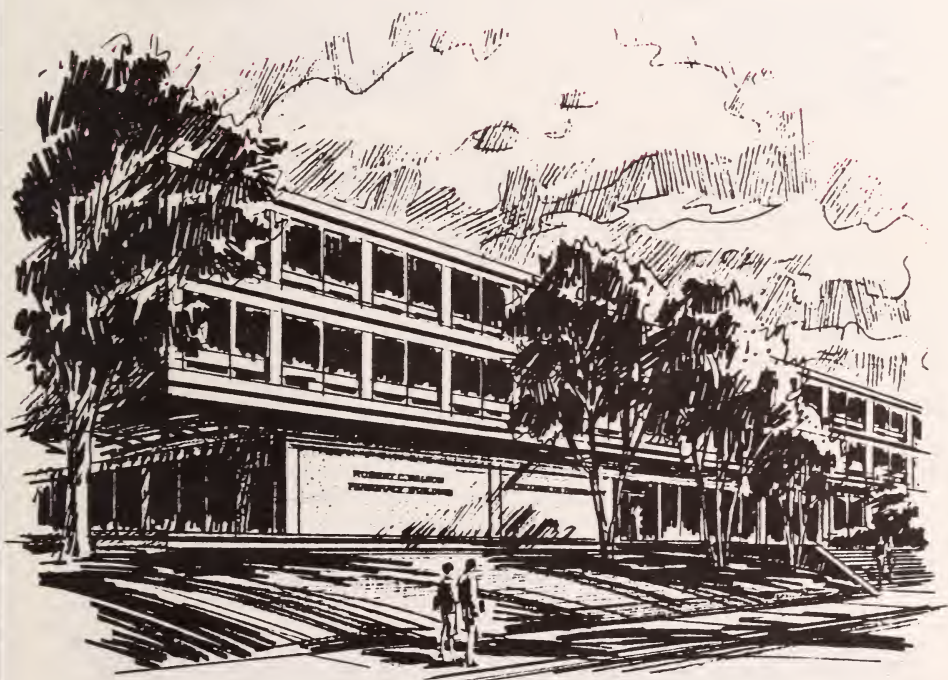

The University of Georgia College of Pharmacy

Bulletin 1996 - 1998



A Unit of the University System of Georgia

FOR MORE INFORMATION

Information and application forms:

Office of the Dean

College of Pharmacy
The University of Georgia
Athens, Georgia 30602
(706) 542-5278

Housing for single students:

Department of University Housing

The University of Georgia
Athens, Georgia 30602
(706) 542-1421

Housing for married students:

Family Housing Office

The University of Georgia
Athens, Georgia 30602
(706) 542-1473

Payment of fees and deposits:

Treasurer's Office

The University of Georgia
Athens, Georgia 30602
(706) 542-1625

Scholarships and loans:

Office of Student Financial Aid

The University of Georgia
Athens, Georgia 30602
(706) 542-6147

Admissions:

Office of Undergraduate Admissions

The University of Georgia
Athens, Georgia 30602
(706) 542-2112

Each year The University of Georgia publishes a campus security report. This report contains information on campus safety programs as well as advice on crime statistics about crimes on campus during the last three calendar years. This report is available upon request from the Admissions Secretary in the Office of the Dean of the College of Pharmacy, The University of Georgia, Athens, Georgia 30602-2351, (706) 542-5278.

Cost: \$3,200/Quantity: 7,000 copies

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Pursuant to directives of the President of this institution, the University of Georgia continues its affirmative implementation of equal opportunity to employees, students, covered contractors and vendors, and applicants for employment, admission, or contractor/vendor status. The University of Georgia will act in matters of employment, admissions, programs, and services free of prohibited bias with regard to race, creed, color, sex, national origin, religion, age, veteran status, or disability. Further, the University of Georgia will not maintain racially segregated facilities.

Continuation of the above policies is consistent with applicable provisions of the Civil Rights Act of 1964, the Education Amendments of 1972, Executive Order 11246, Revised Order 4, the Vietnam Era Veterans Readjustment Act of 1974, the Rehabilitation Act of 1973, and The Americans with Disabilities Act of 1990, as revised and/or amended, with implementing regulations. Accordingly, this institution will not discriminate in employment, admissions, programs, or services with regard to any position for which the applicant, employee, or student is qualified and will make reasonable accommodation for physical and mental limitations.

The Affirmative Action Plan implementing the above body of law, regulation, and policy is administered by Claude-Leonard Davis, Director of the UGA Equal Opportunity Office at 3 Peabody Hall, Athens, Georgia 30602-1622. Telephone inquiries concerning this plan may be directed to (706) 542-7912. Copies of this plan are available for inspection in the Equal Opportunity Office and in the UGA Main Library during normal weekday working hours.

While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the bulletin concerning rules, policies, fees, curricula, courses, calendar, or other matters. Further, the statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution.

If you have a disability and need assistance in order to obtain this bulletin in an alternative format, please contact the Office of the Dean at (706) 542-5278.

ACADEMIC CALENDAR 1996-1998

FALL SEMESTER	1996-97	1997-98
Orientation	Monday, August 19	Monday, August 18
Classes Begin	Tuesday, August 20	Tuesday, August 19
Holiday	Monday, September 2	Monday, September 1
Midpoint of Semester	Friday, October 18	Friday, October 17
12-week Courses End	Tuesday, November 12	Tuesday, November 11
Final Exams for 12-week Courses	November 13-15	November 12-14
Thanksgiving Recess	Nov. 23-Dec. 1	November 22-30
Classes End	Friday, December 13	Friday, December 12
Final Exams	December 16-17	December 15-16

SPRING SEMESTER

Classes Begin	Tuesday, January 7	Wednesday January 7
Holiday	Monday, January 20	Monday, January 19
Midpoint of Semester	Monday, March 3	Tuesday, March 3
Spring Break	March 22-30	March 21-29
12-week Courses End	Tuesday, April 8	Wednesday, April 8
Final Exams for 12-week Courses	April 9-11	April 9-10, 13
Classes End	Monday, May 5	Tuesday, May 5
Final Exams	May 6-8	May 6-8

This calendar is correct as of the date of this publication, but may be subject to change during the next year. Please refer to the *Schedule of Classes* and/or other special announcements that may be forthcoming.

