiol. 93	3	F or Sp	3	
	PRINCIPLES OF QUALITY CONTROL. An application of the analytical methods used on raw materials and finished pharmaceutical products with emphasis on good manufacturing practice and USP/NF requirements. Lee, Sadek.	Chem 62, Phar. 53 or equivalent	4	F	2	4
	PHARMACEUTICAL ANALYTICAL RESEARCH TECHNIQUES. Introduction to the analytical techniques used in the pharmaceutical sciences. Staff.	Permission of instructor	3-4	Sp	2	2-4

Number	Description	Prerequisites	Credit	Sem.	Hours Lec
168	MEDICINAL CHEMISTRY. Basic concepts of structure-activity-relationships of chemotherapeutic agents and drugs affecting metabolic disorders. A survey of the important drug classes, discussion of their mechanism of action and rationale of molecular modification of prototype drugs. Loeffler, Ishaq, Piantadosi.	Chem 62, Biochem 100	4	F	4
169	MEDICINAL CHEMISTRY. Basic concepts of structure-activity-relationships of pharmacodynamic agents. A study of various classes of drugs acting on the nervous system and cardiovascular system. Cocolas, Ishaq, Loeffler.	Chem 62, Physiol. 102	4	Sp	4

Courses for Graduates

241, 242	SPECIAL PROBLEMS IN MEDICINAL CHEMISTRY. Feasibility studies in a potential area. Staff.	Chem 61, 62 or equivalent Permission of instructor	1-5	F or Sp	
243	SELECTED TOPICS IN SYNTHETIC ORGANIC MEDICINAL CHEMISTRY. Discussions from current literature on the theory and techniques involved in the synthesis of biologically active compounds. Staff.	Chem 166 or equivalent	3	F or Sp	
244	SELECTED TOPICS IN NATURAL PRODUCTS CHEMISTRY. Discussions of important recent development in the chemistry of natural products of biomedical significance. Lee; staff.	Chem 166, 168	2	F or Sp	
270	ADVANCED MEDICINAL CHEMISTRY. Special topics in Medicinal Chemistry stressing physicochemical and biological principles of drug action, drug design, and drug receptor interactions. Staff.	MedC 168, 169 or equivalents	3	F	3
271	ADVANCED MEDICINAL CHEMISTRY. Current special topics in Medicinal Chemistry. Staff.	MedC 270	3	Sp	3
361, 362	SEMINAR. Staff.		1	F & Sp	

er	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	RESEARCH IN MEDICINAL CHEMISTRY. 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. Staff.		1-5	F & Sp	1	9
	MASTER'S THESIS. Staff.		3 or more	F or Sp		
	DOCTORAL DISSERTATION. Staff.		3-5	F or Sp		

PHARMACY PRACTICE

Courses for Undergraduates

DRUGS, THE PHARMACIST, AND THE HEALTH CARE SYSTEM. This course provides an introduction to the pharmacist's role in the health care system and initiates the student's professionalization process. Major issues in health care and drug use control are discussed. Pharmacists' responsibilities in various environments are explored. **Eckel; staff.**

1 F 1

INTRODUCTION TO CLINICAL PHARMACY PRACTICE. The student is expected to accomplish a number of objectives that will contribute to his professional expertise. The student will: 1) be able to administer a number of pharmaceutical dosage forms (injections, tablets and capsules, nasal and otic preparations, eye solutions and drops, etc.), 2) demonstrate that he or she can properly educate patients in drug use, 3) monitor the effect of specific drug therapies and distinguish these from disease progression (monitor vital signs), 4) be able to use the health team language in his or her professional work, and 5) integrate drug therapy and disease through the case study method. **Pittman.**

Phar 51, Phar 48
 (corequisites)

