FEBRUARY 20, 1939

NUMBER 339

THE UNIVERSITY OF NORTH CAROLINA RECORD

THE ONE HUNDRED AND FORTY - FIFTH SESSION



CATALOGUE OF THE SCHOOL OF MEDICINE 1938-1939

Announcements for the Session 1939-1940

THE UNIVERSITY OF NORTH CAROLINA PRESS
ISSUED 12 TIMES A YEAR AS FOLLOWS: 4 NUMBERS IN FEBRUARY, 3 NUMBERS IN MARCH, 3 NUMBERS IN APRIL, 1 NUMBER EACH IN JUNE AND OCTOBER.

ENTERED AS SECOND-CLASS MATTER AT THE POSTOFFICE AT

CHAPEL HILL, N. C.

UNDER THE ACT OF AUGUST 24, 1912

CATALOGUE OF EVENTS

SESSION, 1939-1940

1939

2000			
June 4-6	Sunday through Tuesday. Commencement Exercises.		
June 8-July 18	Summer Session, First Term.		
July 19-August 26	Summer Session, Second Term.		
September 14	Thursday. Registration for the fall quarter.		
September 15	Friday. Class work for the fall quarter begins.		
October 12	Thursday. University Day.		
November 29	Wednesday. Thanksgiving Recess begins (1:00 p.m.)		
December 4	Monday. Thanksgiving Recess ends (8:30 a.m.).		
December 7-16	Thursday to 1 p.m. Saturday of following week. Registration for winter quarter.		
December 12-16	Tuesday through Saturday (1:00 p.m.) Examinations for the fall quarter.		
December 16			
	CANA A I MEN		

January 1, 1940

(afternoon)- Christmas Recess.

1940

January 3	Wednesday. Class work for the winter quarter begins.
March 8-16	Friday to 1:00 p.m. Saturday of following week. Registration for the spring quarter.
March 12-16	Tuesday through Saturday (1:00 p.m.). Examinations for the winter quarter.
March 16-24	Sunday through Sunday. Spring Recess.
March 25	Monday. Class work for the spring quarter begins.

June 3-7 Monday through Friday. Examinations for the spring quarter.

June 9-11 Sunday through Tuesday. Commencement Exercises.

INFORMATION PERTAINING TO THE GENERAL UNIVERSITY

The School of Medicine is one of the divisions of the University of North Carolina, located at Chapel Hill. It is governed by the same administration, the same board of trustees, the same laws

and regulations as the rest of the university.

The pre-medical record of each applicant for admission must be passed upon and approved by the Dean of Admissions of the University before the application can be taken under consideration by the Dean and the Committee on Admissions of the Medical School.

STUDENT GOVERNMENT

The student body of the University is self-governing. The functions of this government are both disciplinary and constructive. These functions are exercised by the Student Council which is elected by the student body. The Medical School is represented on this council by a member of the second-year class. Student government, in so far as it is disciplinary, is based upon the honor principle. No code of rules is laid down to direct a student what to do and what not to do. The only standards are those of morality and gentlemanly conduct, and obedience to the laws of North Carolina. The Student Council has power to suspend or dismiss a student from the university, but the final and supreme power is in the general university faculty, delegated to it by the Board of Trustees.

WITHDRAWALS

Formal withdrawal, which is prerequisite to honorable dismissal or reentrance to this institution, must be approved by the student's Dean to be valid. Such a withdrawal will be approved only after full investigation of the circumstances and after the lapse of twenty-four hours from the time the first application is filed with the Dean. The withdrawal form after approval by the Dean must be filed promptly with the Recorder in room 207, the South Building.

If a student withdraws after the mid-term and is reported as below passing in two or more courses, that quarter will be counted as a quarter in residence in all computations of his requirements for readmission. If a student withdraws before mid-term, it will be left to the discretion of the Dean as to whether or not that quarter is to be counted as a quarter in residence. The Dean's verdict will be indicated specifically on the form used for withdrawal.

HEALTH AND RECREATION

The health of the student community is cared for by the maintenance of a properly appointed infirmary with a staff of well trained physicians and nurses. The university gymnasium and five large athletic fields provide ample facilities for exercise and recreation, all under the supervision and direction of a well organized Department of Physical Education.

LIBRARIES

In addition to the specialized departmental and school libraries the general university library, containing over three hundred and sixty thousand volumes, offers its opportunities to members of all divisions of the institution.

LOCATION

Chapel Hill is thirty miles west of Raleigh, the capital of the State, in the beautiful Piedmont section of hills and forests, and is entered from every point by paved roads. Its environment of natural beauty and simple culture, of age and traditions, is impressive. The University of North Carolina, the first state university to open its doors in America and a member of the Association of American Universities, is recognized as a leader among educational institutions.

THE SCHOOL OF MEDICINE

FRANK PORTER GRAHAM, M.A., LL.D., D.C.L., D.Litt., President ROBERT BURTON HOUSE, A.M., Dean of Administration WILLIAM DEBERNIERE MACNIDER, M.D., Sc.D., LL.D., Dean WALTER REEGE BERRYHILL, A.B., M.D., Assistant Dean MILTON JOSEPH ROSENAU, A.M., M.D., Director, Division of Public Health

*THE ADMINISTRATIVE BOARD

ISAAC HALL MANNING, M.D.
CHARLES STAPLES MANGUM, A.B, M.D.
WALTER REECE BERRYHILL, A.B., M.D.
JAMES BELL BULLITT, A.M., M.D.
DANIEL ALLAN MACPHERSON, ScM., Ph.D.
MILTON JOSEPH ROSENAU, A.M., M.D.

WESLEY CRITZ GEORGE, Ph.D. ENGLISH BAGBY, Ph.D. ROBERT ERVIN COKER, Ph.D. HERMAN GLENN BAITY, Sc.D. EDWARD MACK, JR., Ph.D.