THE UNIVERSITY SYSTEM OF GEORGIA

The University System of Georgia includes 34 state-sponsored, public institutions located throughout Georgia — 6 universities, 13 senior colleges and 15 two-year colleges.

A 16-member constitutional Board of Regents — one from each of the state's 11 Congressional Districts and five from the state-at-large — governs the University System which was established in 1932. Board members are appointed by the Governor, subject to state senate confirmation, for seven year terms.

The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction; Public Service/Continuing Education; Research.

INSTRUCTION includes programs of study leading to degrees ranging from the associate (2-year) to the doctoral level, and certificates.

Requirements for admission to instructional programs are set by institutions, pursuant to policies of the Board of Regents which sets minimum academic standards and leaves each institution the prerogative of establishing higher standards. Application for admission should be made directly to institutions.

A Core Curriculum, defining freshman and sophomore courses for students who seek degrees beyond the associate level, is in effect for all University System institutions. This 90-hour Curriculum includes 60 in general education — humanities, mathematics, natural and social sciences — and 30 in the student's chosen major area. It facilitates transfer of freshman and sophomore credits within the University System.

PUBLIC SERVICE/CONTINUING EDUCATION includes non-degree programs, special college-degree-credit courses, and institutional outreach programs.

Non-degree activities would include short courses, conferences, seminars, lectures and consultative services in many interest areas. These activities, usually of short duration, are designed

to meet special educational, informational and cultural needs of people served by institutions. All institutions conduct some non-degree public service/continuing education. College-degree-credit courses are typically offered through extension center programs and teacher education consortiums.

RESEARCH encompasses investigations conducted for the discovery and application of knowledge. These investigations include clearly defined projects in some cases and non-programmatic activities in other cases. Research is conducted on campuses and at other locations and projects related to a large variety of educational objectives and societal needs. Most research is conducted by the 4 universities though some senior colleges also have research efforts underway.

Board of Regents' policies for government, management and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancellor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

Matriculation fees and nonresident tuition fees for students at all institutions are established by the Board of Regents. All students pay matriculation fees while out-of-state students pay non-resident tuition in addition. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents office.

THE COLLEGE OF PHARMACY

OFFICERS OF ADMINISTRATION

Feldman, Stuart, Ph.D. Professor and Dean
Francisco, George Elden Jr., Pharm.D.,
Associate Professor and Associate Dean
Hawkins, David Warner, Pharm.D., Professor
and Assistant Dean
Brooks, Paul Jackson, Pharm. D., Academic
Professional
Duke, Kenneth Martin, M.B.A., Clinical
Pharmacy Associate and Assistant to the
Dean
Tamborllo, Laura Jeanne, D.V.M., Director,
Animal Resources
Thomas, Patricia Cole, B.S., Clinical Pharmacy
Associate and Assistant to the Dean

THE FACULTY

Department of Medicinal Chemistry

Stewart, James Thomas, Ph.D., Professor and
Head
Bartlett, Michael Griffith, Ph.D., Assistant
Professor
Beach, Joseph Warren, Ph.D., Assistant
Professor
Chu, Chung Kwang, Ph.D., Professor
Ruenitz, Peter Carmichael, Ph.D., Professor
Taylor, Ethan Will, Ph.D., Associate Professor

Department of Pharmaceutics

Boudinot, Frank Douglas, Ph.D., Associate
Professor and Head
Boudinot, Sarah Frances, B.S., Instructor
Capomacchia, Anthony Cessare, Ph.D.,
Associate Professor
Jun, Hung Won, Ph.D., Professor
Lu, Donghao Robert, Ph.D., Assistant
Professor
Price, James Clarence, Ph.D., Professor
White, Catherine Ann, Ph.D., Assistant
Professor

Toxicology

Bruckner, James Victor, Ph.D., Professor and
Head
Bunce, Opal Rebecca, Ph.D., Associate
Professor
Dallas, Cham Edwards, Ph.D., Associate
Professor
Greenspan, Phillip, Ph.D., Assistant Professor
Hartle, Diane Kathleen, Ph.D., Associate
Professor
Iturrian, William Ben, Ph.D., Associate
Professor
Reigle, Thomas George, Ph.D., Associate
Professor
Tackett, Randall Lynn, Ph.D., Professor
Zhang, Yuanlin, M.S., Temporary Instructor

Department of Pharmacy Care Administration

Kotzan, Jeffrey Anthony, Ph.D., Professor and
Head
Martin, Bradley Charles, Ph.D., Assistant
Professor
Nichols, Gloria June, Ph.D., Assistant
Professor
Perri, Matthew III, Ph.D., Associate Professor
Pritchard, Franklin Lamar Jr., Ph.D., Academic
Professional Associate
Poirier, Sylvie, Ph.D., Assistant Professor

Department of Pharmacy Practice

DiPiro, Joseph Thomas, Pharm.D., Professor
and Head
Chisholm, Marie Annette, Pharm.D., Clinical
Assistant Professor
Cooper, James Weaver Jr., Ph.D., Professor
Cobb, Henry Herbert III, Ph.D., Clinical
Pharmacy Associate
Duke, Kenneth Martin, M.B.A., Clinical
Pharmacy Associate
Longe, Robert Leon, Pharm.D., Professor
May, Jere Russell, Pharm.D., Adjunct
Associate Professor
McCall, Charles Yates, Pharm.D., Associate
Professor
McCombs, Janet, Pharm.D., Clinical Assistant
Professor
Morton, Mark Ronald, Pharm.D., Academic
Professional
Reese, Ronald Lee, Pharm.D., Clinical
Assistant Professor
Schramm, Linda Christine, B.S., Clinical
Pharmacy Associate
Spruill, William Jerry, Pharm.D., Associate
Professor and Assistant Department
Head
Taylor, Andrew Thomas, Pharm.D., Associate
Professor
Terry, Alvin Vincent Jr., Ph.D., Assistant
Professor
Thomas, Patricia Cole, B.S., Clinical Pharmacy
Associate
Ujhelyi, Michael Robert, Pharm.D., Assistant
Professor
Wade, William Elton, Pharm.D., Associate
Professor
Warren, Flynn Wilford, M.S., Clinical
Pharmacy Associate
Winecoff, Allison Penland, Pharm.D., Assistant
Professor

Postgraduate Continuing Education

Ozburn, William Michael, Ed.D., Director of
Postgraduate Continuing Education and
Pharmaceutical Services
Gammill, Charles Goodrich, Ed.D., Public
Service Representative

GENERAL INFORMATION

PROGRAMS OF STUDY

The Bachelor of Science in Pharmacy degree is awarded to students who successfully complete the five-year study of prescribed courses. The first two years (pre-pharmacy) may be completed at any accredited institution of higher education. The last three years (professional) must be in residence at the College of Pharmacy. Six semesters (nine quarters) of residence in the professional baccalaureate program are required by the American Council of Pharmaceutical Education.

