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A CATALOGUE

OF THE

COLLEGE OF ARTS AND SCIENCES

1955-1956

UNDERGRADUATE SCHOOL

1955-56

# Georgetown University



ONE HUNDRED AND SIXTY-SIXTH YEAR



April, 1955

WASHINGTON, D. C.

THIRTY-SEVENTH AND O STREETS

Northwest

ADAMS 2-7000

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1955-56

DEGREE REQUIREMENTS

The College reserves the right to advance the requirements regarding admission, to change the arrangement of courses, the requirements for graduation, degrees, tuition fees and other regulations affecting the student body. Such regulations will govern both new and old students and shall be effective whenever determined by the College.

Such changes will be considered effective and an integral part of this catalogue after notice of the change has been posted on the main Bulletin Board of the College for twenty-four hours. This places on each student the responsibility of keeping himself informed of the content of all notices so promulgated.

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1. In order to receive the College degree, a student is required to complete successfully all required courses as well as 30 to 36 credits in his elective fields. A credit (semester hour) represents one hour per week for one semester, except when one class period is conducted in the style of a conference or seminar, in which case fewer credits are allowed. In laboratory work two hours are estimated as the equivalent of one lecture period.

2. At the time appointed by the Dean, before the end of the sophomore year,\* each student is obliged in a conference with his student advisor to determine the field of his major elective for the ensuing two years. In this decision the main factor is not the student's desires, but his prospective vocation in life, and, proximately, his choice of a graduate or professional school which he will enter after he has received his bachelor's degree. Hence he will choose those courses that are prerequisites for admission to such schools, or at least give him a firm foundation for his future studies.

In all cases it is plainly understood that whatever a student's major may be, he is obliged to follow the prescribed courses of Philosophy and Science.

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3. The major program includes the required courses as specified in the curricula on Page 43, and 30 to 36 credits in elective courses; the distribution of these elective credits is at the discretion of the Chairman of the major Department. The Department may include for the major program assigned investigation in the designated field, the writing of a thesis of 3,500 words on a subject approved by the head of the Department. At the end of the Senior year, each candidate for a degree must pass a comprehensive examination in his major field.

4. Graduation honors and rank in class are awarded and determined

\* In the B.S. Course, however, a group election must be made prior to Registration in the Freshman year. The course is divided into three major groups, namely, Biology, Physics or Mathematics, and Chemistry.

on the student's four-year record on the basis of a Quality Point Index computed each year. *Cum laude* requires a four-year average of 2.50; *magna cum laude* requires an average of 2.85; and *summa cum laude* requires an average of 3.00.

TYPICAL ELECTIVE PROGRAMS

BIOLOGY MAJOR

Junior

Bio. 105, 106: Comparative Anatomy of the Chordates  
Chm. 103, 104: Organic Chemistry

Senior

Bio. 107, 108: Normal Physiology  
Bio. 109, 110: Vertebrate Embryology; Animal Histology

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MEDIAEVAL CIVILIZATION MAJOR

Junior

Gov. 187, 188: Political Ideas and Institutions  
Hst. 161, 162: Church and State  
Hst. 103, 110: Middle Ages, Protestant Revolt

Senior

Hst. 105, 106: Late Mediaeval and Renaissance Europe  
Cls. 223, 224: Mediaeval Intellectual Life; Political Theory, Plato to Ockham  
Hst. 209, 210: Seminar in Problems of Mediaeval History

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AMERICAN CIVILIZATION MAJOR

Junior

Gov. 189, 190: American Political Ideas  
Hst. 137, 138: Special Topics in U. S. History  
Hst. 151, 152: American Constitutional History

## Senior

Hst. 171, 172: U. S. Foreign Policy  
 Eng. 121, 122: American Literature  
 Phl. 223, 224: Seminar in American Philosophical Movements

## MAJOR ELECTIVE GROUPS

GROUP I: Biology	GROUP VII: History
GROUP II: Chemistry	GROUP VIII: Mathematics
GROUP III: Classics-Philosophy	GROUP IX: Military Science or Air Science
GROUP IV: Economics	GROUP X: Modern Languages
GROUP V: English	GROUP XI: Philosophy
GROUP VI: Government	GROUP XII: Physics

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## EXPENSES

All fees, unless otherwise noted, are payable in advance or on the day of registration, to the Office of the Treasurer, Ryan Administration Building, Georgetown University, Washington 7, D. C.

