BULLETIN Semester System

BULLETIN/CATALOG 1975-1976

Samford

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Audit Students

Qualified students who do not desire college credit may audit a course with the consent of the professor and by paying the required audit fee. Auditing is permitted on a space-available basis. IMPORTANT: Under no circumstances, will an auditor be permitted to take examinations or to pay the difference in tuition and get credit for a course.

Admissions and Retention

The University reserves the right to deny admission to anyone without explanation. In addition the University reserves the right to refuse without explanation to issue a registration permit to any student.

Room Reservation Applications

A $25 room deposit is required when applying for a room in the residence halls. The application for a room should accompany the application for admission.

A room reservation is not dated and processed until a student is accepted for admission. The room reservation fee will be refunded if an application for admission to the University is not accepted. See page 12 for refund policy.

Deadline for Complete Applications

Applications must be completed and received by the Office of Admissions one week before the term begins.

Credit By Examination

Credit may be earned through the College Level Examination Program (CLEP) and Advanced Placement Examinations of the College Entrance Examination Board.

Degrees and Requirements for Degrees

Samford University grants fifteen degrees as follows:

Associate of Science in Nursing (A.S. in Nu.)
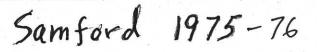Bachelor of Arts (A.B.)
Bachelor of Music (B.M.)
Bachelor of Science (B.S.)
Bachelor of Science in Business Administration (B.S. in B.A.)
Bachelor of Science in Education (B.S. in Ed.)
Bachelor of Science in Nursing (B.S. in Nu.)

Bachelor of Science in Pharmacy (B.S. in Pha.)
Doctor of Jurisprudence (J.D.)
Master of Arts (M.A.)
Master of Business Administration (M.B.A.)
Master of Music (M.Mus.)
Master of Music Education (M.Mus.Ed.)
Master of Science (M.S.)
Master of Science in Education (M.S. in Ed.)

The requirements for the Bachelor of Arts degree and the Bachelor of Science degree are basically the same. Students who have majored in art, English, foreign languages, history, journalism, music, religion and philosophy, psychology, sociology, or speech and dramatic arts are usually awarded the Bachelor of Arts degree. Those who have majored in biology, chemistry, health and physical education, home economics, mathematics, or physics are usually awarded the Bachelor of Science degree.

The B.M., the B.S. in Pha., the B.S. in B.A., the B.S. in Ed., the B.S. in Nu., the M.B.A., the M.Mus., the M.Mus.Ed., the M.S. in Ed., and the J.D. are professional degrees conferred upon students who have completed closely prescribed courses of study varying in duration and in the number of semester hours of credits required. Students in those professional divisions should consult the appropriate dean for details of their degree requirements as early as possible.

Regardless of academic achievement a student on disciplinary probation may not graduate from Samford University until the probation has been removed.

The Degree With Honors Program

The Honors Program is divided into two parts: the Honors Program for lower level students and the Honors Program for upper level students. Lower level students take honors seminars for each semester of their first two years at Samford. The first semester seminar introduces the various disciplines and their approaches to learning. In the second semester, students utilize the expertise they gained the first semester to explore, under the guidance of a chosen professor, a topic or problem of special interest to them. During the sophomore year, each student works on a specific project and is under the supervision of a professor of his choice.

Honors students take at least four regular courses for honors credit

of "J" designated courses. If he wishes to do so, the student may participate in three or four interterms.

The main emphasis and primary intent is to give the student a wider understanding of his world, a richer experience in integrating knowledge drawn from a variety of specialties, and a deeper consciousness of the relevance of his studies to his life and career. It is hoped that the absence of customary grading procedures in many programs will stimulate the exploration of subjects a student might otherwise avoid and also encourage the pursuit of knowledge and the development of latent talents.

Cooperative Student Exchange Program

Samford University cooperates with the University of Alabama in Birmingham in a student exchange program designed to expand the educational opportunities for students at both institutions. This arrangement affords Samford students the opportunity to enroll in a variety of courses at the University of Alabama in Birmingham. Credit for work taken at UAB will be recorded as if earned at Samford University and will not be treated as transfer credit.

Students who propose to take courses at UAB must obtain approval from the Vice President for Academic Affairs. Registration for these courses will be a part of the regular Samford University registration procedure and students will pay tuition for these courses in the usual manner.

General Requirements for the Bachelor's Degree

To earn a bachelor's degree, 128 semester hours must be completed with an average grade of C. This means that the number of quality points earned in all colleges must equal the number of hours attempted in all colleges attended. Not more than an aggregate of 8 hours in music ensembles, drama participation, and physical education activity courses may apply toward the 128 hours required for graduation.

