Military Science minutes

1st yr Tactics = 1800

2nd yr Tactics 1350

3rd yr Tactics 3600

4th yr Mil. Art 47×85 = 3995

Ord + Gunn 7537.5

Tactics + Riding 33825

4057.580

Total min = 25,723 (4 yrs)

= 429 hrs

PROGRAM OF INSTRUCTION AND COURSE OF STUDIES.

(Since January 1, 1924)

80. Program of the course of instruction:

First term, September 1 to December 23; 95 periods with Saturday recitations and 80 periods without Saturday recitations.

Second term, January 2 to June 4; 130 periods with Saturday recitations and 109 periods without Saturday recitations.

Semi-annual examination, December 26 to 31.

Annual examination, June 5 to 12.

Academic day, 7.55 a. m. to 11.55 a. m. and 1.00 p. m. to 3.00 p. m.

Military exercises, all classes, from 3.15 p. m. to 4.15 p. m.

Supervised athletics, from 3.15 p. m. to 4.25 p. m.

of 1st yr group 5th

Class.	Subject.	Attendance.	Part.	Hours.
Fourth (1st year)	Mathematics	Whole class daily	Half	7.55 to 9.20
			Half	9.20 to 10.45
	Surveying	Alternates daily with Mathematics for last 80 periods of year with same sections and hours.		
	Gymnasium	Whole class daily, except Saturdays	Half	9.20 to 10.10
			Half	10.45 to 11.35
	Tactics	Whole class Saturdays	Half	9.20 to 10.10
			Half	10.45 to 11.35
	French	Half class daily, except Saturdays	Fourth	1.00 to 2.00
			Fourth	2.00 to 3.00
	English	Half class daily, except Saturdays	Fourth	1.00 to 2.00
		(Half classes alternate in attendance in French and English.)	Fourth	2.00 to 3.00
Third (2d year)	Mathematics	Whole class daily	Half	7.55 to 9.20
			Half	10.30 to 11.55
	History	Half class daily	Fourth	7.55 to 9.10
			Fourth	10.30 to 11.45
	French	Half class daily	Fourth	7.55 to 9.10
			Fourth	10.30 to 11.45
	Tactics	Replaces French with same sections and hours for 18 recitations; 10 beginning September 1; 8 ending June 4. (Half classes alternate in attendance in History and in French or Tactics.)		
	English	Half class daily, except Saturdays	Fourth	1.00 to 2.00
			Fourth	2.00 to 3.00
	Drawing	Half class daily, except Saturdays	Half	1.00 to 3.00
		(Half classes alternate in attendance in English and Drawing.)		
Second (3d year)	Natural and experimental philosophy.	Whole class daily	Half	7.55 to 9.20
			Half	10.30 to 11.55
	Laboratory	When ordered	Half	7.55 to 9.55
			Half	9.55 to 11.55
	Chemistry and electricity.	Whole class daily	Half	7.55 to 9.20
			Half	10.30 to 11.55
	Laboratory	When ordered	Half	7.55 to 9.55
			Half	9.55 to 11.55
	Spanish	Half class daily, except Saturdays	Fourth	1.00 to 2.00
			Fourth	2.00 to 3.00
	Drawing	Half class daily, except Saturdays	Half	1.00 to 3.00
	Tactics	Replaces Drawing for 30 periods from March 11. (Half classes alternate in attendance in Spanish and in Drawing or Tactics.)		
First (4th year)	Engineering	Whole class daily, (except Sept. 1 to Oct. 27, for Military Art.)	Half	7.55 to 9.20
			Half	10.30 to 11.55
	"	Twelve Saturday recitations, half class on alternate Saturdays for 24 Saturdays ending June 4	Fourth	7.55 to 9.10
			Fourth	10.40 to 11.55
	Military Art	Replaces Engineering for 47 periods from Sept. 1 with same sections and hours.		
	Ordnance and Gunnery.	Half class daily, except Saturdays	Fourth	7.55 to 9.10
			Fourth	10.40 to 11.55
	"	Six Saturday recitations, half class on alternate Saturdays for twelve Saturdays beginning September 1.	Fourth	7.55 to 9.10
			Fourth	10.40 to 11.55
	Economics and government.	Half class daily, except Saturdays	Fourth	7.55 to 9.10
			Fourth	10.40 to 11.55
	Law	Half class daily, except Saturdays	Half	1.45 to 3.00
	Tactics & riding.	Half class daily, except Saturdays	Half	1.45 to 2.45
	"	Half class Saturdays	Fourth	7.55 to 9.10
		(Half classes alternate in attendance in Law and Tactics and Riding or Hygiene.)	Fourth	10.40 to 11.55
	Hygiene	Replaces Tactics and Riding for 14 periods from Sept. 1	Half	1.45 to 2.45
	"	Drill for 16 periods from Oct. 1	Half	3.15 to 4.15
		(Riding periods are 50 minutes each. When recitation periods are substituted for lectures or practical exercises in the afternoon periods of the first class year, the class recites in fourths, 1.00 to 2.00 and 2.00 to 3.00; when demonstrations or applicatory instruction is substituted, the class recites in halves 1.00 to 3.00.)		