## SIXTEEN WEEK SEMESTER

Tuition .....	\$325.00
Student Activity Fee .....	25.00
Biology, per laboratory credit .....	7.50
Chemistry, per laboratory credit .....	10.00
Physics, per laboratory credit .....	7.50
Language or Statistics laboratory fee .....	5.00
Room @ \$2.00 per day .....	\$224.00
Board @ \$2.50 per day .....	280.00
Health Service Fee, per semester .....	10.00
Domesday Booke, per year .....	10.00
Laundry (Optional), per semester .....	40.00

## FEES

Matriculation Fee (payable once) .....	\$ 10.00
Late Registration .....	10.00
Condition Examination or Late Examination Fee per subject .....	5.00
Change of Course .....	2.00
Change of Curriculum .....	10.00
Deferred Payment Fee, per semester .....	5.00
Extra courses, per semester credit .....	20.00
Graduation Fee .....	15.00
Extra Transcript of Record .....	1.00

Every student taking a Laboratory Course is chargeable for breakage, damage, and loss of apparatus.

Because of minor variations in courses, the exact charges assessed against each student cannot be known until Registration, hence, *bills cannot be sent in advance*. A complete breakdown of charges is, however, presented to each student at Registration. *This is the bill for the semester, no other bill is sent home.*

It is suggested that the student be given a check *payable to Georgetown University* (this eliminates the danger of a lost blank check) on which the student can insert the amount due as shown on the bill (or one-third that amount if the Deferred Payment Plan is to be used).

Banking facilities are available to students in good standing for cashing checks for small amounts on out-of-town banks.

### DEGREE CURRICULA

BACHELOR OF ARTS

Freshman

	Credits
English 1, 2 .....	6
Religion 1, 2 <sup>a</sup> .....	2
Latin 1, 2, or 11, 12 .....	10
Greek, or Math. 3, 4 .....	8-6
Public Speaking 7, 8 .....	2
Modern Language <sup>1</sup> .....	6
ROTC <sup>2</sup> .....	4
32-38	

Sophomore

English 3, 4 .....	6
Religion 3, 4 <sup>a</sup> .....	2
Latin 13, 14 .....	8
Greek, or Math. 33, 34 .....	6
Hist. 3, 4 .....	6
Science or Mod. Lang. 3, 4 <sup>1</sup> .....	6-8
ROTC <sup>2</sup> .....	4
34-40	

BACHELOR OF SCIENCE

(Biology)

Freshman

	Credits
English 1, 2 .....	6
Religion 1, 2 <sup>a</sup> .....	2
Chemistry 3, 4 .....	8
Mathematics 1, 2 .....	6
Modern Language <sup>1</sup> .....	6
Physics 3, 4 .....	8
ROTC <sup>2</sup> .....	4
36-40	

Sophomore

English 3, 4 .....	6
Religion 3, 4 <sup>a</sup> .....	2
Hist. or Md. Lang. 3, 4 <sup>1</sup> .....	6
Chemistry 8 .....	4
Biology 1, 2 .....	8
Public Speaking 7, 8 .....	2
ROTC <sup>2</sup> .....	4
28-32	

BACHELOR OF SCIENCE

(Social Science)

Freshman

English 1, 2 .....	6
Religion 1, 2 <sup>a</sup> .....	2
Geog. 1, 2 .....	6
History 3, 4 .....	6
Mathematics 1, 2 .....	6
Public Speaking 7, 8 .....	2
Modern Language <sup>1</sup> .....	6
ROTC <sup>2</sup> .....	4
34-38	