At least 40 semester hours of credit must be earned in junior and senior level courses, and the last thirty-two semester hours must be earned at Samford University. Every candidate for a degree should file with the Registrar an application for a record check not later than the end of his junior year. It is the responsibility of the student to see that all graduation requirements are met.

1. General Curriculum Requirements

In order to provide quality education, Samford University has certain basic general curriculum requirements common to all undergraduate

student complete all of the requirements except FINE ARTS in the f man and sophomore years.

2. January Term Requirements

Each Samford student is required to attend at least two interterms a pass at least six (6) semester hours in January "J"-designated co as a part of his graduation requirements.

Transfer students who enter Samford with 32 or more semester credit will be required to pass only three (3) semester hours of Ja "J"-designated course work. Transfer students who enter with more 90 semester hours credit will be excused from this requirement.

3. Honors at Graduation

Students earning a grade point average of 2.4 are graduated cum l those earning grade point average of 2.7 are graduated magna laude; and those with a grade point average of 2.9 are graduated su cum laude.

4. Additional Degrees

A student who has been graduated with the A.B. or the B.S. degree not thereafter receive the other of these two degrees. This require does not apply to the B.M., the B.S. in Pha., the B.S. in B.A., or the in Ed. degrees.

General Requirements for the Associate of Science Degre

To earn the Associate in Science degree in nursing 69 semester h must be completed with an average grade of "C". Transfer student required to complete 23 semester hours of resident credit in ge education courses. There is no "J" designated course requiremen this degree.

The Grading System

In Samford University grades are indicated by the symbols A, B, E, F, and I.

A represents the highest proficiency in ability and application.

B represents ability and achievement of a high but second order

C is the grade given to the student who shows average ability or m an average achievement.

D is the grade given to a student whose record throughout the c is below the average. Many colleges decline to accept transfer cre

Department of

MATHEMATICS (Ma), ENGINEERING (Eg), AND COMPUTER SCIENCE (CS)

PROFESSOR PEEPLES, Head
PROFESSOR WHEELER
ASSOCIATE PROFESSORS CROCKER and CHEATHAM
ASSISTANT PROFESSORS HART (Emeritus), YEAGER, and KELLY
INSTRUCTOR HUDSON

The Department subscribes to the general purposes and objectives of the University and endeavors to cooperate with other departments in the development of Christian character and scholarship. In addition, the Department of Mathematics encourages students of mathematics to achieve the following goals:

1. To acquire the ability to use the language of mathematics effectively, including the ability to write and speak ideas involving mathematical terms, to read technical manuscripts with speed and understanding, and to listen intelligently.

2. To attain an understanding of mathematics necessary for successfully meeting the complex demands of modern society.

3. To apply the principles of logic and reason to mathematics and to all areas of study.

4. To develop an understanding of mathematical theory in addition to skill in manipulation and problem solving.

5. To master the mathematics essential for a professional career.

Mathematics 103, 201, 202, and 203 are required for a major or minor in mathematics. In addition, the minimum requirement of at least twelve hours for a major or six for a minor selected from junior and senior courses must be satisfied. All mathematics majors and minors are expected to acquire proficiency in Fortran Computer language.

Pre-medical and pre-dental students and students whose area of concentration is pharmacy, chemistry, physics, business administration, or engineering are subject to specific requirements in mathematics and should consult with the head of the department concerned.

Candidates for the Bachelor of Science degree should take algebra followed by trigonometry unless special courses are required by the major department. Special courses (Mathematics 111, General Elementary College Mathematics, and Mathematics 205 Statistics) are recommended for the Bachelor of Arts degree. Students planning to receive a

secondary teacher's certificate with a major or minor in Mathematics should take Mathematics 301, College Geometry.

Graduate students should consult with the department head to determine their requirements. Only those courses numbered 400 or above can be counted for graduate credit.

MATHEMATICS (Ma)

100. INTERMEDIATE COLLEGE ALGEBRA. This course is designed primarily for freshmen whose curriculum requirements include college algebra, but whose grade on the entrance test does not permit their registration for 101. This course does not satisfy any mathematics requirement for graduation at Samford University. Credit, three hours.

101. COLLEGE ALGEBRA. Prerequisites: Ma 100, or one year of high school algebra and a satisfactory score on the entrance test. Credit, three hours.