STANDING FACULTY COMMITTEES

Committee on Admission and Promotion:

WALTER REECE BERRYHILL, A.B., M.D., Chairman JAMES BELL BULLITT, A.M., M.D. H. WARD FERRILL, A.B., Ph.D. GRANT LESTER DONNELLY, A.B. in Educ., M.D. JAMES CLARENCE ANDREWS, B.S., Ph.D.

Library Committee:

WESLEY CRITZ GEORGE, Ph.D., Chairman H. WARD FERRILL, A.B., Ph.D. WALTER REECE BERRYHILL, A.B., M.D.

SPECIAL STAFF

CHARLES STAPLES MANGUM, A.B., M.D., Professor of Anatomy
ISAAC HALL MANNING, M.D., Professor of Physiology
WILLIAM DEBERNIERE MACNIDER, M.D., Sc.D., LL.D., Kenan Research Professor
of Pharmacology

James Bell Bullitt, A.M., M.D., Professor of Pathology
Wesley Critz George, Ph.D., Professor of Histology and Embryology
Daniel Allan MacPherson, Sc.M., Ph.D., Professor of Bacteriology
Milton Joseph Rosenau, A.M., M.D., Director, Division of Public Health
James Clarence Andrews, B.S., Ph.D., Professor of Biological Chemistry
Grant Lester Donnelly, A.B. in Educ., M.D., Associate Professor of Phar-

Malter Reece Berryhill, A.B., M.D., Associate Professor of Medicine H. Ward Ferrill, A.B., Ph.D., Associate Professor of Physiology Russell Lowell Holman, A.B., M.D., Assistant Professor of Pathology Granvil C. Kyker, B.S., Ph.D., Assistant Professor of Biochemistry Robert Alexander Ross, M.D., Lecturer in Obstetrics Arthur Hill London, M.D., Lecturer in Pediatrics Thomas Henderson Byrnes, B.S., M.D., Instructor in Pathology Edward McGowan Hedgeth, A.B., M.D., Instructor in Principles of Surgery Frank Norman Low, Ph.D., Instructor in Anatomy Edward Carl Pliske, Ph.D., Instructor in Anatomy William Gardner Morgan, A.B., M.D., Instructor in Physical Diagnosis Robert Edward Stone, A.B., M.D., Instructor in Physical Diagnosis Bernard John Schaaf, Technical Assistant in Bacteriology Willard C. Hewitt, A.B., Student Assistant in Bacteriology Albert B. Rolnick, A.B., M.S., Student Assistant in Biochemistry Arnold Breckenridge, A.B., Technical Assistant in Pharmacology Miss Mittie Pickard, Technician in Pathology

MISS NELL QUINBY HENRY, A.B., M.A., Technician in Anatomy Woodrow Wilson Jervis, Technical Assistant in Physiology

^{*} The Dean of Administration, the Registrar, and the Dean of Students are ex officio members of each Administrative Board.

GENERAL STATEMENT

The School of Medicine was established in 1879 under the direction of Dr. Thomas W. Harris. A course in theoretical and practical medicine was offered under the preceptorial system, but the plan was found impracticable and was abandoned in 1886. In 1890, a more orderly and logical arrangement of the subjects in the medical course having developed, it became possible for an institution without clinical facilities to offer instruction in the pre-clinical subjects, and the school was reopened with Dr. Richard H. Whitehead as Dean and Professor of Anatomy. Under his guidance it soon won recognition for thoroughness of instruction and excellence in scholarship and has since continued without interruption to its growth. At first the course covered only one year, but in 1896, the medical course having been extended in the better class of schools to four years, a two-year course was inaugurated. In 1900 the School of Medicine was incorporated as an integral part of the University and was reorganized to meet the requirements of the first two years of the full four-year course leading to the degree of Doctor of Medicine. In 1902 it was expanded into a four-year school, and the clinical subjects of the third and fourth years were offered in Raleigh under the direction of Dr. Hubert A. Royster as Dean. few years of successful operation, this plan had to be abandoned for lack of financial support, and the clinical subjects were dropped. In 1908 the school was admitted to membership in the Association of American Medical Colleges, and is ranked in the class "A" group by the American Medical Association.

The curriculum is arranged to cover all of the laboratory or pre-clinical subjects of the four-year course in medicine and includes, in the last part of the second year, introductory clinical courses which serve to lessen the abruptness of the change from the laboratory to the hospital.

Students who have successfully completed the two-year course are transferred into the third year of American medical colleges of the highest rank from which they receive the degree of doctor of medicine. Sixty percent of those who have attended the school have returned to North Carolina to practice medicine. Approximately twenty-five percent of the physicians now in active practice in North Carolina received the first two years of their medical training here.

The School of Medicine is located on the University campus in close association with all other University activities. The classes are limited to thirty-six students and, since this is a state institution, preferential consideration is given applicants for admission who are citizens of North Carolina.

THE NEW MEDICAL BUILDING AT THE UNIVERSITY OF NORTH CAROLINA

The new building of the University of North Carolina School of Medicine and the Division of Public Health is of southern colonial architecture. It is five stories high, 260 feet long, with two wings each 78 feet long. The building and the wings are approximately 40 feet deep and contain a total of approximately

one million cubic feet of space.

The entire ground floor has been given over to the Division of Public Health. The three floors immediately above the ground floor are equally divided among the departments of pathology, bacteriology, pharmacology, physiology, anatomy, and biological chemistry. The fifth floor is air-conditioned and will be devoted largely to housing both large and small laboratory animals. The building contains a large reading room and space for a library of 50,000 volumes. There are locker rooms and a lounge for the first-year students and one for the second-year students. It is expected that the building will be ready for occupancy by the first of September.

The students of the Medical School are regularly enrolled in the University, enjoy all the privileges of University students, and are amenable to all general University regulations and to the

special regulations of the Medical School.