4 Sp 4

Number	Description	Prerequisites	Credit	Sem.	Hours Lec
76 77	PATHOPHYSIOLOGY AND THERAPEUTICS. Didactic courses in clinical pharmacy which emphasize the pathophysiology and treatment of those disease states most frequently encountered in pharmacy practice. Selection and dosing of drugs most frequently used in these disease states and the recognition of significant therapeutic and adverse drug effects are considered. Dennis, Pulliam; Staff.	Phar. Prac. 75, Phar. 48	4	F, Sp	4
78	DRUG INFORMATION PRACTICE. Concepts in drug information practice will be presented including types of drug information requests, drug information sources, and drug literature evaluation. Practical experience will be gained in a drug information center. Staff.	Phar. Prac. 75 Phar. 48	2	F, Sp	1
92L	ACADEMIC EXTERNSHIP PROGRAM. A course designed to complete the senior pharmacy students' undergraduate education by means of a structured, supervised program of participation in pharmacy practice. Students will gain experience in the application of basic and pharmaceutical sciences to direct patient care and to the solution of professional problems. This course is a full-semester, 15-week rotation away from the University campus and is approved for externship experience credit with the North Carolina Board of Pharmacy. Paoloni; staff.	Phar. Prac. 76, 77 All preceding course-work thru 5th year, including Pharmacy 72L.	12	F & Sp	
94	INSTITUTIONAL PHARMACY PRACTICE. Through seminars, lectures, case studies, and discussion, the student will gain an understanding of institutional pharmacy practice. Eckel, Hughes; Staff.		3	F, Sp	3

ourses for Graduates and Advanced Undergraduates

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	CLINICAL PHARMACY CLERKSHIP. Through assigned responsibility in Clinical Pharmacy Services students are exposed to and learn how to solve drug therapy problems. Staff.	Permission of Instructor	3-6	F, Sp	10-20	
	TOPICS IN ACUTE CARE PHARMACY PRACTICE. Focus is made upon choice and rationale for drug therapy, dosing guidelines, and monitoring parameters for assessment of drug efficacy and toxicity. Lectures and seminars concentrate on pathophysiology and drug management or problems commonly seen in acute care pharmacy practice settings. Dennis; staff.	Phar. Prac. 76 and 77. Permission of instructor. Limited enrollment.	2	F & Sp	1	2
	AMBULATORY CARE PHARMACY. Didactic instruction is provided on selected subjects in therapeutics relevant in ambulatory patient care. Proficiency in ambulatory clinical pharmacy practice is gained through discussion sessions and laboratory experiences in specific ambulatory patient care environments. Caiola; staff.	Phar. Prac. 76, 77	3	F, Sp	3	8 (5 weeks only)
	TOPICS IN HOSPITAL PHARMACY. Various topics of interest to the students and faculty are presented in seminar format. Topics presented are related to pharmacy management and/or clinical practice. Pittman; staff.	Pharm.D., Grad. standing or permission of instructor	1-3	F, Sp		
	CLINICAL THERAPEUTICS CONFERENCE. Course utilizes lectures, seminars, and case presentations to introduce the student to the knowledge system of clinical pharmacy. Didactic skills in laboratory methods, physical assessment, medical terminology, and utilization of the medical record are taught. Individual case presentations are utilized to emphasize oral and written communication skills. Staff.	Phar. Prac. 76, 77	3	F, Sp	3	

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
135, 136	INTRODUCTION TO RESEARCH IN PHARMACY PRACTICE. Students participate in ongoing faculty projects. Involvement varies from laboratory work, literature searches, to patient studies. Eckel; staff.	Permission of instructor	1-3	F, Sp	3-10
156	CLINICAL AND ANALYTICAL PRINCIPLES OF TOXICOLOGY. General concepts of drug toxicity including routes of exposure, safety and efficacy evaluation, antidotal treatment, common poisons, pesticides, vitamins, metal, etc. and analytical methods for measuring these agents in biological fluids.	Chem 41, 42; Phco 55, 56; PhPr 76, 77	3	Sp	3
176 177	ADVANCED CLINICAL PHARMACY. The course is designed to prepare the student to actively participate in the care of patients through interactions with patients, physicians, nurses, and other health care professionals. This will be accomplished through integration of the basic concepts of anatomy, biochemistry, microbiology, pathology, physiology, pharmacy, pharmacology, toxicology, and the drug treatment of disease. The student will learn the mechanisms causing certain disease processes, the symptomatology of the disease, laboratory alterations due to the disease, and the drug therapy for the disease. Emphasis will be given to therapeutic objectives, alternatives, and end-points pertinent to rational drug therapy. Hak, Powell; staff.	Phar. Prac. 76 and 77	3	F, Sp	
178 (183)	DRUG INFORMATION RETRIEVAL AND ANALYSIS. Concepts of drug information practice will be presented, including types of drug information sources and drug literature evaluation. If rational therapeutics updated with current literature are to be communicated in the clinical setting, the student must be able to evaluate the literature which	Pharm.D. student. PhPr 176, 177	2	Sp or Summer	1