W. Point

1st yr Math

1st term

95 periods

85 min/per

8075 min = 134.6 hrs

2nd term 90 per

85 min

7650 = 127.5 hrs math

2nd term of 1st yrs

134.6 + 127.5 = 262.1 hrs math 1st yr (both terms)

2nd yr Math hrs

1st Sem

85 min/period

95 periods

8075 min = 134.6 hrs

2nd Sem

85 min/per

130 per

11050 min = 184.16 hrs

Total 2nd yr Math hrs

134.6 + 184.16 = 318.76

Total math hrs 262.10

318.76

580.86

W. Point 1925

From end of file in one sent by Maulden 1925 (file has more than 1 docum)

text "Precision of Measurements and Graphical Methods"—Goodwin, 1919 edition. In addition to the theoretical instruction, three or four laboratory exercises are presented in this subject.

General physics.—Seventy periods in all. The subjects of elementary mechanics, properties of matter, wave motion, sound and light, only, in general physics are assigned to this department. The text used is "General Physics"—Ferry—and the subjects enumerated are given to the extent they are covered in that text. In addition numerous original problems are presented and solved. Laboratory apparatus is used for the qualitative demonstration of practically every principle covered in these subjects. Numerous formal laboratory exercises are likewise given as a part of this course.

Upon completion of the advance and partial review of the above-described work a written general review of approximately 15 periods is given, followed by the semiannual examination. This completes the work of the first term.

SECOND TERM

Technical mechanics.—Seventy periods. The text used is "Technical Mechanics"—Maurer. The upper part of the class takes the entire text. The lower part of the class omits certain selected problems and portions of the text, including articles 53 to 58. Numerous original problems are presented in addition to those given in the text. In connection with this subject several laboratory exercises of a more or less advanced nature are presented.

Hydraulics.—Approximately 20 periods. The text used is "Textbook on Hydraulics"—Russell. The upper part of the class takes the entire text. The lower part of the class usually omits Chapter IX and certain of the more difficult problems.

Aerodynamics.—Fifteen periods. "The Airplane"—Bedell, is used as a text and is supplemented by various Air Service information circulars, aeronautical magazines, and reports of the Advisory Committee for Aeronautics. The entire text is taken, and is supplemented by approximately 40 original problems.

Astronomy.—Twelve periods. The text used is "An Introduction to Astronomy"—Moulton. This course is conducted as a combination reading and lecture course. A portion of each period is devoted to a lecture in which full use is made of astronomical slides. The remainder of the period is devoted to conferences and quizzes. The entire text is covered.

Upon completion of the advance and partial review of the work indicated above a written general review of approximately 12 periods is given, followed by the annual examination. This completes the work of the second term.

DEPARTMENT OF MATHEMATICS

THIRD AND FOURTH CLASSES

57. The course in mathematics begins with the fourth-class year and continues through the third-class year.

In the fourth-class year algebra is completed in alternation, first with geometry, then with trigonometry. Plane analytical geometry is begun.

In the third-class year plane and solid analytical geometry and descriptive geometry are completed in alternation. The calculus and least squares finish the course.

The course in algebra covers the entire subject as generally taught in college, but the student is expected already to have mastered elementary algebra to include the progressions and the solution of the quadratic equation. Elementary geometry includes the books that relate to the plane and those that relate to space, but the student is expected to have mastered the former. Trigonometry includes the complete solution of plane and spherical triangles. Analytical geometry includes the discussion of the general equation of the second degree in the plane and the particular forms of the equation of the second degree in space.

Descriptive geometry includes the orthographic projections of the right line, the plane, ruled surfaces and surfaces of revolution, tangent planes and intersection of surfaces. It also takes the subjects of shades and shadows, perspective, isometric projections and spherical projections.

The course in differential and integral calculus covers the ground of the usual college textbook, including briefly the subject of ordinary differential equations. The method of least squares, given to selected sections, includes the deduction of the facility curve, the formulæ for the error, and the distribution of error.