REQUIREMENTS FOR ADMISSION

The minimal requirements for admission to the medical curriculum are three years of college work, which must include a minimum of twelve semester hours in chemistry (including four semester hours of organic chemistry), eight semester hours in biology (at least 4 semester hours being in zoology), eight semester hours in physics (which must have required trigonometry as prerequisite), six semester hours in English, and six semester hours in a modern foreign language beyond the amount required in the language chosen for admission to the University. An elementary course in volumetric analysis is desirable. In case of an exceptionally well qualified applicant the prerequisite of work in trigonometry for physics may be waived. No student will be admitted with less than three years of accredited collegiate work, or with a condition on any of the required subjects in All admissions are decided by the Dean of the School of Medicine and a special committee on admissions to the school after approval of credentials by the Dean of Admissions. maximal number admitted to the first year class is thirty-six. The Dean and special committee reserve the right to select from the entire list of applicants those who in their judgment are best qualified for the study of medicine.

Admission to Advanced Standing

Candidates for admission to the second year of the medical curriculum must present certificates from an accredited medical school stating that they have had the required fifteen units, at least three years of college work as indicated above, and have completed the subjects of the first year of the medical course as outlined.

BACHELOR OF SCIENCE IN MEDICINE

The University recommends to each applicant that he prepare himself as fully as his age and resources permit. If possible he should first secure a bachelor's degree, either A.B. or S.B., before beginning his professional study. If this is impracticable, he may secure excellent preparation by completing the academic curriculum, outlined below, leading to the degree of Bachelor of Science in Medicine. The degree is conferred upon the completion of the first year of work offered in this school.

NOTE: Students pursuing the academic subjects listed below are hereby notified that the completion of these courses does not necessarily mean admission to our School of Medicine. From the rather long list of applicants are chosen thirty-six who are deemed the most promising material for admission to our School. No arrangement exists for granting the degree of S.B. in Medicine for work in any medical school other than ours. Therefore, in order to secure our S.B. in Medicine, the student must complete the first year of work offered in our School of Medicine and in no other such school. To be eligible for the degree of S.B. in Medicine, at least the last year of pre-medical work must have been done in this institution.

ACADEMIC CURRICULUM FOR S.B. IN MEDICINE Freshman Year

Chemistry 1-2-3 English 1-2-3 Mathematics 1-2-3 Social Science 1-2-3 *Foreign Language 11-12-13 (French or German) Hygiene 1-2-3 Phys. Educ. 1-2-3

Sophomore Year

English 21-22-23 *Foreign Language 21-22-23 Botany 41, Zoology 41, 42 or Botany 41, Physics 24-25 Chemistry 31, 42 Elective-one course of 5 or 6 hours

Junior Year

Psychology 21-22-23 Chemistry 61, 62, 63 **Zoology 41, 42 or **Physics 24-25

Elective—two courses of 5 or 6 hours.

^{*} The intermediate courses (11-12-13) in French or German or both are to be taken pro-*The intermediate courses (11-12-13) in French or German or both are to be taken provided the student shows evidence of adequate preparation; otherwise he takes the elementary courses (1-2-3) in the language or languages. The elementary courses, meeting six hours a week, are designed to cover both the elementary and intermediate work. In case both French and German are elected, the requirement is met in three quarters in each language (courses 1-2-3 or 11-12-13); in case only one language is taken, courses 21-22-23 also must be completed, six quarters in all being required.

**The combination chosen here is to be the one not chosen (with Botany 41) in the Sophomore year.

EXPENSES

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

Tuition and Other Fees for Each Quarter

Each student whose bona fide residence has not been established in North Carolina for at least the six months immediately prior to his first registration in the University must pay an extra fee of \$33.34 for each fall, winter, or spring quarter he spends in residence. The residence of a minor is that of his parents or guardian. The residence of an adult remains with his parents or guardian unless he shall have independently set up his own.

Bona fide residence means that the student is not in North Carolina primarily to attend the University and that his status as a resident has not been set up merely as a technical bar to the extra charge. Mere ownership of property or payment of taxes apart from residence does not qualify one as a resident nor may a student qualify by living in North Carolina the six months immediately prior to his first registration, unless he continues so to live during the whole period of his stay at the University.

*Tuition and Matriculation\$ Student Publications Laundry Deposit	$2.30 \\ 8.50$
Total for each quarter\$	$\frac{1.00}{100.14}$

Each student must provide himself with his own microscope, preferably a new one, of standard manufacture, which must be complete with 16mm, 4mm, and oil immersion objectives and with 5x and 10x eyepieces. If a student desires to use an older type of microscope it must be approved by the Medical School. Students desiring to purchase new microscopes may purchase them from the University at current retail prices, which now range from \$120.00 up. In case cash payment cannot be made at time of purchase, information concerning installment payments may be secured by writing the Supervisor of Credits and Collections, Box 150, Chapel Hill.

A deposit of \$10 is required at the first registration of the year to cover the cost of materials purchased from the medical store room. Any balance of this deposit left at the end of the college year will be refunded.

^{*}This fee includes fee for physical education, the library fee, the fee for infirmary service, the fee for debates, the fee for registration costs, and membership fee in the Athletic Association.

SPECIAL NOTICE

An applicant notified of his acceptance must deposit with the Cashier of the University, not later than May 1, the sum of \$50.00; otherwise the acceptance will be withdrawn. If the applicant presents himself for registration the deposit will be accredited to his account; otherwise the deposit will be forfeited.

SCHOLARSHIPS

THE WOOD SCHOLARSHIP. (Established in 1895.) Mrs. Mary Sprunt Wood, of Wilmington, has founded a scholarship in mem-

ory of her husband, the late Dr. Thomas Fanning Wood.

THE MRS. AUGUSTUS H. JONES SCHOLARSHIP was created in 1930 by Mrs. James H. Parker, of New York City. The recipient of this scholarship is to be designated by Mrs. James H. Parker during her lifetime and thereafter upon the recommendation of the New York Chapter of the United Daughters of the Confederacy. Failing this recommendation from either source, appointment is to be made by the President of the University, preference being given first to relations of the late Dr. James H. Parker, of New York, and second to relations of the donor.

BOARD

The University Dining Hall Cafeteria is under expert management. Food of excellent quality and variety is served at such prices as will only meet necessary expenses.