Sophomore

English 3, 4 .....	6
Religion 3, 4 <sup>a</sup> .....	2
Hist. 5, 6 .....	6
Government 1, 2 .....	6
Economics 3, 4 .....	6
Mod. Lang. <sup>1</sup> or Science .....	6-8
ROTC <sup>2</sup> .....	4
32-38	

BACHELOR OF SCIENCE

(Chemistry, Mathematics, Physics)

Freshman

English 1, 2 .....	6
Religion 1, 2 <sup>a</sup> .....	2
Chem. 5, 6, or Physics 5, 6 .....	10
Math. 5, 36 .....	6
Public Speaking 7, 8 .....	2
History 3, 4, or ROTC <sup>2</sup> .....	4-6
Modern Language <sup>1</sup> .....	6
36-38	

Sophomore

English 3, 4 .....	6
Religion 3, 4 <sup>a</sup> .....	2
Mathematics 37, 38 .....	6
Chem. 3, 4, or Physics 3, 4 .....	8
Chem., Math., or Physics .....	6 or 8
Mod. Language <sup>1</sup> or Elective .....	6
ROTC <sup>2</sup> .....	4
34-40	

1955-56

ALL DEGREES

Junior		Senior	
	Credits		Credits
Religion 5, 6 <sup>a</sup> .....	2	Religion 7, 8 <sup>a</sup> .....	2
Logic .....	3	Psychology .....	6
Epistemology .....	3	Ethics .....	8
Ontology .....	3	Theodicy .....	2
Cosmology .....	3	Electives .....	18
Electives .....	12-18		
History 3, 4, <sup>b</sup> or Science, <sup>c</sup> or Elective <sup>d</sup> .....	6		
	<hr/>		<hr/>
	32		36

<sup>1</sup> Those who take the introductory foreign language in the Freshman year, are required to continue with the same modern language in the Sophomore year.

<sup>2</sup> ROTC is optional.

<sup>3</sup> Non-Catholic students are not required to take Religion courses, but may be required to take electives to satisfy minimum requirements.

<sup>4</sup> Hist. 3, 4 or an equivalent course must be taken by A.B. students.

<sup>5</sup> For Chem. Math. Physics Majors who elect Freshmen ROTC.

<sup>6</sup> For A.B. and BS(SS) who take two years of Modern Language.

GEORGETOWN-AT-FRIBOURG

By special arrangement with the University of Fribourg, Georgetown students will be able to fulfill all Junior Year requirements in Switzerland. Regular courses in Philosophy and Religion are available. Elective groups will be offered in Classics and Philosophy, Literature and Social Sciences. Special courses are given in French language and culture. Other modern languages may also be studied. Most of the courses will be given at the University by its regular staff. The principal language of instruction is French.

Georgetown-at-Fribourg is open to students who have completed their sophomore year in the College or the School of Foreign Service of Georgetown University. The grade of B or better in all subjects will be required of all applicants. Junior-level students of other colleges may be accepted when places are available, provided they meet all requirements and are recommended by responsible officials of their colleges.

Costs: Room, board and tuition at Fribourg for a full academic year, approximately \$1000.00

(This includes all fees and health insurance)

Transatlantic travel, round trip, from New York, approximately \$400.00 and up

Travel in Europe, optional, about \$500.00

Wherever possible arrangements will be made for group travel at lowest rates so as to realize all possible economies.

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# Georgetown 1955-56

## UNIVERSITY

## COLLEGE OF ARTS AND SCIENCES

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Professor LOCHER

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*American Nation: 1607-1860*

first foundations to the beginnings of  
merican Colonies, the Revolution, the  
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Dr. WALSH

*America, 1860-1912*

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political, social and intellectual devel-  
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Professor DURKIN

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Professor DURKIN

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Professor SULLIVAN

to the present. The "shirt sleeve"  
on of a neutral during the Napoleonic  
on of territory; Civil War diplomacy  
ustrialization; the Spanish-American  
as a great power; World War I, the  
America's entrance into World War  
of Eisenhower.