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	established therapy as well as find and communicate information efficiently. Practical experience will be gained in a drug information center. Rosman; staff.					
	MONITORING DRUG THERAPY. Skills in the assessment of a patient's physical findings assist the pharmacist in drug therapy evaluation and monitoring. The student will be able to interview a patient to gain an accurate medication history, record findings in a medical record, and determine improvement or ill effect in a patient due to drug therapy. The role of the pharmacist in a triage role can be greatly enhanced by skill in physical assessment. Such skills can augment the ability to judge success and failure to drug therapy and provide the ability to evaluate complications of drug therapy. Moreover, it facilitates pharmacist interaction with physicians on the health care team, provides essential research skills and improves his ability to act as a paramedical health provider. Pittman; staff.	Phar. Prac. 75, 76, 77	3	Summer	2	2
	CLINICAL PHARMACY CLERKSHIP FOR PHARM.D. STUDENTS. In order to improve the student's ability to deliver pharmaceutical health care services, the clinical rotations course is developed to provide the necessary basic training. The course will give the student a patient-oriented drug therapy experience, and emphasize patient responsibility and effective communication with the other members of the health care team. The clinical rotations course will allow the student to apply his previous academic and didactic clinical coursework in actual patient-care situations. As the student's ability develops throughout the course, it would be expected that he would assume an increasing role in patient monitoring and in developing rational drug	All required Pharm.D. courses prior to second summer session.	9 (SS) 12 (F, Sp)	Summer, F, Sp		27-36

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
	therapy. Clinical rotations may include but are not limited to: Hypertension, Drug Information Center, Clinical Pharmacology, Pediatrics, Adult Medicine, AHEC, Ambulatory Care, Radiopharmacy. Raasch; staff.				

Courses for Graduates

193	RESEARCH METHODS IN PHARMACY PRACTICE. An introductory course on research methods focusing on the components of research in health service, epidemiologic and clinical aspects of pharmacy practice. Pulliam.	Grad. standing	3	Sp	3
201 202	ADVANCED CLINICAL PHARMACY. Discussions, workshops, and lectures to develop the student's skills and abilities to make therapeutic recommendations, utilize the drug literature, educate patients and health professionals, and record observations, plans and actions in a problem-oriented record. Staff.	Grad. standing	3	F & Sp	3
203	METABOLIC MANAGEMENT OF THE HOSPITALIZED PATIENT. Presents a comprehensive discussion of the fluid, electrolyte, acid-base and nutritional management of the hospitalized patient. Hak.	Pharm.D. or Grad. standing	2	Sp	2
210	THE DEVELOPMENT AND CLINICAL INVESTIGATIONS OF DRUGS. Includes preclinical drug safety evaluation, preclinical pharmacology, design of protocols for Phases I-IV, FDA guidelines for clinical study, preparation of study plan, statistics in clinical trials, data analyzing and FDA interactions with industry. Cato.	Pharm.D. or Grad. standing	2	F	2
249	HOSPITAL PHARMACY AND THE HOSPITAL ORGANIZATION. This course discusses the principles of health care delivery and their impact on the role of the hospital. The hospital as an organized unit for the		3	F	3

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	delivery of health care is discussed. How the pharmacist might contribute to the hospital's role is reviewed. Eckel.					
	PRINCIPLES OF PHARMACY PRACTICE. The modern roles of the pharmacist in the organized health care setting are explored. Progressive management techniques to support innovative services are discussed. The problems with implementing these programs are reviewed. Eckel.	Phar. Prac. 249	3	Sp		3
	SEMINAR. Pittman.		1	F, Sp		
	RESEARCH IN PHARMACY PRACTICE. Graduate course consisting of laboratory work, conferences with the major professor, and library investigations, relating to research. Staff.		1-5	F, Sp		
	MASTER'S THESIS. Staff.		3 or more	F or Sp		