Board without room can be obtained in the town from \$22.50

to \$35.00 a month.

DORMITORY ACCOMMODATIONS FOR MEN

Accommodations for approximately two thousand students are available in the University dormitories.

All rooms in the dormitories are completely furnished. Students will, however, provide their own pillows, bed linen (for

single beds), blankets, and towels.

Room rent ranges from \$5.50 to \$15.00 a month for each occupant, the price depending upon the location of the room. This charge includes light, heat and service. Rooms are leased for the scholastic year. A new dormitory within one block of the new medical building, designed primarily for medical and graduate students in chemistry and biology, will be ready for occupancy in September, 1939.

All students are expected to present themselves for registration on Thursday, September 14, 1939, between the hours of 9 a.m. and 5 p.m., at the place announced in the plan for registration.

Bills for the fall quarter are payable at the time of registration. Bills for the winter and spring quarters are payable at the Business Office on the first class day of the quarter. Failure to pay or to make proper arrangements for payment results in the assessment of an extra fee of \$5.00.

DELAYED REGISTRATION

The penalty for delayed registration for any quarter is one month of strict attendance probation for each day of delay. Any student registering later than the time appointed for his registration must pay five dollars (\$5.00) as an additional fee for delayed registration. No appeal from the imposition of either attendance probation or the late registration charge of five dollars will be granted, unless the delay is due to circumstances clearly beyond the student's control. Such appeals must be made in writing to the Dean of Administration, must show clearly good and sufficient justification for the delay in registering, and must bear the approval of the Dean of the division of the University in which the appellant is enrolled.

THE MEDICAL CURRICULUM

The medical curriculum covers two years of thirty-four weeks each, divided into three periods, or quarters, of approximately equal length. It is organized into six departments: Anatomy, Bacteriology, Biological Chemistry, Pathology, Pharmacology, Physiology, with additional courses in Physical Diagnosis, Principles of Surgery and Obstetrics, and an affiliated Division of Public Health.

The number of quarter hours of instruction in the various subjects in each year are shown below by quarters.

First Year			
Subject	Fall	Winter	Spring
Anatomy (gross) 107ab		6	
Anatomy (Histology) 102ab	10		
Anatomy (Embryology) 103			6
Anatomy (Neuro) 101			6
Chemistry 102		6	
Chemistry 103		-	6
Physiology 141Physiology 142		5	1.0
Filysiology 142			12
Second Year			
Subject	Fall	Winter	Spring
Bacteriology 101	8		
Bacteriology 104 (Immunology)		5	
Bacteriology 117 (Hygiene)			3
Pharmacology ab	7 1/2	7 1/2	
Pathology 161abc	6	6	6
Pathology (51)			4
Physical Diagnosis		4	6
Surgery			3
Obstetrics			1

EXAMINATIONS

The regular examinations in the School of Medicine are held at the end of each quarter. First year students will be allowed special examinations for the removal of conditions at the end of the third quarter, or during the week preceding the beginning of the work of the second year.

GRADES AND PROMOTIONS

The following system of letter grades, with numerical equivalents, is used by the School of Medicine:

Letter	%	Letter	%
A+	100	C+	80
$_{ m A}^{ m A+}$	95	C '	75
$_{ m B}^{ m B+}$	90	D	70
в	85	E (condition)	65
		F (failure)	60 and below

At the end of the first year the standing of each student is determined by means of a weighted average arrived at as follows:

The numerical grade for each course shall be multiplied by the number of quarter hours assigned to that course. The sum of these products for all courses taken during the first year shall be divided by the total number of quarter hours in the first year curriculum. The result shall represent the student's average for the year.

An average lower than 73 for the first year shall debar a student from further registration in the School of Medicine.

Failure or condition (E or F) in any two courses within the first or second year's curriculum shall debar a student from further registration in the School of Medicine. Should grades of either E or F be received in any two courses completed before the end of the academic year, immediate withdrawal from the school will be required.

The following regulations apply to students receiving a grade of either E (65) or F (60 or below) in some one course, but whose weighted average for the year permits their provisional continuance in the school:

A grade of E (65) in any one course permits and requires a re-examination. If this is passed with a grade of D (70) or more, the course grade is raised to D (70). If a grade of 65 or lower is received on the re-examination the course grade is changed to F and the regulation for failure applies.

A grade of F (60 or lower) requires repetition of the course in some approved school followed (if the course is passed) by a reexamination given by the department in which the failure occurred. If the re-examination is passed with a grade of 70 or more, a course grade corresponding to the student's standing on

the re-examination is recorded. If a grade lower than 70 is received on the re-examination, the final course grade is changed to F and the student is debarred from further registration in the School of Medicine.

No student will be promoted to the second year with any remaining failure or condition and all failures or conditions must be made up within one year of the time they occur.

In case of courses satisfactorily passed by a student, he shall be notified only that the course is passed but not given the exact grade recorded. Students are informed of their exact course grades only, when grades of D, E or F have been assigned or when their weighted average drops below 73.

If the student is a candidate for S.B. in Medicine and makes a grade of E in the spring quarter of the first year he is not allowed to take a special examination for the removal of the E earlier than thirty days after the last examination in that period of examinations.

If a second-year student makes a grade of E on any subject he may be given another examination on that subject at any subsequent examination period or during the following month of July.

The faculty further reserves the right to drop a student from the school at the end of any quarter, providing he does not in their judgment show sufficient promise to justify their allowing him to continue the study of medicine,—irrespective of whether he may or may not have had a passing grade on each individual course.

COURSES OF INSTRUCTION

Certain courses in the curriculum of the School of Medicine are approved by the Graduate School as majors or minors for the master's and doctor's degrees. For details see Catalogue of the Graduate School.

For statement of hours of instruction in the various subjects see p. 11.

