

CONFIDENTIAL

College of Engineering (Facultad de Ingeniería)

The need in Mexico for training and knowledge in the field of engineering was early felt in connection with what next to agriculture is perhaps the oldest and most important of all industries in the country -- mining. Gold and silver mines were worked in Mexico in primitive fashion from time immemorial by the indigenous peoples and, as is well known, it was the prospect of gold and silver which was largely responsible for the coming of the Spaniards and the conquest itself.

As early as the beginning of the 18th century, prominent citizens began to agitate for the establishing of a school of mining wherein more efficient and productive methods of extracting mineral ores would be studied and taught. It was not, however, until 1783 that a decree was handed down by the King of Spain creating the Royal Seminary of Mining and that the first school of mines was established in an annex to the Hospital de San Nicolás Tolentino. For some years, the school was unable to function because of the lack of students, but finally in 1792 the school was officially opened, in a small house in the old Aztec precinct of Nilpantongo, in 1789.

The building in which the school was originally located soon proved to be inadequate and the then famous architect Manuel Tolsa was commissioned to draw up the plans for a new structure. The new home for the Royal School of Mining was started in 1797 and finished in 1813. It is this building which the School of Mines (in 1854 changed to the National School for Engineers) has continued to occupy down to the present day with only slight interruptions.

One of these interruptions came when Maximilian endeavored to convert the building into a National Palace. On other occasions, it has been necessary to vacate the place temporarily while repairs were being made. Thus, for example, due to damage resulting from earthquakes the School was transferred to another building for four years between 1830 and 1834. As a matter of fact, the structure began to crack and sink very soon after its completion and repairs have been almost constantly under way throughout its history. The building is said to have cost, aside from the amount spent in the numerous (and albeit unsuccessful) repairs, well over a million and a half pesos.

The three-storey structure has been conceived in the grand manner and in contrast to most colonial buildings the facade is severely classical in style. In the center of the building is a large patio (86 feet square) and there are several small patios scattered about in other wings. At the present time, despite all efforts to save it, the place is tottering to its ruin. Many of the rooms have been abandoned as unsafe and such architectural features as the place may have are almost completely hidden by the numerous wooden supports which have been erected to prevent the walls from falling in. The present College of Engineering has managed to salvage enough space for some twenty classrooms, four or five laboratories, offices for administration, a large assembly room, and a library.

The library is located on the second floor in a very large, well lighted room. The books are arranged in a heterogeneous collection of cases placed around the wall and would be easily accessible to the students were it not for the fact that the cases are kept locked. Current reviews and periodicals are

found on a large table at the entrance to the library. (This is one of the few libraries in the University where the periodicals are so arranged that the students can consult them without having to make a special request for each magazine.) The regulations allow the students to take out books over night. The general atmosphere of the library is more studious than that found, for example, in the College of Law or the College of Medicine. In 1927, 139 books and 22 periodicals were bought for the library at a total expenditure of 1,269.40 pesos. The total number of volumes in the library in that year was 9,639.

As has been noted above, the College of Engineering has a number of laboratories for use in connection with the courses given, in electricity, chemistry, hydraulics, metallurgy, and the testing of materials. According to Mexican engineers who have attended the School, the laboratory equipment is very poor. It is not without interest that the College of Engineering, so the writer is informed, does not have any department for research in the field of building foundations, and this despite the fact that the problem of foundations due to the nature of the sub-soil is one of the most important problems facing the engineering and architectural professions in Mexico City and that the building in which the College of Engineering itself is located is falling into ruins because of the sinking of its foundations.

Degrees

The purpose of the College of Engineering is to "produce good designers, good superintendents, and good organizers of companies for industrial exploitation and for the construction of engineering works -- i.e. engineers equipped to make a living,

to develop the physical welfare of our nation in relation to its social conditions and to its potential riches, taking into consideration the progress which engineering has achieved in the most advanced nations of the world."

Courses in this College lead to the following professional degrees: Civil Engineer, Mining Engineer, Petroleum Engineer, Mechanical-Electrical Engineer, Forestry Engineer, Topographical and Hydrographical Engineer.

The entrance requirements for all courses are: freedom from contagious diseases and physical disability that would prevent practice of the profession; and the completion of the introductory course in the National Preparatory School.