PHARMACEUTICS

Courses for Undergraduates

	DISEASE STATES OF HUMANS. Basic pathological disease states as they relate to drug therapy, environmental toxicology, chemically induced diseases, teratogenic and carcinogenic agents. Hall, Miya, Raasch.	Zool 11 and 45	4	Sp		3	3
	PHARMACEUTICAL CALCULATIONS. Introduction to the types of calculations necessary in the modern practice of pharmacy. Wurster.		1	F		1	
	BASIC PHARMACEUTICS I. Theory and practice of physical-chemical principles as applied to pharmacy. Hadzija, Wurster.	Phar. 51 (coreq.)	3	F		3	
	BASIC PHARMACEUTICS I LAB. Hadzija.		1	F			3

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
53	BASIC PHARMACEUTICS II. Introduction to pharmaceutical dosage forms—their production, evaluation and quality assurance, including radiopharmaceuticals. Sadek, Olsen, Kowalsky.	Phar. 51	3	Sp	3
53L	BASIC PHARMACEUTICS II LAB. Sadek.		1	Sp	
54	PHARMACOKINETICS AND BIOPHARMACEUTICS. A basic study of the concentration-time course of drugs and their metabolites, methods of pharmacokinetic analysis, bioavailability, design of dosage regimens, influence of disease states on drug kinetics and pharmacokinetic drug interactions. Shrewsbury, Wargin.	Phyi 93 Phar. 53	3	F	3
55	DRUGS AND HEALTH. A course for nonpharmacy students. An introduction to the commonly used drugs in health care and the health care system. Wier; staff.		3	F & Sp	3
72L	DISPENSING LAB. Paoloni, Smith, R., Claytor		1	Sp	
88	PRESCRIPTION SPECIALTIES. Distinctive classes of pharmaceutical forms, important pharmacotherapeutic groups and individual drugs in relation to current professional practice. Smith, H.		3	F	3

Courses for Graduates and Advanced Undergraduates

103	STERILE PHARMACEUTICAL PRODUCTS. A study of the preparation and properties of parenteral drug forms along with required control procedures. Kowalsky, Olsen, Sadek.	Permission of instructor	3	Sp	2
104	TOXICOLOGY AND DRUG ABUSE. Introduction to drug and chemical adverse reactions including important aspects of toxicology and industrial hygiene. McBay.	MedC 66, MedC 69	3	F	3
105	ANALYTICAL TOXICOLOGY. McBay.	Permission of instructor	1	Sp	1

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	RADIOPHARMACEUTICALS. Principles and techniques of radioisotopes, the dispensing and control of radiopharmaceuticals. Kowalsky.	Phar. 54	3	F	3	
	RADIOPHARMACEUTICALS LABORATORY. Kowalsky.	Phar. 106	2	Sp	1	3
	PHARMACOKINETICS AND BIOPHARMACEUTICS. A basic study of the concentration-time course of drugs and the metabolites, methods of pharmacokinetic analysis, bioavailability, design of dosage regimens, influence of disease states on drug kinetics, and pharmacokinetic drug interactions. Shrewsbury, Wargin.	Phyi 93 Phar. 53 or equivalent	3	F	3	
	PHARMACEUTICAL TECHNOLOGY I. Study and manufacture of pharmaceuticals on a large and semicommercial scale. Olsen, Sadek, Smith, H.	Permission of instructor	3	F	2	3
	PHARMACEUTICAL TECHNOLOGY II. Continuation study of pharmaceutical manufacturing and the development of new products. Olsen, Sadek, Smith, H.	Permission of instructor	3	Sp	1	6
	INTRODUCTION TO RESEARCH IN PHARMACY. These two courses provide one or two semester assignments of special research problems in pharmacy. Staff.	Permission of instructor	1-3	F & Sp		
	CLINICAL PHARMACOKINETICS. Considerations on classical pharmacokinetic models as applied to the use of drugs in the clinical setting. Pharmacokinetic profiles of specific therapeutic agents are presented. Wargin, Powell, Shrewsbury.	Phar. 54 or equivalent	4	Sp	4	
	PRODUCT FORMULATION. Development and evaluation of pharmaceutical and cosmetic products including quality control. Olsen, Sadek.		5	F & Sp Alt. Years	2	6