DEPARTMENT OF ANATOMY

CHARLES STAPLES MANGUM, A.B., M.D., Professor of Anatomy.
WESLEY CRITZ GEORGE, Ph.D., Professor of Histology and Embryology.
FRANK NORMAN LOW, Ph.D., Instructor in Anatomy.
EDWARD CARL PLISKE, A.B., M.A., Ph.D., Instructor in Anatomy.
MISS NELL HENRY, A.M., Technician.

The courses include gross and microscopic anatomy, embryology, the topography of the body, the application and relation of anatomy to medicine and surgery, and the anatomy of the central nervous system and the organs of special sense. 101. CENTRAL NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE (6).

A special laboratory study of the gross and microscopic anatomy of the cord and brain. Each student is provided with prepared dissections of the human brain and a series of sections through the cord and the brain stem. A human brain is then given to each group of six students and by them dissected in order to correlate and systematize the principal points of emphasis. A practical examination tests the student's ability to locate the various tracts and nuclei. Three lecture and six laboratory hours a week, winter quarter. Professor Mangum; Dr. Low, Dr. Pliske.

102ab. GENERAL HISTOLOGY AND ORGANOLOGY (10).

This course includes a study of the structure and activities of the animal cell, the histology and development of the tissues, and the microscopic structure of all the organs of the body except the central nervous system, which is studied in course 101. The work is based principally upon stained sections supplemented by demonstrations of gross organs from the cadaver and of preparations of living material. Considerable experience is given in the identification of sections from the various tissues and organs. Five lecture and ten laboratory hours a week, fall quarter. Professor George; Dr. Pliske.

103. EMBRYOLOGY (6).

This course covers: (a) The fundamental facts of early development of the vertebrate body, with laboratory study based principally upon whole mounts and serial sections of chick embryos; and (b) The development of body form, organ systems, some individual organs, and the fetal membranes of mammals. Students are supplied with serial sections of pig embryos. Serial sections of human fetuses from 2½ mm. to 27 mm. and a synoptic collection of whole human fetuses representing approximately every week of the gestation period are available for demonstration and study. Three lecture and six laboratory hours a week, spring quarter. \$5.00 laboratory fee for non-medical students. Professor George; Dr. Pliske.

104. CYTOLOGY AND HISTOGENESIS (6). Prerequisite, Anatomy 102, Anatomy 103.

Those who have completed course 102 or its equivalent will be offered an opportunity to pursue further work in cytology and histogenesis. Arrangements for this course may be made with the instructor. Three lecture and six laboratory hours a week, spring quarter. \$5.00 laboratory fee for non-medical students. Professor George.

106. ADVANCED NEURO-ANATOMY (9 $\mbox{1/2}$). Prerequisite, Anatomy 101 or equivalent.

The brain stem, basal ganglia, and the principal neuron pathways are modelled in plastic clay. Microscopic sections, photographs, and dissections of human brains are used as guides. Special emphasis is placed upon the function of the central nervous system. \$5.00 laboratory fee for non-medical students. Offered in alternate years. Not offered in 1938. Dr. Low.

107ab. GROSS ANATOMY (20).

The student dissects the body under the supervision of an instructor. Laboratory talks, demonstrations, and conferences take the place of formal lectures. Practical examinations are held on the cadaver. The subject matter is presented from the standpoint of development and function and attention is paid to surface and regional anatomy. Each student is provided with a complete set of disarticulated bones. Six lecture and sixteen laboratory hours a week, fall quarter; three lecture and six laboratory hours a week, winter quarter. \$15.00 laboratory fee for non-medical students. Professor Mangum; Dr. Low.

108. APPLIED ANATOMY. Elective for second year medical students (2).

Laboratory talks are supplemented by demonstrations on the cadaver. Actual application of the methods of applied anatomy is accomplished by selected exercises and dissections involving analysis of anatomical problems. Two hours a week, spring quarter. Dr. Low.

DEPARTMENT OF BACTERIOLOGY

Daniel Allan MacPherson, Sc.M., Ph.D., Professor of Bacteriology. Harold William Brown, A.B., M.S., Sc.D., M.D., Dr.P.H., Professor of Public Health

MEYER H. ROLNICK, A.B., M.S., Student Assistant. Bernard John Schaaf, Senior Technician.

101. PATHOGENIC BACTERIOLOGY (8). Prerequisite, Chemistry 1-2-3; one course in Botany or Zoology, and Bacteriology 51 or equivalents. Required of medical students. *Elective.

The early weeks of the course are devoted to a thorough grounding in the fundamental principles and techniques of bacteriology. The major portion of the course is devoted to the detailed study of the pathogens. Practical diagnosis of disease is stressed, and the student examines known and unknown specimens of blood, sputa, feces, pus, water, and milk. Animal inoculations demonstrate the process of infection, and the differentiation of certain organisms. Lectures and quizzes cover all the important diseases. Three lecture and nine laboratory hours a week, fall quarter. Laboratory fee for non-medical students, \$6.00. Professor MacPherson; Mr. Rolnick.

104. INFECTION, IMMUNITY, AND SERUM DIAGNOSIS (5). Prerequisite, Bacteriology 115. Required of medical students. *Elective.

The early laboratory work is designed to demonstrate the basic principles of immunology and serology. Practical work in the production and use of agglutinins, precipitins, lysins, and complement fixing antibodies is given. Known and unknown material is used to test the student's ability to use these principles in the diagnosis of the typhoid fevers, brucellosis, typhus fever, diphtheria, tuberculosis, gonorrhea, syphilis, blood stains, blood grouping, and hypersensitivity. Lectures consider the principles of infection, immunity, and resistance. Three lecture and six laboratory hours a week, winter quarter. Laboratory fee, \$6.00. Professor MacPherson; Mr. Schaaf.

110. PUBLIC HEALTH LABORATORY METHODS (5). Prerequisite, Bacteriology 101 and 104 or their equivalents. *Elective.

Lectures, discussions, and practical laboratory work in the diagnosis of diseases of public health importance, such as, scarlet fever, diphtheria, tuberculosis, whooping cough, pneumonia, typhoid fevers, brucellosis, dysentery, gonorrhea, syphilis, rabies, malaria, and hook worm. The student performs Schick, Dick, and Tuberculin tests. The preparation, standardization, and use of biological products is discussed. Emphasis is placed on the proper taking and handling of specimens, principles involved in diagnosis, and correct interpretation of results. Two lecture and six laboratory hours a week, fall and spring quarters. Laboratory fee, \$4.00. Professor MacPherson; Mr. Schaaf.