Students who begin their professional study in the fall term will have the opportunity to "track" toward a Doctor of Pharmacy degree. During the second professional year, application will be made regarding this choice. The Pharm.D. tracking program is nine semesters in length, and the program is taught at The Medical College of Georgia in Augusta.

A postbaccalaureate Doctor of Pharmacy degree, which is six quarters in length, is available. All professional programs are accredited by the American Council on Pharmaceutical Education.

ADMISSION TO PROFESSIONAL PROGRAMS

To be admitted to a professional program in the College of Pharmacy, a student must complete pre-pharmacy requirements. At the University of Georgia, the pre-pharmacy program is administered through the College of Arts and Sciences. The two years of pre-pharmacy education require satisfactory completion of not less than 90 quarter hours of academic work counting toward the pharmacy degree. In addition, students must meet the general requirements for physical education.

Applicants to the professional program must take the Pharmacy College Admission Test (PCAT). The fall offering date is the preferred time. In addition to the applicant's grade point average, the selection process will utilize the PCAT scores and recommendations. The College of Pharmacy accepts students into its professional program for fall semester only.

Application to the College of Pharmacy should be submitted by March 1. Transcripts showing all college work taken should accompany the application. Students may apply to the Dean of the College of Pharmacy when they have completed four quarters of academic work. Applicants who are accepted but do not attend for the accepted term may repeat the admission process for a future date.

Applicants for admission to the College of Pharmacy who are known to have been officially dismissed from another pharmacy program will not be accepted. A student who gains entrance to the College by misrepresentation of facts may be dismissed immediately.

ADMISSION TO THE POSTBACCALAUREATE DOCTOR OF PHARMACY PROGRAM

Persons holding a baccalaureate degree in pharmacy from an A.C.P.E. accredited institution may apply to the Pharm.D. academic program. Inquiries should be sent to the Office of the Dean. The application deadline is January 31.

PRE-PHARMACY CURRICULUM

See University of Georgia Undergraduate Bulletin for specific credit hours and prerequisites.

Quarter Hours

AREA I - HUMANITIES/FINE ARTS

ENG 101, 102 10

SPC 108 or 109 5

Literature--a course may be chosen from: 5

CLC 120, 121, 150

CML 221, 222, 225H, 226H

ENG 231G, 232G, 233G, 105H,

235H, 236H, 237H

Intermediate level foreign language
(at the 100-200 level)

ENG 101. English Composition. Expository themes on both general and literary topics developed by basic rhetorical methods.

ENG 102. English Composition.

Prerequisite: Credit for ENG 101 by the placement test or earned with a grade of C or better. Themes on fiction, poetry, and drama.

ENG 105H. Composition and Literature (Honors). Literary works as specimens of effective writing.

SPC 108. Fundamentals of Speech Communication. A first course in the fundamental principles of effective oral communication. Special attention is given to the selection and organization of materials, the presentation of speeches, and the development of an acceptable speaking voice.

SPC 109. Interpersonal Communication. Study of communication as it occurs in two-person and small group settings. Primary concern is given to understanding how an individual can use verbal and nonverbal communication to improve relationships and derive maximum social rewards. Emphasis is placed on student involvement in class exercises and discussions.

CLC 120. Classical Culture: Greece. A study of the characteristics of Greek literature, made principally through translations of selections from Greek authors.

CLC 121. Classical Culture: Rome. A study of the characteristics of Latin culture, made principally through translations of selections from Latin authors.

CLC 150. Mythology in Classical Literature. An introduction to the myths and sagas of the Greeks and Romans, in particular through ancient literature.

CML 221, 222. Western World Literature. A survey of Western World Literature from Homer to the 20th Century.

CML 225H, 226H. Western World Literature (Honors). A survey of Western World Literature from Homer to the 20th Century for Honors.

ENG 231G. English Literature from the Beginnings to 1700. 5 hours.

Prerequisite: ENG 102. Writers studied typically include the Beowulf poet, Gawain poet, Chaucer, Spenser, Sidney, Marlowe, Donne, Jonson, Shakespeare, and Milton. Satisfies core literature requirement.

ENG 232G. English Literature from 1700 to the Present. 5 hours.

Prerequisite: ENG 102. English literature from 1700 to the present. Writers studied typically include Pope, Swift, Johnson, Blake, Wordsworth, Coleridge, Keats, Tennyson, Arnold, Browning, one or two 19th century novelists, Yeats, Woolf, and Joyce. Satisfies core literature requirement.

ENG 233G. American Literature from the Beginnings to 1865. 5 hours.
Prerequisite: ENG 102. American literature from the beginnings to 1865. Study of the most significant work by writers in America from the 17th-century colonists through the Revolution to the Civil War. Writers may include Anne Bradstreet, Benjamin Franklin, Washington Irving, Nathaniel Hawthorne, Ralph Waldo Emerson, Frederick Douglass, Herman Melville, Harriet Beecher Stowe, and Emily Dickinson. Satisfies core literature requirement.

ENG 235H. Masterpieces of Literature in English (Honors). Masterpieces of English literature from the beginnings to 1700.

ENG 236H. Masterpieces of Literature in English (Honors). Masterpieces of English literature from 1700 to the present.

ENG 237H. Masterpieces of American Literature (Honors). Major works in American literature since 1800.