Number	Description	Prerequisites	Credit	Sem.	Hours Lec
Courses for Graduates					
251 252 253 254	ADVANCED PHARMACEUTICAL TECHNOLOGY. Rules and laws governing drug production, dosage form design, scale up and optimization techniques, unit process in drug production and large scale operations, formulation and evaluation of drug products. The laboratory consists of the preparation of tablets and parenterals. Field trips are made to observe the large scale production of pharmaceuticals. Pertinent literature is reviewed. Olsen, Sadek.	Phar. 53	5	F, Sp Alt. Years	2
255 256	ADVANCED PHARMACOKINETICS. Advanced considerations on classical linear multicompartment modes. Emphasis on mathematical methods, assessment of absorption and disposition parameters from blood and urinary data, multiple dosing, and design of dosage regimens. Wargin, Shrewsbury.	Phar. 154 or equivalent	3	F, Sp Alt. Years	3
291 292	ADVANCED PHYSICAL PHARMACY. Intensive study of the application of fundamental physical and chemical principles to pharmaceutical systems. Special emphasis is placed on the study of drug decomposition and formulation of acceptable dosage forms. Hadzija, Wurster.		3	F, Sp Alt. Years	3
361 362	SEMINAR. Staff.		1	F & Sp	1
391 392	RESEARCH IN PHARMACY. Graduate course consisting of laboratory work, conferences with the major professor, and library investigations relating to research. Staff.		1-5		
393	MASTER'S THESIS. Staff.		3 or more	F or Sp	
394	DOCTORAL DISSERTATION. Staff.		3-5	F or Sp	

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
PHARMACY ADMINISTRATION						
Courses for Undergraduates						
	FINANCIAL AND PERSONNEL MANAGEMENT. Course acquaints students with the managerial principles of personnel and organizational management. In addition it presents the basic principles and techniques of financial management. Gagnon.		3	F		3
	PHARMACY PUBLIC RELATIONS. Exposure of students to the public and human relations aspects of pharmacy practice including individual communicative skills, techniques, and related topics. Clayton.		2	F, Sp		2
	COMMUNICATION AND PATIENT COUNSELING. Develops knowledge of the advantages and disadvantages of commonly employed communication and assertiveness responses and their relevance to interviewing and patient counseling in pharmacy practice. Builds skills in use of positive verbal and nonverbal responses through videotaped role playing. Examines human reactions to illness and impending death and how a pharmacist can be constructive in dealing with such feelings. Examines interpersonal interactions between pharmacists and other health disciplines (medicine, nursing, and social work). Discusses self-medication, physician prescribing, patient compliance, and drug utilization review. Jang.		3	Sp		3
	COMPUTER USE IN PHARMACY. Major trends in computer-based information handling and the pharmacist's relationships and responsibilities. Orientation will be provided in systems designed to handle dispensing operations, patient medication records, drug interactions, drug research and	Permission of instructor	2	F or Sp		2-Var. lab

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
	manufacture, and business applications in retail and wholesale pharmacy. Laboratory sessions provide on-site visits and lectures by users of such systems. Hartzema; staff.				
98	PHARMACY MANAGEMENT. Community pharmacy in the distribution of pharmaceutical products through study of personnel policies and training; store layout, design, location, and organization; merchandise operations and control; and expense control and analysis. Chambers.	PhAd 90	3	F & Sp	3
99	PHARMACEUTICAL LAW. Describes pharmacy professional practice, controlled substances and food and drug laws in depth. Gives introduction to business law, e.g., antitrust, contracts, and liability, and other laws affecting contemporary practice. Gagnon.		2	F or Sp	2