W. Point 1925

From end of file sent 1925 by Mendin (file has >1 documents)

Textbooks

Elements of Geometry.—Phillips and Fisher.	Elements of Analytical Geometry (Solid).—Smith and Gale.
Complete Secondary Algebra.—Fisher and Schwatt.	Coordinate Geometry.—Fine and Thompson.
Advanced Course in Algebra.—Wells.	Descriptive Geometry.—Church.
Elements of Plane and Spherical Trigonometry.—Crockett.	Linear Perspective.—Pillsbury.
Logarithmic Tables.—Newcomb.	Differential and Integral Calculus.—Granville.
Analytic Geometry (Plane).—Ziwet and Hopkins.	Integral Calculus.—D. A. Murray.
	Method of Least Squares.—Johnson.

Book of reference for mathematics, mechanics, engineering: The Engineering Manual, Hudson.

DEPARTMENT OF CHEMISTRY, ETC.

SECOND CLASS

58. This department embraces the subjects of chemistry, heat, and electricity. The course begins September 1 of the third academic year and extends throughout this year; exercises, recitations, laboratory work, or lectures take place on all week days.

Commencing September 1, general chemistry and heat occupy the time until the close of the term in December, recitations or other exercises being had daily.

During this term all members of the class whose progress, as shown by their recitations, warrants it, are given laboratory practice in chemistry. This practice begins with chemical manipulations and proceeds in the usual general order of elementary laboratory work. The laboratory exercises are two hours long. It is generally possible to give all parts of the class some laboratory experience; the amount of this work, however, varies with the aptitude of the student from a few hours to 30 or more.

This term closes with an examination upon the essential parts of the entire course, which all cadets who have not shown a required proficiency in daily work must take.

The course in heat is short, but it is a comprehensive elementary course intended to embrace what is most applicable to subsequent work at the academy and what is most useful in general education.

In chemistry the course is a descriptive general one, based upon a concise statement of the more essential principles of chemistry, and includes that class of information deemed most important to nonspecialists, together with an accurate and logical treatment of many useful applications of chemistry.

Beginning January 2, the subject of electricity is taken daily. This term also closes with an examination, covering the essential parts of the subject studied during the term, which all cadets who have not shown a required proficiency in daily work must take.

The course in electricity is a brief exposition of the leading electrical phenomena and their relations to each other. It includes a study of the general principles of the subject and of the typical machines, generators, motors, and transformers, together with the more important uses of electricity. The laboratory exercises give experience with a number of the machines and in the use of a great variety of apparatus employed in the numerous forms of electrical measurements. In this term the laboratory work is a part of the electrical course, and all cadets enter the laboratory. All laboratory work is performed under the immediate supervision of an instructor.

Textbooks

Elementary Lessons in Heat.—Tillman.	Practical Chemistry (Laboratory Guide).—Clowes.
Descriptive General Chemistry.—Tillman.	Elements of Electricity.—Robinson.

Standard works on the respective subjects are always available for reference, both to cadets and instructors.

Minutes West Pt. 1925

	1st Yr sem 1	1st Yr sem 2	2nd sem 1	2nd sem 2	3rd sem 1	3rd sem 2	4th sem 1	4th sem 2
Math	8075	7650	8075	11050				
Survey		40×85 = 3400						
Gym	80×50 = 4000	109×50 = 5450						
Tactics (+riding)	15×50 = 750	21×50 = 1050	10×75 = 750 a	8×75 = 600 b		30×120 3600	3382.5	4057.5
French }	189×60 = 11340		a k	d				
Eng }			w	x				
History			= 16875 e	a→f = 225×75 f				
Drawing			= 17010 y	w→z = ½×189×60 z + ½×189×120	½×159×120 = 9540			
Phi'os					½×85×225 = 9562.5			
Lab					½×120×225 = 13500			
Chem + Elect					85×225 = 19125			
Spanish					½×60×189 = 5670			
Engin						K	K	K
M.I.t. Art						K	K	K
Ordn. + Gun							½×189×75 = 7087.5 M	
Econ + Govt							½×189×75 = 7087.5	
Law							½×189×75 = 7087.5	
Hygiene							14×60 + 16×60 = 1800	
	41795 min		53010		60997.5		50977.5	

Total all 4 yrs. 206,700 min = 3445 hrs.

a+b+c+d+e+f = 16,875

w+x+y+z = 17,010

sum of all K's $(225-47)\times 85 + 47\times 85 + 12\times 75 = 19125 + 900 = 20025$

sum of all M's $\frac{1}{2}\times 189\times 75 + 6\times 75 = 7087.5 + 450 = 7537.5$

4th yr 1925 Minutes

Tact + Riding

1st Sem

½ × 80 × 60 = 2400

½ × 15 × 75 = 562.5

− ½ × 14 × 60 = −420

3382.5

2nd Sem

½ × 109 × 60 = 3270

½ × 21 × 75 = 787.5

4057.5

Typical 4th yr. Hum Sched

Engin 7:55 – 9:20

Ord + Gun

Day 1

Day 2

Ord + Gun 10:40 – 11:55

Econ