Professor BACON

175, 176. *The Political and Cultural History of the Far East*

A survey of the origins and development of the traditional civilizations of India, China, Japan and Southeast Asia. An analysis of the changes in those civilizations wrought during the past four centuries by contact with the West. The emergence of modern nationalism and nations in the Far East in the 20th century. Communism as a force in the contemporary Far East.

3 credits each semester

Professor HINTON

181, 182. *History of Russia*

To be given 1956-1957.

183, 184. *History of the Near and Middle East*

A survey of the history of the Eastern Mediterranean and Iranian worlds. The cultural and historical background of the area prior to the rise of Islam. The medieval struggle of the Christian and Muslim worlds. The rise of the Ottoman and the Safavid empires on the eve of the modern age and their encounter with the economic pressure from the West and the political pressure from the newly-risen Russian State. The rise of national particularisms in the Near and Middle East in the XIXth century. The downfall of the Ottoman and the Iranian Qajars after World War I.

3 credits each semester

Professor TOUMANOFF

211, 212. *Pro-Seminar in European History*

(For Senior honor students.)

3 credits each semester

Professor KEREKES

## DEPARTMENT OF MATHEMATICS

Professor SOHON (CHAIRMAN); Assistant Professors COSTELLO (LIBRARIAN), OLIPHANT (SECRETARY); Instructors FENNEL, HOULE, SAGGESE, ZALUBAS; Visiting Professor LANDRY.

For a Major sequence in Mathematics, courses 5, 36, 37, 38, 101, 102, 133 and 142 must be taken, together with at least 12 semester hours of Mathematics courses that are listed below with numbers greater than 100.

The candidate is required to present himself to the head of the Department or his delegate for a personal interview, and if it is thought that the student could pursue profitably an undergraduate major in Mathematics, he will be assigned a mentor whose duty it will be to assist the student in remedying the defects in his background, to show the student the best way he can develop the talents that are peculiar to him, to direct and approve his electives, to direct him in additional readings, and to supervise the writing of a detailed study on some assigned topic.

All freshmen are required to take six credits in Mathematics with the exception of A.B. students who elect Greek. Mathematics, Physics, or Chemistry majors will take course 5,36; A.B. students who elect Mathematics will take course 3,4; all other students will take either course 1,2 or 3,4.

1, 2. *Freshman Mathematics*

Charts and Graphs. The concept of Functions, Ratio, Proportion, Variation, Linear Equations and Relations, Quadratic Equations and Relations, Geometry of Triangles, Plane Trigonometry, Finance, Exponents, Logarithms, Growth, Probability, Statistics, Selected Topics in Modern Mathematics.

3 credits each semester

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**3, 4. College Algebra and Analytic Geometry**

Numbers and Operations, Functions and their Graphs, Variation, Inequalities, Locus of an Equation, Progressions, Logarithms, Plane Trigonometry, Complex Numbers, Theory of Equations, Plane Analytic Geometry, Probability, Investment, Determinants.

3 credits each semester

STAFF

**5. An Introduction to Analytic Geometry and Elementary Analysis**

A one semester course required of all Mathematics, Physics and Chemistry Majors in Freshman year. The material covered is a unified treatment of plane analytic geometry and the calculus of one variable as well as selected topics from college algebra.

3 credits

STAFF

**33, 34. Differential and Integral Calculus**

The topics considered in this course are: Differentiation of functions of a single variable, with applications: Curvature, Theorem of Mean Value with applications; integration of functions of a single variable; problems in volumes and areas, fluid pressure, center of gravity, moment of inertia, attraction, etc.; infinite series, expansion of functions, differentiation and integration of functions of several independent variables. Alternative to Greek in Sophomore A.B. Prerequisite, Math 3, 4 or their equivalent.