AREA II - MATHEMATICS AND NATURAL SCIENCES

MAT 116*	5
CHM 121 and 121L, 122 and 122L, 123 and 123L	15

MAT 116. Precalculus Mathematics. The concept of function, intensive study of polynomial, rational, exponential, logarithmic, and trigonometric functions, and applications.

CHM 121, 122. General Chemistry. The first course is a systematic treatment of fundamental chemical principles. The second course is a continuation of the first.

CHM 121L, 122L. General Chemistry Laboratory.

CHM 123. Qualitative Analysis. The fundamental theories of qualitative analysis and analysis of common cations and anions by semi-micro methods.

CHM 123L. Qualitative Analysis Laboratory.

AREA III - SOCIAL SCIENCES

HIS 251 or 252 #	5
POL 101	5
ECN 106 or 107 (106 preferred)	5
Elective--may be chosen from:	5
ANT 102	
HIS 111, 121, 122, 251#, 252#	
PSY 101, 258	
SOC 105, 111, 160	

HIS 251. American History to 1865. Development of the American nation from the Age of Discovery to 1865.

HIS 252. American History Since 1865. Development of the American nation from 1865 to the present.

POL 101. American Government. An introductory course covering the essential facts of federal, state, and local governments in the United States.

ECN 106. Principles of Microeconomics. Introduction to the price and market system with applications of microeconomic theory to current economic problems.

ECN 107. Principles of Macroeconomics. Income, employment, and other macroeconomic theory with applications to current economic problems.

ANT 102.@ Introduction to Anthropology.

Variation in human culture and biology from the earliest beginnings to the present, including relationships between human biology, culture, and the environment, and an understanding of contemporary cultural differences. (This course will satisfy the Environmental Literacy Requirement for graduation.)

HIS 111. History of Western Civilization to 1500. Development of the institutions of the Western world from earliest times to 1500.

HIS 121. Early Modern Western Civilization. A cultural survey of Western civilization from the Renaissance to the end of the Napoleonic Era, emphasizing ideas of the period.

HIS 122. Modern Western Civilization. A cultural survey of Western civilization from the Congress of Vienna to the present, emphasizing ideas of the period.

HIS 251. Description above.

HIS 252. Description above.

PSY 101. Elementary Psychology.

Introduction to the phenomena, laws, theories, and history of psychology. Topics include animal and human learning, motivation, perception, differential psychology, social behavior, and biopsychology. Emphasis is on fundamental principles rather than on application. Students are given the opportunity to participate in ongoing research.

PSY 258. The Psychology of Adjustment.

Introduction to psychological adjustment, including appropriate and inappropriate reactions to frustration and stress; solutions to conflict, fear and anxiety; building self-concept and improving interpersonal relations.

SOC 105. Introductory Sociology. An introduction to the sociological analysis of society, its origins, structure, change and problems. Emphasis is on the nature of culture, social interaction, social groups and social institutions.

SOC 111. American Society. An analysis of the major institutions and processes in contemporary American society, including cultural beliefs, work and stratification, family patterns, political and economic issues, and education.

SOC 160. Contemporary Social Problems. A study of the major problems of our times and their social and cultural causes and consequences. The course will deal with society's perception of these social issues and attempts to resolve these problems.

@This course will satisfy the Environmental Literacy Requirement for graduation.

AREA IV - COURSES RELATED TO MAJOR

CHM 240 and 240L, 241 and 241L	10
BIO 103-103L, 104-104L	10
PCS 127-127L, 128-128L	10
PEB 100-165 (Physical Education)	2

CHM 240, 241. Fundamental Organic Chemistry. A two-quarter sequence designed to teach students the basics of organic chemistry in preparation for entrance into veterinary medicine and pharmacy schools or for majors in bioscience fields.

CHM 240L, 241L. Fundamental Organic Chemistry Laboratory.

BIO 103-103L.** **Principles of Biology.** An introductory biology course which includes: cell structure and function; cell chemistry, cell division; genetics; gene expression and regulation; animal development; evolution; behavior; diversity of viruses and bacteria.

BIO 104-104L.** **Principles of Biology.** A second course in an introductory biology sequence which includes: cell respiration, photosynthesis; plant and animal phylogeny; structure and function of major plant and animal systems; ecology.

PCS 127-127L. **Introductory Physics - Mechanics.** An introductory course that deals with the fundamental laws of mechanics.

PCS 128-128L. **Introductory Physics - Thermodynamics, Electricity and Magnetism.** An introductory course that deals with the fundamental laws of thermodynamics, electricity and magnetism.

*MAT 253 suggested as a substitute if student qualifies.

**BIO 107-107L or 108-108L may be taken instead of 103-103L or 104-104L.

#Either HIS 251 or 252 must be taken as a required course; the other may be taken as an elective.

U.S. - Georgia History, Constitution, Regents Exam. "U.S. History" taken at any accredited college will satisfy the University's requirement for U.S. and Georgia history. "American Government" taken at a Georgia college will satisfy both the federal and state constitution requirements. "American Government" taken outside of Georgia satisfies the Federal Constitution requirement only. All students will also be required to pass the Regents Exam if they have not already done so at another University System institution. The University will automatically satisfy these requirements if the student satisfies them at another system school. If a person has earned a baccalaureate degree, the Regents Exam is automatically satisfied.

While the provisions of this catalog will ordinarily be applied as stated, the College of Pharmacy reserves the right to change any provision listed in this catalog, including but not limited to academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Office of the Dean. It is especially important that each student note that it is his/her responsibility to keep himself/herself apprised of current graduation requirements for his/her particular degree program.

REGULATIONS

HOURS

In order to receive the Bachelor of Science degree from the College of Pharmacy, a student must have earned academic credit for not less than 90 quarter hours (exclusive of physical education) in pre-pharmacy course work and 105 semester hours of required professional course work. Similarly, a minimum of 150 semester hours of professional course work are required for the tracking Pharm. D. program.

PHARMACY INTERNSHIP

In order to become licensed to practice pharmacy in the state of Georgia, 1500 hours of internship must be earned as a full-time intern under the supervision of a pharmacist. Credit for internship may be received only after a student has been accepted into a college of pharmacy. Students are encouraged to satisfy internship requirements during the summers. A total of 480 hours of credit toward internship will be awarded for work performed while registered for academic credit in an authorized externship program. An intern license is required for participation in the externship program.