Courses for Graduates and Advanced Undergraduates

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
179	DRUGS AND HEALTH CARE. Provides the student with a broad understanding of issues facing the U.S. health care system, and a deeper understanding of the areas wherein pharmacy practice may contribute to improving health care. The course will be based upon reading, discussion and critiques of articles reflecting important, possibly divergent, points of view concerning health care and the major objective studies in currently significant or emerging pharmacy practice areas.	Phar. Prac. 21, Pharm.Ad. 96	3	F	3
180	PHARMACEUTICAL MARKETING AND ECONOMICS. A survey of the U.S. drug distribution system from pharmaceutical manufacturer to community pharmacy operation.	Grad. standing	3	F or Sp	3

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	Marketing strategies, management practices, pricing, research and development, promotion and advertising, and the structure of the drug industry are analyzed. Gagnon.					
	SELECTED TOPICS IN PHARMACY ADMINISTRATION. A reading and/or special projects course for both undergraduate and graduate students interested in pursuing additional work in the administrative and social sciences as they pertain to pharmacy practice.	PhAd 90 and PhAd 96	3	F or Sp		3-4

Courses for Graduates

	PHARMACEUTICAL SERVICES AND HEALTH CARE SYSTEMS. Pharmacy's current and future position in America's health care system is the underlying topic of this course. Special emphasis is placed on evaluative studies and pharmacy's role in third-party prescription plans, drug utilization review, governmental programs, and other health organizations. Jang.	Grad. standing	3	F or Sp		3
	PHARMACY MANAGEMENT. Assigned readings in financial and personnel management followed by discussion, lectures, oral and written reports, a research project, case studies, and visitations to drug companies and chain store organizations will form an important part of this course. Topics to be covered include pharmacy buying, merchandising, pricing, and others. Gagnon.	Grad. standing	3	F or Sp		3
	RESEARCH METHODS. The principles and theories of research in the evaluation of services delivered in pharmacy practices are presented. Included in this course are lectures on survey and questionnaire development and use of various attitudinal measurement devices, e.g., semantic differential, Likert scale, etc. Gagnon, Jang.	Grad. standing	3	F or Sp		3

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
361, 362	SEMINAR. Gagnon, Jang.	Grad. standing	1	F, Sp	
391, 392	RESEARCH IN PHARMACY ADMINISTRATION. Gagnon, Jang.	Grad. standing	1-5	F, Sp	
393	MASTER'S THESIS. Staff.	Grad. standing	3 or more	F, Sp	

THE BASIC SCIENCES

51	BACTERIOLOGY. The general principles and techniques of bacteriology and the relations of microorganisms to sanitation, agriculture, medicine, and industry. Twarog.	Chem. 11-21	4	Sp	3
93	PHYSIOLOGY. A general course in mammalian physiology with emphasis on the various organ systems and their interrelationships. Staff.	Zool 45 Chem 11-21	4	F	3
55, 56	PHARMACOLOGY. General principles as they apply to the major drug classes will be stressed. Staff.	All preceding courses in Chem. Zool, Bact, and Physiology	3	F & Sp	3

COURSES IN ACADEMIC DEPARTMENTS

Chemistry

11	GENERAL DESCRIPTIVE CHEMISTRY. Staff.	Corequisite, Chem 11L	3	F & Sp	3
11L	QUANTITATIVE CHEMISTRY LABORATORY. Staff.	Corequisite, Chem 11	1	F & Sp	3
21	GENERAL DESCRIPTIVE CHEMISTRY. Staff.	Chem 11	3	F & Sp	3
21L	QUANTITATIVE CHEMISTRY LABORATORY. 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.) Staff.	Chem 11, Corequisite 21	1	F & Sp	3

Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	<p>MODERN ANALYTICAL METHODS FOR SEPARATION AND CHARACTERIZATION. The basic 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. Buck, Bursey, Knight, Murray, Isenhour.</p>	Chem 21, Corequisite 41L	2	F & Sp	2	
	<p>LABORATORY IN SEPARATIONS AND ANALYTICAL CHARACTERIZATION OF ORGANIC AND BIOLOGICAL COMPOUNDS. 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 premedical and pre-dental students.) Analytical and organic Staff.</p>	Corequisite, Chem 41, Prerequisite or corequisite, Chem 61	2	F & Sp		4
	<p>MODERN ANALYTICAL METHODS FOR SEPARATION AND CHARACTERIZATION: SECOND 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; radio-chemical techniques. Buck, Bursey, Knight, Murray, Isenhour.</p>	Chem 41, Corequisite Chem 42L; Prerequisite or Corequisite Chem 62	2	F & Sp	2	
	<p>LABORATORY IN SEPARATIONS AND ANALYTICAL CHARACTERIZATION OF ORGANIC AND BIOLOGICAL COMPOUNDS. Applications and illustrations of modern analytical spectroscopic techniques; quantitative investigation of chemical properties through electrochemical, radio-chemical, and new titrimetric techniques</p>	Prerequisite or Corequisite, Chem 62; Corequisite, Chem 42	2	F & Sp		4