3 credits each semester

STAFF

**36. Analytic Geometry and Calculus, Part I**

A one semester course required of all Mathematics, Physics and Chemistry Majors in Freshman year. The material covered is a unified treatment of plane analytic geometry and the calculus of one variable. Prerequisite, Mathematics 5.

3 credits

STAFF

**37, 38. Calculus of Two or More Variables, Parts II, III**

A two semester course required of all Mathematics, Physics and Chemistry Majors in Sophomore year. The material covered is a unified treatment of solid analytic geometry and the calculus of two or more variables. Prerequisites, Mathematics 5, 36.

3 credits each semester

STAFF

**83, 84. The Ideas and Methods of Mathematics**

Year course open to all sophomores. The course is designed to give the student an understanding of the basic processes involved in most mathematical disciplines.

Minimizing the use of symbol manipulation and stressing the continuity of argument from a fixed system of postulates, the student becomes acquainted with some of the elementary theorems from various fields of higher mathematics. Subjects covered include the concept of number, the postulates of geometry, topology, topics from Modern Algebra, function and limit, Riemann's Integral, and trans-finite numbers. Prerequisite Math. 3, 4.

3 credits each semester

STAFF

**101, 102. Introduction to Higher Algebra**

Aim of Course: To introduce the undergraduate at an early stage to some of the simpler algebraic concepts of Modern Higher Algebra. Wherefore such topics as groups, rings, fields and domains are given equal place with the traditional material from the theory of equations and determinants.

Outline: Integers, finite induction, division, G.C.D. and congruences. Rational, Real, Complex Numbers and their representation. Groups, permutations, isomorphism, subgroups and cosets, rings, integral domains and fields, quotients in a field and polynomials over a field. Matrices over a field. Equivalents, linear dependence and rank. Determinants, normal subgroups and factor groups, homomorphisms, ideals in commutative rings.

3 credits each semester

Professor SOHON

**121, 122. Synthetic and Analytic Projective Geometry**

Projection and section; ideal elements; duality; Desargues' Theorem; harmonic sets; one dimensional projective transformations; conics; Pascal's and Brianchon's Theorems; cross ratio; metric properties of projective figures; homogeneous coordinates; (1,1) algebraic correspondence; cross ratio and harmonic ranges; conic locus and envelope; special forms; correspondence on a conic; analytical representations of quadrilaterals and quadrangles and properties.

3 credits each semester

Professor LANDRY

**133. Differential Equations**

Introductory notions, equations of the first order and first degree, equations of the first order and higher degree, singular solutions, applications to geometry and mechanics, linear equations with constant coefficients, applications.

3 credits

Professor COSTELLO

**136. Introduction to the Theory of the Complex Variable**

Complex numbers; fundamental definitions concerning functions; differentiation and integration; mapping with applications to elementary functions; transformations; infinite series; single and multiple valued functions. Prerequisite Math 5, 36, or 33, 34.

3 credits

Professor LANDRY

**142. Elementary Theory of Infinite Processes**

Aggregates, sequences and limits, infinite series, absolute convergence, uniform convergence, double series, infinite products, special developments.

3 credits

Professor COSTELLO

**151, 152. Elementary Mathematical Statistics**

This course introduces the student to some of the various applications of analysis to statistics. Subjects covered include frequency distributions of one variable, large sample theory of one variable, small-sample distributions, non-parametric methods, chi-square distributions, design and experiment. Prerequisite Math. 33, 34, or 36, 37, 38.

3 credits each semester

Professor OLIPHANT

**153, 154. Elementary Numerical Analysis**

The student is introduced to the modern numerical techniques for integration of differential equations, finite differences, interpolation, extrapolation, differentiation. During the year the student becomes familiar with the use of the desk digital computers and is introduced to the operation technique of electronic computers. Prerequisite, Mathematics 33, 34, or their equivalent.