All intern pharmacists must contact the Joint Secretary, State Examining Boards, 166 Pryor Street, S.W., Atlanta, Georgia 30303 in order to receive a license. The pharmacist supervising the intern must also notify the joint secretary that the intern is under his/her supervision.

FINANCES AND AID

EXPENSES

Expenses for pharmacy students at the University of Georgia are higher than for most other on-campus students. The following (not including travel, clothing, and incidentals) is an estimate of quarterly expenses.

Total Resident Fees	\$880.00
Total Non-Resident Fees	\$2,338.00
Residence Halls	\$515.00-\$720.00
Meals	\$490.00-\$550.00
Books	\$130.00
Lab Clothing and Equipment	\$25.00

The University reserves the right to change its tuition and fees at the beginning of any quarter and without previous notice. This right will be exercised cautiously.

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PROFESSIONAL PROGRAMS

REQUIRED COURSES	Semester Hours	Third Professional Year--Baccalaureate Program	
First Professional Year			
PHM 301 Introduction to Pharmacy	3	PHM 514 Pharmacy Skills Lab V	1
PHM 305 Biochemical Basis of Disease I	2	PHM 526 Clinical Pharmacokinetics I	3
PHM 306 Biochemical Basis of Disease II	2	PHM 565 Pharmacy Care Management	3
PHM 310 Pharmacy Skills Lab I	2	PHM 568 Pharmacy Law	1
PHM 311 Pharmacy Skills Lab II	2	PHM 580ABCD Externship in Pharmacy	16
PHM 320 Quantitative Methods		PHM 582 Self-Care & Nonprescription Medications	3
in Pharmacy	3	Electives	6
PHM 340 Anatomy and Physiology I	3		
PHM 341 Anatomy and Physiology II	3	Third Professional Year--Doctor of Pharmacy Program	
PHM 347 Pathophysiology I	3		
PHM 348 Pathophysiology II	3	PHM 514 Pharmacy Skills Lab V	1
PHM 362 Administrative Sciences I	3	PHM 526 Clinical Pharmacokinetics I	3
PHM 375 Pharmacy and the U.S. Health Care System	3	PHM 527 Clinical Pharmacokinetics II	3
PHM 380 Clinical Applications I	1	PHM 565 Pharmacy Care Management	3
PHM 385 Clinical Applications II	1	PHM 568 Pharmacy Law	1
PHM 390 Pharmacy Intercommunications	1	PHM 582 Self-Care & Nonprescription Medications	3
PHM 394 Survey of Drug Information	1	PHM 584 Physical Examination	2
		PHM 586 Pharmacotherapy I	4
		PHM 587 Pharmacotherapy II	4
		PHM 592 Clinical Seminar	1
		PHM 595 Advanced Drug Information & Drug Policy Management	4
		Electives	6
Second Professional Year			
PHM 405 Principles of Medicinal Chemistry I	13	Fourth Professional Year--Doctor of Pharmacy Program	
PHM 406 Principles of Medicinal Chemistry II	3		
PHM 412 Pharmacy Skills Lab III	2	PHM 590ABCDEF Required Pharmacy Clerkships	24
PHM 413 Pharmacy Skills Lab IV	2	PHM 591ABCDE Selective Pharmacy Clerkships	20
PHM 418 Drug Therapy of Infectious Disease	3		
PHM 419 Chemotherapy of Cancer	2		
PHM 420 Principles of Pharmaceutics I	3		
PHM 421 Principles of Pharmaceutics II	3		
PHM 441 Pharmacology I	3		
PHM 442 Pharmacology II	3		
PHM 485 Disease Management I	3		
PHM 486 Disease Management II	3		
PHM 480 Pharmacy Seminar	1		
PHM 490 Clinical Applications III	1		
PHM 495 Clinical Applications IV	1		
Professional Elective.	1		

COURSE DESCRIPTIONS

The curriculum includes professional courses, which are numbered 300-599.

MEDICINAL CHEMISTRY

Medicinal chemistry is unique among the specialized areas of chemistry and pharmacy in that it requires a significant background in the biological sciences as well as a thorough understanding of chemistry. Areas of specialization for graduate study include the synthesis of new compounds of medicinal interest, the relationships between physical and chemical properties and biological activity, studies on the mechanisms of drug action, constituents of natural medicinal and poisonous agents, and pharmaceutical analysis of drugs in dosage forms and biological samples.

Required Professional Courses

PHM 305,306. Biochemical Basis of Disease I, II. 2 hours each.

Prerequisite for PHM 305: First year pharmacy students. Not open to students with credit in PHR 347 or 447.

Corequisite for PHM 305: PHM 340,347.

Prerequisite for PHM 306: PHM 305.

Corequisite for PHM 306: PHM 341,348.

PHM 305 consists of lectures and discussions concerning chemical factors affecting bioactivity of drugs, role of enzymes in biochemistry and disease, metabolism of biochemicals and drugs, and maintenance of acid/base balance. PHM 306 consists of lectures and discussions of lipids and prostaglandins; cholesterol and steroid hormones; biosynthesis of amino acids and nucleotides; nucleic acids, molecular genetics and biotechnology; immunology and targets for therapeutic intervention.

BEACH, BARTLETT

PHM 405, 406. Principles of Medicinal Chemistry I, II. 3 hours each.

Prerequisite for PHM 405: PHM 306.

Corequisite for PHM 405: PHM 441, 485.

Prerequisite for PHM 406: PHM 306.

Corequisite for PHM 406: PHM 442, 486.

PHM 405 encompasses drugs acting on the peripheral nervous system and peripherally acting hormones and antihormones, structure-activity relationships; mechanisms of action; storage and chemical stability reactions.

Central nervous system drugs, including their physio-chemical properties, structure-activity relationships, and toxicities, side effects, and drug interactions are discussed in PHM 406.

RUENITZ, TAYLOR, W.

Elective Courses

PHR 504. Abused Drugs. 3 quarter hours.

Prerequisite: First year pharmacy student.

A discussion of the history, abuse, uses, effects, and detection of abused drugs.