Number	Description	Prerequisites	Credit	Sem.	Hours/ Lec
	(some preparative experience is included with these studies). (This course serves as an organic chemistry laboratory for premedical and pre dental students.) Analytical and organic Staff.				
61	INTRODUCTION TO ORGANIC CHEMISTRY. 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. (Course for students on new Chemistry curriculum.) Hiskey, Little, McKee, Coke, Whitten, Rieke, Harrison, Kropp, Brookhart, Eliel, Evans.	Chem 21	2	F & Sp	2
62	INTRODUCTION TO ORGANIC CHEMISTRY. 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. (This course is for students on the new Chemistry curriculum.) Hiskey, Little, McKee, Coke, Whitten, Rieke, Harrison, Kropp, Brookhart, Eliel, Evans.	Chem 21	2	F & Sp	2

ECONOMICS

10	GENERAL ECONOMICS I. The organization and underlying principles of modern economic life. The production, exchange, distribution, and consumption of wealth and auxiliary economic problems. Staff.		3	F & Sp	3
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ENGLISH

1	ENGLISH COMPOSITION AND RHETORIC. Required of all stu-		3	F & Sp	3
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Number	Description	Prerequisites	Credit	Sem.	Hours/Week	
					Lec	Lab
	dents, except those qualifying by placement test for English 2. Staff.					
	ENGLISH COMPOSITION AND RHETORIC. Required of all students except those qualifying by placement test for English 21. Staff.		3	F & Sp		3
MATHEMATICS						
	CALCULUS WITH ANALYTIC GEOMETRY. An integrated treatment of analytic geometry and the differential and integral calculus of functions of one variable. Staff.		3	F & Sp		3
PHYSICAL EDUCATION						
	PHYSICAL EDUCATION. Required of freshman men and women. Two semesters. Staff.		1	F & Sp		4 hrs. week
ZOOLOGY						
	PRINCIPLES OF ZOOLOGY. 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. Staff.		4	F & Sp		3 3
	FUNDAMENTALS OF HUMAN ANATOMY AND PHYSIOLOGY. Basic structure and function in the human body and their explanation by principles of embryology, histology, heredity, and evolution. Staff.	Zool 11, 11L Corequisite, Zool 103L	3	F & Sp		3
	VERTEBRATE STRUCTURE AND EVOLUTION LABORATORY.	Corequisite Zool 45	1	F & Sp		3

SPECIAL SCHOOL OF PHARMACY PROGRAMS

Area Health Education Centers (AHEC) Education and Training

The North Carolina Area Health Education Centers (AHEC) Program exists as a partnership between four university health science centers and nine regional education and training centers. The School of Pharmacy recognizes this partnership in education and training. The curriculum contains practical experience coursework which places the student in the community or hospital pharmacy and/or in institutional patient care units in which students learn to apply knowledge of drugs in a safe and effective manner. In these settings, students have an opportunity to participate in and observe the expanding role of the pharmacist as an integral part of the health delivery team. The student contributes to the pharmacist's role by bringing his/her extensive knowledge of drugs to bear on clinical problems in a systematic and coordinated way. The AHEC Program offers an ideal arena for the educational advancement of all health science students in an inter- and intra-professional environment.

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 nonprofit, 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.

AWARDS

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 contributions to the instruction, research, and/or service function of the School of Pharmacy.

Syntex Practitioner-Instructor of the Year Award.—Made annually to a Practitioner-Instructor for outstanding contribution to the Pharmacy Externship Program. Nominations are made by Pharmacy Externs, and the recipient is selected by a special committee composed of students and faculty members. Sponsor: Syntex Laboratories.