115. ADVANCED BACTERIOLOGY (5½). Prerequisite, Bacteriology 101 and 104. *Elective.

This course is designed to introduce the student to research methods through minor investigations under more or less constant guidance. The results of the investigation of a problem, including bibliography, are

^{*}Before registering for any of these courses in bacteriology the academic student must secure the permission of his Dean.

written up as for publication. One conference and nine laboratory hours a week, fall or winter or spring quarter. Laboratory fee, \$4.00. Professor MacPherson.

117. PUBLIC HEALTH AND HYGIENE (3). Prerequisite, Bacteriology 101. Required of medical students. *Elective.

Lectures and demonstrations designed to acquaint the student with general environmental sanitation including sewage disposal, water supplies, and the hygiene of milk and food. Vital statistics, public health regulations, and various public health organizations are discussed. Arthropod vectors of disease and the important parasitic protozoa and helminths are considered. Three hours of lecture and demonstrations a week, spring quarter. Professor Brown.

51. ELEMENTARY BACTERIOLOGY (5). Prerequisite, General Chemistry and one course in Botany or Zoology. *Elective.

A lecture and laboratory course offered as a general science course. The fundamental principles of bacteriology are emphasized, and the student is trained in general bacteriological technique. The morphological and physiological characteristics of representative non-pathogenic bacteria, yeasts, and molds are studied in the laboratory. Lectures consider the applications of bacteriology to sanitation, dairying, agriculture, medicine, and industry in order that the student may have an idea of the entire field of bacteriology. Three lecture and six laboratory hours a week, spring quarter. Laboratory fee, \$4.00. Professor MacPherson; Mr. Schaaf.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

James Clarence Andrews, B.S., Ph.D., Professor of Biological Chemistry. Granvil Charles Kyker, B.S., Ph.D., Assistant Professor of Biological Chemistry.

ALBERT BARRON SAMPLE, B.S., Assistant in Biological Chemistry.

101. FOOD CHEMISTRY (6). Prerequisite, Chemistry 42 and 61, or equivalent.

A course covering the principles of the chemistry of food and nutrition from a purely chemical viewpoint. The laboratory work consists chiefly of quantitative methods and provides fundamental training for practical food analysis. Three lecture and six laboratory hours a week, fall quarter. Laboratory fee, \$10.00. Professors Andrews; Kyker.

102-103. GENERAL BIOLOGICAL CHEMISTRY (6 each). Prerequisite, Chemistry 42 and 61, 62, 63, or equivalent.

A class and laboratory course covering the fundamental principles and methods of biological chemistry as applied to the metabolism of the animal body. To meet the needs of medical students, of whom it is required, 102 contains more and 103 less than the equivalent of a full course. The six hour rating represents an average of both quarters. 102: three lecture and eight laboratory hours a week, winter quarter. 103: two lecture and four laboratory hours a week, spring quarter. Laboratory fee for non-medical students, \$10.00 for each quarter. Professors Andrews; Kyker.

41. *FOODS (3).

An elementary course dealing with the principles of food selection and food values. The practical and economic value of various classes of food products from the standpoint of protein, fat, carbohydrate, mineral, and vitamin content is emphasized. Elementary chemistry is desirable but not indispensably prerequisite. Three hours a week, winter quarter. Professor Andrews.

^{*} An academic student before registering for this course must secure the permission of his Dean.

201-202-203. ADVANCED BIOLOGICAL CHEMISTRY (6 each).

A study of special phases of the subject including seminar, class room, and laboratory work. Professor Andrews.

301-302-303. RESEARCH IN BIOLOGICAL CHEMISTRY (6 or more each).

Intended for applicants for advanced degrees. Professor Andrews.

NOTE: These courses are described in more detail in the Graduate Catalog.

DEPARTMENT OF PATHOLOGY

James Bell Bullitt, A.M., M.D., Professor of Pathology.
Russell Lowell Holman, A.B., M.D., Assistant Professor of Pathology.
Thomas Henderson Byrnes, B.S., M.D., Instructor in Pathology.
WILLARD C. Hewitt, A.B., Student Assistant.
Miss Mittie Pickard, Senior Technician.
Mrs. Russell Lowell Holman, B.S., Secretary.

51. CLINICAL PATHOLOGY (4). Prerequisite, Pathology 161.

The object of this course is to familiarize the student with routine examinations of the blood, urine, feces, gastro-intestinal contents, sputum, transudates, and exudates; to acquire accuracy in such procedures; and to secure a general understanding of their relation to the diagnosis of disease. Material to be examined consists of preserved specimens and fresh specimens from Watts Hospital (Durham). Opportunity is also afforded for the study of patients with special reference to the laboratory examinations indicated and for the correlation of the findings. Two lecture and four laboratory hours a week, spring quarter. Dr. Byrnes.

161abc. PATHOLOGY (18). Prerequisite, Anatomy, Histology, Physiology, Biochemistry.

Embraces a consideration of general and special pathology from the chemical and physiological as well as the morphological aspects. Lectures and recitations are combined with laboratory work in a study of both gross and microscopical preparations. Each student is supplied with a set of "loan" sections (about 200) which form the basis of the study. This is supplemented by the use of a considerable number of special demonstration sections. A series of practical examinations is held, in which each student is required to diagnose the process and describe the salient features in about fifty "unknown" sections. A series of several hundred preserved pathological specimens, selected to illustrate many of the common and some of the uncommon pathological processes, is arranged on open shelves in the laboratory. These are studied in conjunction with the microscopical work. The class is divided into small sections which rotate in attending the autopsies at Watts Hospital (Durham). Each student is required to write his own protocol of each autopsy which he observes. Three lecture and six laboratory hours a week, fall, winter, and spring quarters. Professors Bullitt, Holman; Dr. Byrnes.