STEWART, TACKETT

PHR 511. Historical Perspectives of Drug Discovery. 3 quarter hours.

Prerequisite: Second Year Pharmacy Student or P.O.D.*

A study of selected historical events and personalities associated with the discovery of major drugs and drug classes.

STAFF

PHR 549. Radio-Pharmaceuticals. 3 quarter hours.

Prerequisite: Second Year Pharmacy Student.

Procedures and techniques involved in the handling and use of radioisotopes in pharmaceutical practice.

DUKE

PHARMACEUTICS

Pharmaceutics explores and defines the physical and chemical properties of pharmaceutical systems and the mechanisms by which medication from these systems may be made available for utilization by the body. Areas of specialization for graduate studies include pharmaceutics, pharmacokinetics, and industrial pharmacy.

Required Professional Courses

PHM 320. Quantitative Methods in Pharmacy. 3 hours.

Prerequisite: First year pharmacy student.

Corequisite: PHM 311.

Mathematical principles and quantitative methods utilized in the contemporary practice of pharmacy. Basic underpinnings of algebra, calculus, and statistics are integrated with the calculations required in the quantitative development and assessment of prescriptions, dosage forms, drug delivery systems, drug studies, and drug therapy modalities.

BOUDINOT, S. AND STAFF

PHM 420, 421. Principles of Pharmaceutics I, II. 3 hours each.

Prerequisite for PHM 420: PHM 320.

Corequisite for PHM 420: PHM 412.

Prerequisite for PHM 421: PHM 420.

Corequisite for PHM 421: PHM 413.

PHM 420 focuses on principles and basic concepts of biopharmaceutics and physical pharmacy as they are related to the formulation design, quality evaluation, bioavailability, and shelf-life of drugs in pharmaceutical dosage forms. PHM 421

focuses on principles of drug delivery systems and dosage form design, formulation, storage, and utilization.

CAPOMACCHIA, JUN, LU, PRICE

PHARMACOLOGY AND TOXICOLOGY

Pharmacology is the study of the action of drugs and chemicals on the living organism, the effects induced, and their therapeutic applications, whereas toxicology emphasizes the deleterious effects of chemicals on body organs and systems. As scientific disciplines, these related areas are based in the physical and biological sciences with particular emphasis on physiology and chemistry.

Required Professional Courses

PHM 340, 341. Anatomy and Physiology I, II. 3 hours each.

Prerequisite for PHM 340: First year pharmacy student or P.O.D. Not open to students with credit in PHR 349 or 649.

Corequisite for PHM 340: PHM 310, 347, 305.

Prerequisite for PHM 341: PHM 340. Not open to students with credit in PHR 350 or 650.

Corequisite for PHM 341: PHM 311, 348, 306.

PHM 340 focuses on anatomy and physiology of the human body with emphasis on the central nervous system, autonomic nervous system, cardiovascular and renal systems.

PHM 341 focuses on human anatomy and physiology with emphasis on the immune, endocrine, gastrointestinal and respiratory systems.

BUNCE, DALLAS, GREENSPAN, HARTLE, REIGLE, TACKETT

PHM 347, 348. Pathophysiology I, II. 3 hours each.

Prerequisite for PHM 347: First year pharmacy student or P.O.D.*

Prerequisite for PHM 348: PHM 347.

Corequisite for PHM 347: PHM 305, 340.

Corequisite for PHM 347: PHM 341, 306.

PHM 347: Fundamental mechanisms of human disease process, including manifestation, diagnosis and treatment. Emphasis on cardiovascular, renal, oncological, and neurological diseases. **PHM 348:** A fundamental knowledge of the human disease process including manifestations, diagnosis and treatment of endocrine, metabolic immunological and respiratory diseases. **BUNCE, WINECOFF, AND STAFF**

PHM 441, 442. Pharmacology I, II. 3 hours each.

Prerequisite for PHM 441: PHM 341, 348, 306.

Prerequisite for PHM 442: PHM 441.

Corequisite: PHM 405, 485.

Corequisite: PHM 406, 486.

PHM 441: Pharmacology of drugs which affect the autonomic nervous, cardiovascular, gastrointestinal, endocrine, and renal systems.

PHM 442: Pharmacology of anesthetics, analgesics, hypnotic agents, anticonvulsants, muscle relaxants, antiparkinsonism agents, antianxiety and anti-panic agents, antipsychotic agents, antidepressants, central stimulants, and drugs of abuse.

STAFF

Elective Courses

PHR 465/665. Coronary Heart Disease 3-5 quarter hours.

Prerequisite: PHR 350 or PHR 650 or P.O.D.

The pathophysiology of coronary heart disease, lipid triad and other risks for coronary heart disease. The vascular biology of the coronary artery and the effects of pharmacological, non-pharmacological and surgical treatments for coronary artery disease.

HARTLE

PHR 491/691 (VPH). Introductory Toxicology. 5 quarter hours.

Prerequisite: BCH 402/602 or BCH 802 or equivalent; and PHR 350 or VPH 516 or equivalent; and P.O.D.*

This course is an overview of basic principles in the field of toxicology. It includes principles of hazard and safety evaluation, dose-response relationships, pharmacokinetics and metabolism of chemicals, basic mechanisms of cellular injury, factors influencing toxicity, specialty areas and governmental regulatory policies.

BRUCKNER, DALLAS, HATCH

PHARMACY CARE ADMINISTRATION

Pharmacy care administration is concerned with both the administrative aspects of pharmacy practice and the pharmacist's role in serving the patient's health needs. To accomplish these purposes, undergraduate study in this area includes community and institutional pharmacy management, pharmacy law, health care systems, and patient behavioral topics.

Required Professional Courses

PHM 362. Administrative Sciences I 3 hours.

Prerequisite: First year pharmacy student.

Corequisite: PHM 310.

A colloquium of administrative topics designed to prepare pharmacy students for the professional practice environment. Topics include computer applications, financial analysis, and a brief introduction to statistics.

KOTZAN, MARTIN

PHM 375. Pharmacy and the U.S. Health Care System. 3 hours.