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 three years of study.

The Buxton Williams Hunter Award.—(Established in 1937.) Offered annually in memory of the late Mr. Buxton Williams Hunter, of New Bern, to that graduating student who excels in campus citizenship and scholarship. The recipient is determined by the faculty.

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.

Upjohn Achievement Award.—Awarded to a graduating student for performance of outstanding services to the School of Pharmacy. This award is sponsored by the Upjohn Company. The recipient is determined by the faculty.

Bristol Award.—(Established in 1951.) An award consisting of a plaque and 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.

Merck Awards.—(Established in 1941.) Two to three 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.

The Lemmon Company Student Award.—(Established in 1980.) Awarded annually to the graduate who has earned the highest grade average during the three-year professional program. The award consists of a certificate and a monetary award. Sponsor: Lemmon Company.

The M.L. Jacobs Memorial Award.—(Established in 1957.) 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 to that student demonstrating the greatest excellence in medicinal chemistry.

Johnson & Johnson Award.—Awarded annually to a fourth year student for outstanding performance in Pharmacy Administration studies. The winner of this award is eligible to compete for a \$1500 prize in a Scholarship Essay Contest prior to the senior year. Sponsor: Johnson & Johnson.

Division of Pharmacy Practice Achievement Award.—An award to a graduate who has demonstrated a high degree of professional motivation and concern about the role of the pharmacist in the delivery of health care.

Smith Kline & French Award.—An award for academic excellence with demonstrated ability to apply this expertise to clinical practice. Sponsor: Smith Kline & French Laboratories.

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.

Fraternity Scholastic Award.—(Established in 1964.) A permanent plaque is engraved each year with the name of 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 School of Pharmacy Student Body Award.—(Established in 1948.) A mortar and pestle 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 extracurricular activities, and promise of future distinction in the profession. The winner of the

trophy is determined by a special committee composed of representatives from each recognized student organization in the School of Pharmacy.

Kappa Epsilon Award.—(Established in 1947.) The Lambda Chapter of Kappa Epsilon awards annually a prize to a fourth- or fifth-year woman student in the School of Pharmacy who has demonstrated highest qualities of leadership, character, service, and scholarship. The recipient is selected by a special committee of students and faculty members from a slate of nominees determined by Lambda Chapter of Kappa Epsilon.

Best Instructor Award.—Awarded to that member of the School of Pharmacy Faculty selected by the Senior Class as representing the highest qualities of instructional ability. This award is sponsored by the Pharmacy Senate.

McKesson & Robbins Award.—Presented on behalf of McKesson & Robbins, Inc., to the President of the Student Chapter, American Pharmaceutical Association.

APhA Certificate.—Presented to a graduating student on behalf of the American Pharmaceutical Association for outstanding services to the Student Chapter at The University of North Carolina at Chapel Hill.

The Fannie Jackson Andrews Award.—Funds have been made available through the North Carolina Pharmaceutical Research Foundation to establish monetary awards each year for one or more students who have made outstanding positive contributions to the profession of pharmacy. The selection of recipients of the awards is made by a special committee which includes representatives of the faculty and the student body of the School of Pharmacy and the North Carolina Pharmaceutical Research Foundation. The awards are announced late in the Spring Semester; the monetary awards are presented at the beginning of the ensuing Fall Semester. If, in the opinion of the selection committee, there is no student deserving of the award in a given year, no award will be made.

STUDENT ORGANIZATIONS

The Xi Chapter of Rho Chi.—(Established in 1929.) Charters 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.

Other recognized student organizations are: STUDENT NATIONAL PHARMACEUTICAL ASSOCIATION, STUDENT BODY OF THE SCHOOL OF PHARMACY, PHARMACY SENATE, PHI LAMBDA SIGMA, CAROLINA INDUSTRIAL PHARMACY SOCIETY, KAPPA EPSILON PHARMACEUTICAL FRATERNITY, KAPPA PSI PHARMACEUTICAL FRATERNITY, PHI DELTA CHI PHARMACEUTICAL FRATERNITY.