3 credits each semester (Laboratory fee)

Professor OLIPHANT

**161. Vector Algebra**

Addition and multiplication of vector quantities with simple applications to geom-

etry and mechanics, the linear vector functions, formal properties of dyadics, rotations and strains, affine transformations, reduction of dyadics to canonical forms.  
3 credits

Professor SOHON

### 162. *The Calculus of Vectors*

Differentiation of vectors and dyadics with respect to scalars, geometry of the twisted curve, applications to kinematics, gradient, divergence, and curl line and surface integrals of Gauss and Green, the Newtonian potential function, the curvature of surfaces, curvilinear co-ordinates and introduction to Tensor Analysis.  
3 credits

Professor SOHON

## DEPARTMENT OF MILITARY SCIENCE AND TACTICS

*Lt. Col. BADEN, JR. (PMS&T), Major DUNNING, Major GETTMAN, Lt. McKEOWN; Sergeants BLOOM, CARR, MILLER, MURPHY, SMITH.*

The Reserve Officers' Training Course offered by Georgetown University and directed by commissioned officers assigned by the Department of Army, has as its primary aim the development of well trained officers for the Active Army and the Army Reserve.

A limited number of the graduates of the ROTC at Georgetown will be offered commissions in the Regular Army, while the remaining graduates will be offered commissions in the reserve components.

The Army ROTC unit at Georgetown offers a four year Branch General Military Science course. The Branch General Program offers the student an opportunity to request possible selection and subsequent assignment to one of the following arms or services: Armor, Artillery, Infantry, Adjutant General Corps, Army Security Agency, Chemical Corps, Corps of Engineers, Finance, Medical Service Corps, Military Intelligence, Military Police, Ordnance, Quartermaster, Signal or Transportation.

The ROTC instruction is divided into a Basic Course (Freshman and Sophomore years) for which eight (8) academic credits are authorized and an Advanced Course (Junior and Senior years) for which sixteen (16) academic credits are authorized. The enrollment in each course is for a period of two years. Having once enrolled in the Advanced Course, students are required to complete the course including summer camp, and accept a commission, if offered, as a pre-requisite to graduation.

Basic Course students are issued necessary uniforms, equipment, and texts at government expense. Enrollment in the Advanced Course is limited by a quota assigned periodically by the Department of Army. This quota is filled on a selective basis from those students who have completed successfully the Basic Course.

Advanced Course students are paid a commutation of subsistence and uniform allowance at a rate fixed by the Department of Army. At present each enrolled Advanced Course student receives 90c. per day subsistence payable on a monthly basis; and a total uniform allowance of \$100.00. Advanced Course students are required to attend summer camp usually at the end of their junior year.

Under the Selective Service Law, and subject to quota limitation, ROTC students may be granted ROTC draft deferments as long as they remain in good standing in both the academic and military course and their attendance is continuous except for authorized periods of non-attendance.

Students desiring to enroll in the ROTC at Georgetown University should apply for such enrollment at the time of actual matriculation. Credit for previous ROTC training may be granted by the PMS&T.

### Subjects

School of the Soldier .....  
Organization of the Army and  
Individual Weapons and Mark  
American Military History ..

TOTAL .....

### Subjects

School of the Soldier .....  
Crew Served Weapons and C  
Map Reading and Aerial Phot  
American Military History ..

TOTAL .....

### Subjects

Exercise of Command .....  
Military Teaching Methods ..  
Leadership .....  
Organization, Functions and V  
Communications .....  
Crew Served Weapons .....  
Small Unit Tactics .....

TOTAL .....

### Subjects

Exercise of Command .....  
Logistics .....  
Operations .....  
Personnel Management .....  
Service Orientation .....

TOTAL .....

## DEPARTMENT O

*Professors BELLEROSE, LANG (CH  
PAVIA; Instructors DESCOUZIS, LAF*

The Language Laboratory is an student attends the laboratory development in the teaching of recordings made by members of spoken word by engaging in re

### 1, 2. *Introductory*

The primary aim of this course is t of French as early as possible. The reading texts are introduced early in drills. Dictations and translations.

6 credits