102. TRIGONOMETRY. Prerequisites: Plane Geometry and Mathematics 101 (or co-requisite). Credit, three hours.

103. ANALYTIC GEOMETRY. Prerequisites: Mathematics 101 and 102, or a satisfactory score on entrance test. (This course is usually offered as a combined course with Mathematics 201.)

108. MODERN MATHEMATICS FOR BUSINESS DECISIONS. Prerequisite: Mathematics 101. Credit, three hours.

111. GENERAL ELEMENTARY COLLEGE MATHEMATICS. This course is designed for those studying in the humanities, religious education, and certain social science fields as well as those working toward a teachers certificate in elementary education. This course emphasizes the philosophy, history, logic, and cultural values of modern mathematics in an attempt to enable the student to read, write, and speak effectively the language of mathematics. Credit, three hours.

112. MATHEMATICS FOR ELEMENTARY TEACHERS. Prerequisite: Mathematics 111. Credit, three hours. Satisfies three hours of Mathematics graduation requirements for elementary teachers only.

201. DIFFERENTIAL CALCULUS. (This course is usually offered as a combined course with Mathematics 103.) Credit, three hours.

202. INTEGRAL CALCULUS. Credit, three hours.

203. INTERMEDIATE CALCULUS. Credit, three hours.

205. STATISTICS. Designed to present the statistics needed to understand factual information as well as probability decision making in to

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a major or minor in Mathematics
 Geometry.

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day's complex civilization. Prerequisites: Mathematics 101 or 111. Credit, three hours.

301. COLLEGE GEOMETRY. Credit, three hours.

302. DIFFERENTIAL EQUATIONS. Prerequisite: Mathematics 202. Credit, three hours.

304. LINEAR ALGEBRA. Credit, three hours.

305. APPLIED MATHEMATICS FOR PHYSICS AND ENGINEERING. Prerequisite: Mathematics 202. Credit, three hours.

400. THEORY OF NUMBERS. An introduction to the theory of numbers through a study of divisibility, congruences, quadratic reciprocity, Diophantine equations, factorization, and algebraic numbers. Credit, three hours.

402. MODERN ABSTRACT ALGEBRA. An introduction to abstract algebra by discussing properties of sets, semigroups, monoids, groups, rings, integral domains, and fields. Prerequisites: Mathematics 304 or 400. Credit, three hours.

405. SPECIAL FUNCTIONS. Series solution of differential equations, Bessel functions, orthogonal polynomials, Legendre functions, Mathieu functions, boundary value problems. Prerequisite: Mathematics 302. Credit, three hours.

408. MATHEMATICS SEMINAR. For honors thesis or special reading. Credit, one to nine hours, maximum three hours each course.

409-410. MATHEMATICAL PROBABILITY AND STATISTICS. Probability, discrete and continuous random variables, expected values and moments, special distributions, sampling, point estimation, multivariate normal, sampling distributions, tests of hypotheses, regression and linear analysis, experimental design, and non-parametric methods. Prerequisite: Mathematics 202. Credit, three hours each course.

411. NUMERICAL ANALYSIS. Finite differences, interpolations, differentiation and integration, Lagrangian formulas, solutions of equations and systems of equations, and curve fitting. Prerequisite: Mathematics 203. Credit, three hours.

412. NUMERICAL SOLUTION OF DIFFERENTIAL EQUATIONS. A study of the application of numerical procedures to both ordinary and partial differential equations including the study of existence and convergence. Prerequisite: Mathematics 203. Credit, three hours.

419. ADVANCED CALCULUS — FUNCTIONS OF ONE VARIABLE. Ele-

ments of set theory, topology of the real line, functions, sequences, series, continuity, differentiation, and the Riemann integral. Prerequisite: Mathematics 203. Credit, three hours.

420. ADVANCED CALCULUS—FUNCTIONS OF SEVERAL VARIABLES. Partial derivatives, differentials, Jacobians, multiple integrals, and line and surface integrals. Prerequisite: Mathematics 203. Credit, three hours.

421. GENERAL TOPOLOGY. Elementary set theory, topological spaces, including metric spaces, subbases for topology, connectedness, compactness, continuity, homeomorphisms, and topological invariance. Credit, three hours.

GRADUATE COURSES

500. PARTIAL DIFFERENTIAL EQUATIONS. A study of the one-dimensional wave equation, linear second-order partial differential equations in two variables, some properties of elliptic and parabolic equations, separation of variables and Fourier series, and non-homogeneous problems. Prerequisite: Mathematics 302. Credit, three hours.