Elective Courses

162 (I). SURGICAL PATHOLOGY. Prerequisite, Pathology 161.

A detailed study of surgical material, with special reference to tumors.

Professor Bullitt.

162 (II). GROSS PATHOLOGY. Prerequisite, Pathology 161.

A study of the findings in necropsied cases, designed to help the student correlate pathological processes. The clinical and laboratory data as well as the microscopical slides are available in most of the cases. Professor Holman.

162 (III). EXPERIMENTAL PATHOLOGY. Prerequisite, Physiology and Biochemistry.

Production of various inflammatory lesions and other pathological processes, (edema, hemorrhage, ischemia, jaundice, urinary obstruction, etc.), and study of their development. Professors Bullitt, Holman.

162 (IV). RESEARCH IN PATHOLOGY. Prerequisite, Physiology and Biochemistry.

Professors Bullitt, Holman.

Hours and credits for these courses (162 I, II, III, IV) to be arranged.

DEPARTMENT OF PHARMACOLOGY

WILLIAM DEBERNIERE MACNIDER, M.D., Kenan Research Professor of Pharmacology.

Grant Lester Donnelly, A.B. in Educ., M.D., Associate Professor of Pharmacology.

ARNOLD BRECKENRIDGE, A.B., Technical Assistant.

171ab. PHARMACOLOGY AND MATERIA MEDICA (15).

This course covers two quarters in the second year of the medical curriculum. The character of the work permits a division of the course into three parts: (a) A consideration of the ways in which drugs may affect the organism. This introduction embraces a discussion of the various physicochemical forces influencing drug activity, and the modification of the action of these conditions in different pathological states of the organism, such, for instance, as febrile conditions and various metabolic disturbances. (b) A general study of the pharmacology of the important The drugs are considered in groups depending upon their predrugs. dominant effect in the body. The student learns the preparation, their dose, physiological incompatibilities, and considers in detail the way in which the drugs act as pharmacological agents. The symptoms and treatment of poisoning are considered following the discussion of the pharmacology of the group. (c) A consideration of the pharmacology of the drugs in the pathological animal, with a discussion of the modification of drug activity in various pathological states. In conjunction with this study emphasis is given to the use of drugs as therapeutic agents and a study is made employing such remedies as are indicated in the form of a prescrip-Students are required to write prescriptions, which are then subjected to the criticism of various members of the class and the instructor.

The laboratory work consists in a careful and accurate study of the action of practically all of the more important drugs on animals. For this work, the higher animals, such as the cat and dog, are chiefly used. The class is divided into groups of two or four, and the experimental work is conducted by the student. Each student is required to hand in to the instructor at the completion of the course a laboratory notebook containing a detailed account of each experiment, an explanation of the results obtained, and the tracings made during the experiment. Oral and written recitations are frequently held. Five lecture and five laboratory hours a week, fall and winter quarters. Laboratory fee for non-medical students, \$15.00 a quarter. Professors MacNider, Donnelly. See Catalogue of the Graduate School.

172. ADVANCED PHARMACOLOGY.

Two types of courses will be offered: (a) an experimental study of the action of various drugs upon the normal animal; (b) an experimental study of the action of various drugs and other agencies upon the pathological animal. Hours by arrangement. Professor MacNider.

55. PHARMACOLOGY (4). Prerequisite, Materia Medica 51-52, Physiology 51. Primarily for students in pharmacy.

This course is concerned with the physiological and therapeutic action of drugs both upon man and upon lower animals. Prior to this work the student has completed Materia Medica 51-52 which is concerned with the study of physical and chemical properties of drugs, their preparations, dosage, and a brief statement of their effect. This course in Pharmacology is intended to amplify and give in a more detailed fashion an understanding of the way in which the drug acts in normal and in toxic quantities. A consideration of the biological standardization of drugs is also a part of this course. Textbook: Bastedo's Materia Medica, Pharmacology, and Therapeutics. Three lecture and two laboratory hours a week, spring quarter, third year. Laboratory fee, \$5.00. Professor Donnelly.

DEPARTMENT OF PHYSIOLOGY

ISAAC HALL MANNING, M.D., Professor of Physiology. H. WARD FERRILL, Ph.D., Associate Professor of Physiology. Woodrow Wilson Jervis, Technical Assistant.

141. PHYSIOLOGY (5).

Study of the physiology of muscle, nerve, and circulation. Attention is called to pathological conditions which are commonly associated with disturbed functions of these systems and which tend to emphasize the importance of the normal function.

Required of all medical students and open to any others who have had the necessary prerequisite work. Three lecture and four laboratory hours a week, winter quarter. Laboratory fee for non-medical students, \$5.00. Professors Manning, Ferrill. See Catalogue of the Graduate School.

142. PHYSIOLOGY (12). Prerequisite, Physiology 141 or its equivalent.

Study of respiration, digestion, metabolism, excretions, the central nervous system, special senses, and endocrine glands.

Required of all medical students and open to any other students who have had the necessary prerequisite work. Six lecture and twelve laboratory hours a week, spring quarter. Laboratory fee for non-medical students, \$10.00. Professors Manning, Ferrill. See Catalogue of the Graduate School.

3a. NATURAL SCIENCE (4). Elements of Human Physiology. Freshman Elective. Prerequisite, Natural Science 1-2. Elective for freshmen in the College of Arts and Sciences.

A consideration of the functions of the various parts of the body and their relation and importance in maintaining the normal condition of the organism. The systems are discussed separately and collectively in so far as each depends upon the other for proper regulation. Stress is applied to both normal and abnormal conditions in man. Three lecture and two demonstration hours a week, spring quarter. Laboratory fee, \$2.00. Professor Ferrill.