Prerequisite: First year pharmacy student.
The social, economic and political forces that shape the environment in which health care currently is being delivered in America and how this affects the practice of pharmacy.
POIRIER

PHM 390. Pharmacy Intercommunications 1 hour.

Prerequisite: First year pharmacy student.
Basic principles and processes associated with effective verbal, nonverbal, and written communication. Utilization of innovative technologies to enhance an interactive approach to patient counseling.
PERRI, PRITCHARD

PHM 565. Pharmacy Care Management. 3 hours.

Discussion and analysis of management principles in relation to community and hospital pharmacy management, including planning, organizing, motivation, controlling, and marketing.
PERRI, NICHOLS

PHM 568. Pharmacy Law. 1 hour.

Prerequisite: PHM 301 and third year pharmacy student
Laws and regulations that govern the practice of pharmacy, including those of patient care, professional conduct, business conduct, hospital practice, and the dispensing and provision of pharmaceuticals.
PRITCHARD

Elective Courses

PHR 590. Pharmacy Ethics 3 quarter hours.

Prerequisite: First year pharmacy Student.
This course deals with the problems faced by the community pharmacist as he/she strives to strike a balance between the demands of

economic competition on the one hand and the demands of professional ethics on the other.
STAFF

PHARMACY PRACTICE

Pharmacy practice offerings are designed to integrate and apply all prior course material to the assessment of patient problems, prescription practice and communication of knowledge to both prescriber and patient at professional baccalaureate and doctoral levels.

Required Professional Courses

PHM 301. Introduction to Pharmacy. 3 hours.

Prerequisite: First year pharmacy student or P.O.D.

Corequisite: PHM 310.

An overview of the United States Health Care System, drug development and distribution, and the pharmacist's roles in the system. Development of basic medication dispensing skills.

WARREN

PHM 394. Survey of Drug Information 1 hour.

Prerequisite: First year pharmacy student.
Corequisite: PHM 311.

Accessing and utilizing primary, secondary, and tertiary drug information resources, including standard reference texts, computer systems and journals. Emphasis will be placed on retrieval of information and communication of a response.

MCOMBS

PHM 485, 486. Disease Management I, II. 3 hours each.

Prerequisite for PHM 485: PHM 341 and PHM 348 and PHM 306.

Corequisite for PHM 485: PHM 405 and PHM 441 and PHM 412.

Corequisite for PHM 486: PHM 406 and PHM 442 and PHM 413.

Drug and non-drug treatment of diseases that occur in various human organ systems. The effect of a disease on the patient, non-drug therapy, and drugs used are covered.

CHISHOLM, COBB, REESE, SPRUILL, WARREN

PHM 580ABCD. 4 hours each.

Prerequisite: PHM 514, 526, 582, 568.

Experiential training in various off-campus sites, including community, hospital, and clinical pharmacy practice settings.

MORTON AND STAFF

PHM 582. Self-Care & Nonprescription Medications. 3 hours.

Prerequisite: Third year pharmacy students.

Corequisite: PHM 514.

Development of skills for patient counseling on the use of nonprescription medications and products related to self-care. Emphasis on patient consultation, product recommendation, triage, and verbal communications skills; topics in self-care and health maintenance.

McCOMBS

PHM 584. Physical Examination. 2 hours.

Two lecture hours per week for 12 weeks; 2 laboratory hours per week for 6 weeks.

Physical examination methods for evaluating and monitoring drug therapy. Emphasis on clinical pharmacotherapy of body systems.

LONGE AND STAFF

PHM 586, 587. Pharmacotherapy I, II. 4 hours each.

Prerequisite for PHM 586: PHM 486.

Prerequisite for PHM 587: PHM 486.

Corequisite for PHM 586: PHM 514

Pharmacotherapeutic principles and concepts applied to human disease states and conditions with emphasis on case-based problem-solving.

TAYLOR, LONGE

PHM 590ABCDEF. Required Pharmacy Clerkships. 4 hours each.

Prerequisite: PHM 587, 527, 575, 568, 582, 595.

Clinical practice in outpatient and inpatient settings with emphasis on pharmaceutical care.

MORTON AND STAFF

PHM 591ABCDE. Selective Pharmacy Clerkships. 4 hours each.

Prerequisite: PHM 587, 527, 575, 568, 582, 595.

Clinical practice in outpatient and inpatient settings with emphasis on pharmaceutical care.

MORTON AND STAFF

PHM 592. Clinical Seminar. 1 hour.

Prerequisite: Third and fourth year Doctor of Pharmacy students.

Develop and refine skills at making formal clinical presentations before peers.

HAWKINS

PHM 595. Advanced Drug Information and Drug Policy Management. 4 hours.

Prerequisite: PHM 394, 586.

Advanced concepts of drug information provision including newsletter publication, ADR monitoring systems, drug usage evaluation, formulary management, drug literature evaluation, and drug information retrieval and analysis.

MAY

Elective Courses

PHR 508. Parenteral Therapy 3-5 quarter hours.

Prerequisite: PHR 350, 434/634, 447, or P.O.D.*

Procedures for establishing and administering an IV admixture service, technical aspects of compounding and administering parenteral preparations and the principles of patient care, e.g., principles involved in diagnosis of imbalance, prescribing effective parenteral therapy and monitoring results.

COBB

PHR 510. Women's Health Care 3 quarter hours.

Prerequisite: PHR 349, 350 and second year pharmacy student.

This course emphasizes patient education of the medication and over-the-counter products used in obstetrics and gynecology.

McCOMBS

PHR 512. Survey of Clinical Drug Therapy in the Elderly. 3 quarter hours. Prerequisite:

Senior pharmacy student, graduate student, gerontology certificate student, P.O.D.*

A survey course on the use of drug therapies in a nursing home. Using clinical cases and direct patient contact, the student will develop a broad understanding of medical problems and their treatment.

LONGE

PHR 524. Institutional Pharmacy 3-5 quarter hours.

Prerequisite: Third year pharmacy student; graduate students by P.O.D.*

A study of the history, organization, structure, and operational policies and procedures of various types of health care institutions.

Consideration is given to the pharmaceutical services rendered in hospitals, extended care facilities, and nursing homes.

WARREN

PHR 528. Clinical Epidemiology. 3 quarter hours.