501-502. ABSTRACT ALGEBRA. A continuation of the study of sets, semigroups, monoids, groups, rings, ideals, integral domains and fields with emphasis on homomorphisms and decomposition theorems and includes an introduction to Galois Theory. Prerequisite: Mathematics 402. Credit, three hours each semester.

503. THEORY OF FUNCTIONS OF A REAL VARIABLE. Further study of series including uniform convergence, an introduction to Lebesgue measure and the Lebesgue integral and comparison of the Lebesgue and Riemann integrals. Prerequisite: Mathematics 419. Credit, three hours.

504. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Analytic functions, transformation and mapping, complex integration, power series, residues and poles, conformal mapping, and additional theory of functions. Prerequisite: Mathematics 419. Credit, three hours.

505. THEORY OF ORDINARY DIFFERENTIAL EQUATIONS. Linear and non-linear second and higher order systems, the existence and the uniqueness of a solution of the initial value problem, extension of trajectories, Poincare method, singular solutions, stability and perturbations of periodic solutions. Prerequisite: Mathematics 302. Credit, three hours.

506. ADVANCED MATHEMATICAL STATISTICS. A special course in statistics to meet the needs of students planning to work toward a thesis in statistics. Prerequisite: Mathematics 410. Credit, three hours.

metric spaces and metrization theorems, product spaces and quotient spaces, coninua, topological semigroups, groups, rings, and vector spaces, rings of continuous functions, homotopy theory, topological dimension theory. Prerequisite: Consent of instructor. Credit, three hours.

508. THEORY OF MATRICES. A study of vector spaces, linear equations, transformations, congruence, bilinear and quadratic forms, Hermitian forms, polynomials over a field, Lambda matrices, canonical forms. Prerequisite: Mathematics 304. Credit, three hours.

509. MODERN CONCEPTS OF MATHEMATICS FOR SECONDARY SCHOOL TEACHERS. A course designed to present the modern approaches of mathematics to secondary teachers. This course covers several areas of mathematics. Credit, three hours.

510-511. SEMINAR. Credit, three hours each semester.

512. THESIS. Credit, one to six hours.

513. HIGHER GEOMETRY. A study of geometry based on Klein's Erlanger Program, which classifies geometries according to their transformation groups. Emphasis placed on analytical methods. Credit, three hours.

514. MODERN GEOMETRY. A survey of modern geometries including hyperbolic, parabolic and elliptic geometries. Emphasis on synthetic methods. Credit, three hours.

ENGINEERING (Eg)

A minor in engineering may be obtained by successfully completing six courses from Engineering 102, 103, 105, 107, 200, 203, 207; and three courses on the advanced level selected from Engineering 300, 302, 304, 306, and 308.

Most of the Engineering courses are taken at the University of Alabama in Birmingham through the cooperative program with that University.

102. ENGINEERING DRAWING I. An introduction to the principles and practices involved in construction of engineering drawings. Credit, two hours.

103. ENGINEERING DRAWING II. A continuation of Engineering 102. Descriptive Geometry is included in this course. Prerequisite: Engineering 102. Credit, two hours.

107. SURVEY OF ENGINEERING. Prerequisite: Mathematics 101 (Co

207. PRINCIPLES OF DIGITAL COMPUTERS. See Computer Science 207.

300. MATERIALS OF ENGINEERING. Prerequisites: Chemistry 111, Mathematics 103 and 201 and Physics 203 with a co-requisite of Mathematics 102 and Physics 204. An introductory course to the physical properties of engineering materials and basic concepts of phase information. Credit, three hours.

301-302. ELECTRICAL ENGINEERING. See Physics 330.

303. THERMODYNAMICS. See Physics 430.

304. ENGINEERING MECHANICS: STATICS. Prerequisites: Mathematics 201, Physics 203 (Co-requisite: Mathematics 202). Topics of study include laws of equilibrium, friction, simple trusses, centroids, and moment of inertia. Credit, three hours.

307. ELECTRONICS. See Physics 334. Credit, four hours.

308. ADVANCED COMPUTER PROGRAMMING. See Computer Science 308.

408. ADVANCED ELECTRONICS. See Physics 334.

COMPUTER SCIENCE (CS)

207. PRINCIPLES OF DIGITAL COMPUTERS. Included in the course will be the use of flow charts, coding, programming in machine language, and programming using compilers such as Fortran. Prerequisite: Mathematics 102, 108, or 205. Credit, three hours.

308. ADVANCED COMPUTER PROGRAMMING. Prerequisite: Computer Science 207.

Department of

PHYSICS (Ph)

PROFESSOR MORTON, He
PROFESSOR ROBERDS
ASSISTANT PROFESSOR

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