51. PHYSIOLOGY (5).

Study of circulation, respiration, digestion, metabolism, nutrition, the nervous system, reproduction, excretions, and the endocrine glands. These systems are discussed in lectures and the material supplemented by the laboratory work. The student uses frogs and turtles in the laboratory and assists the instructor with demonstrations on dogs, cats, and rabbits. In this way the student is made acquainted with the actual functions of the body and how each part or system is related and affected by every other system.

Open to students of pharmacy and any other college students who have had elementary zoology and chemistry. Three lecture and four laboratory hours a week, fall quarter. Laboratory fee, \$5.00. Professor Ferrill.

ADDITIONAL COURSES

61. PHYSICAL DIAGNOSIS (10).

A course in the method of history taking and physical examination

with lectures, demonstrations, and practical exercises.

At the beginning emphasis is placed on the physical signs in the normal subject. The class is divided into groups for practical exercises on and demonstrations of the clinical material in the University Infirmary, in the wards and out-patient departments of Watts Hospital (Durham), of the State Tubercular Sanatorium, of the State Hospital in Raleigh, and in the out-patient department of the MacPherson Eye, Ear, Nose, and Throat Hospital, in Durham. Each student has thirty practical exercises of three hours each. Two hours lecture and four hours practical exercises a week, winter quarter; three hours lecture and six hours practical exercises a week, spring quarter. Professor Berryhill; Drs. Morgan, Hedgpeth, Stone.

62. VOLUNTARY COURSE. Clinical pathological conference, Watts Hospital. Wednesdays, 2 to 4 P.M. Spring Quarter. Professor Berryhill; Dr. Byrnes.

Note: The charity wards and out-patient department of Watts Hospital (220 beds) are available to the medical school for teaching purposes. These facilities provide clinical material for the courses in Physical Diagnosis and Clinical Pathology, and afford opportunity for attendance upon autopsies and the study of fresh pathological specimens.

63. INTRODUCTION TO OBSTETRICS (1).

This course is of an introductory nature, following the general ideas incorporated in the physical diagnosis course and emphasizing those factors that have special importance in obstetric diagnosis. The subjects covered in the ten lectures will be anatomy of the female pelvis; menstruation and ovulation, conception, placentation; embryology, the diagnosis and course of pregnancy, mechanism of labor (briefly) and post partum course. The purpose is to familiarize the student with obstetric terminology and processes and to impress the possibility of normal obstetrics. One hour a week, spring quarter. Dr. Ross.

64. PRINCIPLES OF SURGERY (3).

A course consisting of lectures, laboratory demonstrations, and demonstrations in the Surgical Dispensary of Watts Hospital in Durham in which the fundamental processes of physiology and pathology as applied to surgery are studied. Such subjects as wound healing, infection, asepsis, and antisepsis are considered. Practical demonstrations in the various methods of sterilizing the hands, instruments, dressings, and instruction in the methods of applying the usual surgical dressings are given. The object of the course is to prepare the students for the beginning of their clinical training. Two hours lecture and four hours practical exercises a week, spring quarter. Dr. Hedgpeth.

THE DIVISION OF PUBLIC HEALTH

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ROBERT BURTON HOUSE, A.M., Dean of Administration

WILLIAM DEBERNIERE MACNIDER, M.D., Sc.D., LL.D., Dean of School of Medicine MILTON JOSEPH ROSENAU, A.M., M.D., Director

Carl V. Reynolds, M.D., State Health Officer, North Carolina State Board of Health

MARK V. ZIEGLER, A.B., M.D., Senior Surgeon and Regional Consultant, Interstate Sanitary District No. 2, United States Public Health Service

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^{*}The Dean of Administration, the Registrar, and the Dean of Students are ex officio members of each Administrative Board.

- Jesse H. Epperson, B.S., F.A.P.H.A., Superintendent of Health, Durham City-County Health Department, Durham, N. C.
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- ROBERT T. STIMPSON, A.B., M.D., C.P.H., Director, Bureau of Vital Statistics, N. C. State Board of Health
- WILLIAM P. RICHARDSON, M.D., M.P.H., District Health Officer and Instructor in Public Health for Social Workers
- WILLIAM MAURICE COPPRIDGE, M.D., Chief, Urological Staff, Watts Hospital, Durham, N. C., Specialist, Venereal Diseases
- ERIC MILTON MATSNER, M.D., Executive Secretary, National Medical Council on Birth Control
- WALTER REECE BERRYHILL, A.B., M.D., University Physician and Associate Professor of Medicine

GENERAL STATEMENT

The University of North Carolina has established a Division of Public Health and offers courses of study to supplement the basic work in this field, in order that immediate and practical needs of trained personnel in this state and region may be adequately met. This service is made possible through the coordination of the facilities and the staffs of the School of Medicine, and its Division of Public Health of the University, and the North Carolina State Board of Health, and other agencies which are concerned with the problems of public health.

The curriculum covers a period of sixteen weeks and includes both intra-mural instruction and field work. The courses offered are those best adapted to equip a physician for the special responsibilities of a health officer and those which may be covered within a short period of intensive study.

The students in the Division of Public Health are enrolled in the University of North Carolina and enjoy all the rights and privileges of the general student body. Upon completion of the course, an academic award is granted by the University endorsed by the North Carolina State Board of Health.

The United States Public Health Service has designated the University of North Carolina as the teaching unit in public health for Interstate Sanitary District No. 2, comprising the States of Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida and the District of Columbia.

For more detailed information and proposed curricula leading to degrees, see the special bulletin of the Division of Public Health.

APPLICATION FOR ADMISSION TO THE SCHOOL OF MEDICINE

THE UNIVERSITY OF NORTH CAROLINA

Name and Address
Parent-Guardian's Name and Address
RaceReligion
Date of Application
Date of Proposed Entrance
Birthplace Date of Birth
Preparatory School
Undergraduate training, and where
Departments of Under-
graduate Major and Minor
If no degree, how many years of college, and where?
Transcription and the desired and the second and th
Have you applied for admission into any other medical school?
Have you ever matriculated in any other medical school?
the study of medicine
To what school would you wish to transfer for your M.D. degree (give first and second choice)
Signature