Prerequisite: Admission to Pharm.D. program.

Scientific basis for making and evaluating clinical decisions regarding normality/abnormality, diagnosis, risk factors, prognosis, treatment, prevention, and causation.

HAWKINS

PHR 551. Seminar in Medical Care Problems 1 quarter hour.

Prerequisite: Admission to Pharm.D. program.

An orientation to medical care problems for the doctor of pharmacy student.

HAWKINS

PHR 560. Clinical Seminar. 3-5 quarter hours. May be repeated for a maximum of 20 credit hours.

Prerequisite: Third year pharmacy student; graduate students by P.O.D.*

Lectures involve clinical case presentations including aspects of etiology, pathology, prognosis and treatment of disease.

Laboratories involve teaching rounds and case work-up at local hospitals.

STAFF

PHR 570. Clinical Clerkship 3-5 quarter hours. May be repeated for a maximum of 20 credit hours.

Prerequisite: Third Year Pharmacy Student; for graduate students: P.O.D.*

The clerkship involves instruction in pharmacy practice in a clinical setting under the direct supervision of a professional practitioner.

Clerkships are available in a number of community and institutional settings.

STAFF

PHR 574. Pharmacy Problem Solving I 5

quarter hours.

Prerequisite: Admission to Pharm.D. program.

A comprehensive presentation of basic research methods, study design, pilot and feasibility studies and techniques of evaluation and justification applied to patient situations.

STAFF

PHR 580. Clinical Toxicology 3 quarter

hours.

Prerequisite: Admission to Pharm.D. program.

General toxicologic management principles, as well as specific treatment approaches to selected poisons. Mechanisms of toxicity, expected clinical course, and appropriate therapy will be emphasized.

STAFF

PHR 594. Prescription Accessory Products

3 quarter hours.

Prerequisite: Second Year Pharmacy Student.

A study of accessory products related to prescriptions, sickroom needs, rehabilitation and convalescent equipment, surgical supports and other health-related appliances.

THOMAS

*Permission of department.

INTERDEPARTMENTAL COURSES

Required Courses

PHM 310, 311. Pharmacy Skills Lab I, II 2 hours each.

Prerequisite for PHM 310: First year pharmacy student.

Corequisite for PHM 310: PHM 301,340,362.

Corequisite for PHM 311: PHM 320,341,394.

Development of knowledge base, skills and techniques necessary to render effective pharmaceutical care in a variety of settings.
STAFF

PHM 380, 385. Clinical Applications I, II 1 hour each.

Prerequisite for PHM 380: First year pharmacy student.

Corequisite for PHM 380: PHM 340,347,305.

Corequisite for PHM 385: PHM 341,348,306.

Clinical applications of anatomy/physiology, pathophysiology, and biochemistry. Case presentations and various off-site experiential assignments to develop students' pre-clerkship skills.
McCALL, CHISHOLM

PHM 412, 413. Pharmacy Skills Lab III, IV. 2 hours each.

Prerequisite for PHM 412: PHM 311, 310.

Corequisite for PHM 412: PHM 485, 420, 418.

Corequisite for PHM 413: 419, 486,421.

Analysis, comprehension, and application of pharmaceutical product knowledge.
STAFF

PHM 418. Drug Therapy of Infectious Disease. 3 hours.

Prerequisite: PHM 306.

Corequisite: PHM 412.

Study of chemistry, spectrum of activity, place in therapy, stability, incompatibilities and toxicities of antibacterials, antivirals, and antibiotics.

BEACH, COOPER

PHM 419. Chemotherapy of Cancer. 2 hours.

Prerequisite: PHM 306.

Corequisite: PHM 413.

Etiology, prevention, and treatment of cancer in man. Emphasis on the mechanism, toxicity, and side effects of anticancer agents of various antineoplastic agents.

COOPER AND STAFF

PHM 480. Pharmacy Seminar. 1 hour.

Prerequisite: Second year pharmacy student.

Presentations and small group discussions with emphasis on professionalization and lifelong personal and professional learning.

OZBURN

PHM 490, 495. Clinical Applications III, IV. 1 hour each.

Corequisite for PHM 490: PHM 485, 441, 405.

Corequisite for PHM 495: PHM 406, 442, 486, 413.

Clinical applications of medicinal chemistry, pharmacology, and therapeutics. Case presentations and various off-site experiential assignments to develop students' pre-clerkship skills.

COBB, THOMAS

PHM 514. Pharmacy Skills Lab V. 1 hour.

Prerequisite: PHM 413.

Corequisite: PHM 586, 582.

Creation and demonstration of individual dosage regimens designed by integrating patient presenting conditions and pharmacotherapeutic considerations.

STAFF

PHM 526. Clinical Pharmacokinetics I 3 hours.

Prerequisite: 421, 442.

Basic pharmacokinetic concepts and the design and monitoring of therapeutic drug regimens. Emphasis on learning how to analyze and interpret patient specific drug concentration-time data.

WHITE AND STAFF

PHM 527. Clinical Pharmacokinetics II. 3 hours.

Prerequisite: PHM 526.

Nonlinear pharmacokinetics and effects on therapeutic drug regimens; emphasis on drug and disease-specific case studies.

WHITE AND STAFF

Elective Courses

PHR 498H. Directed Study and/or Projects (Honors). 5 quarter hours.

Prerequisite: Honors Student in Pharmacy.

This course affords Honors students the opportunity to engage in individual study, reading or projects under the direction of a project director.

STAFF

PHR 499H. Honors Thesis 5 quarter hours.

Prerequisite: Honors Student in Pharmacy.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

STAFF

PHR 521/721. Special Topics in Pharmacy

3-5 quarter hours. May be repeated for a maximum of 20 credit hours.

A study of specialized pharmaceutical systems, processes and techniques, including assignment of current literature and student presentations.

STAFF

PHR 598. Undergraduate Research Problem

3-5 quarter hours. May be repeated for a maximum of 20 quarter credit hours.

Prerequisite: Second Year Pharmacy Student.

An introduction to research. The course is designed to acquaint the student with the techniques of research. A problem will be assigned, and the student will be expected to do library and lab work necessary to prepare an acceptable report.

STAFF

*Permission of department.