Courses

	<u>Civil Engineering</u>		<u>Field Practice</u>
	<u>First semester</u>	<u>Second semester</u>	
<u>First Year</u>			
Technical Mathematics	3	3	General Topo- graphy
Applied technical mathematics for civil engineering	2	2	
Descriptive Geometry	3	3	
Physics	3	3	
Topography	3	3	
Electricity and Magnetism	3	3	
Technical, for civil engineering (material and means of construction)	2	2	
Topographical drawing	2	2	
Elementary field study of topography	1	1	
	<u>22</u>	<u>22</u>	
<u>Second Year</u>			
Applied technical mathematics (x)	2	2	
Statics and elementary stability	3	3	
Geology (for civil engineers)	3	3	
Elementary construction methods	3	3	
Technical English (xx)	3	3	
Electricity and magnetism	3	3	
Elementary architectural drawing	3	3	
Material testing	1	1	
Principles of construction drawing	3	3	
	<u>24</u>	<u>24</u>	

	Hours per week		Field Practice
	First semester	Second semester	
<u>Third Year</u>			
Dynamics and Mechanism	3	3	
Hydraulics	3	0	
Applied Hydraulics	0	3	
Advanced stability	3	3	
Advanced construction methods	3	3	
Structural Steel	3	3	
Electricity and magnetics (x)	3	3	
Architectural drawing, II	3	3	
Machine drawing	2	2	
Principles construction drawing (x)	3	3	
	<u>26</u>	<u>26</u>	

Fourth Year

Thermic machines	3	3
Reinforced concrete	3	3
Sanitary engineering	3	0
Hydraulic machines	0	3
Electrical engineering, elementary	3	3
Bridges	3	3
Forest hydrology (lectures) (xx)	2	2
Architectural drawing III	3	3
Organization, management, and future of civil engineering (lectures)	2	2
Concrete, laboratory study	1	1
Electricity, laboratory study	1	1
	<u>24</u>	<u>24</u>

Fifth Year

Hydraulics	3	3	General civil engin- eering
Land communications, roads	3	3	
Ports and waterways	3	3	
Estimates, contracts, and appraisements	3	3	
Organization (x)	2	2	
Projects of hydraulic works	3	3	
Projects of land communications, roads	3	3	
Architectural composition	3	3	
	<u>23</u>	<u>23</u>	

Mining EngineeringFirst Year

Technical Mathematics	3	3	General topo- graphy
Applied technical mathematics (mining)	2	2	
Descriptive geometry	3	3	
Physics	3	3	
Topography	3	3	
Electricity and magnetics	3	3	
Technology for miners (materials and means of construction)	2	2	
Topographical drawing	2	2	
Elementary practice of topography	1	1	
	<u>22</u>	<u>22</u>	

	Hours per week		
	First semester	Second semester	Field Practice
<u>Second Year</u>			
Applied technical mathematics for miners (x)	2	2	Preparation of mining drawings
Statics and stability	3	3	
Elementary geology	3	3	
Minerology	3	3	
Electricity and magnetics (x)	3	3	
Qualitative chemistry (including laboratory)	3	3	
Elements of construction drawing	3	3	
Material testing	1	1	
	22	22	
<u>Third Year</u>			
Dynamics and mechanics	3	3	General geology
Second course of geology	3	3	
Hydraulics	3	0	
Hydraulic machines	0	3	
Construction method for miners (including experiments in applied stability)	3	3	
Electricity and magnetics	3	3	
Quantative chemistry (including laboratory)	3	3	
Machine drawing	2	2	
	20	20	
<u>Fourth Year</u>			
Thermic machines	3	3	Mechanical engineering and applied geology
Geology, third course (study of mineral deposits)	3	3	
Reinforced concrete	3	0	
Electrical engineering, elementary	3	3	
Forest hydrology (lectures (xx))	2	2	
Technical English (xx)	3	3	
Organization, management, and future of mining engineering (lectures)	2	2	
Electricity, laboratory	1	1	
Reinforced concrete, laboratory	1	0	
	21	17	
<u>Fifth Year</u>			
Working of mines and projects of mine installations (including mining law and accounting)	3	3	General mining practice
Mechanical treatment of minerals, metallurgy, and projects for metallurgic installations	3	3	
Organization (x)	2	2	
	8	8	

	<u>Hours per week</u>		<u>Field Practice</u>
	<u>First semester</u>	<u>Second semester</u>	
<u>Petroleum Engineering</u>			
<u>First Year</u>			
Technical mathematics	3	3	General
Applied technical mathematics (for petroleum engineers)	2	2	
Descriptive geometry	3	3	
Physics	3	3	
Topography	3	3	
Electricity and magnetics	3	3	
Technique for petroleum engineers (construction materials and equipment)	2	2	
Topographical drawing	2	2	
Elementary practice of topography	1	1	
	<u>22</u>	<u>22</u>	
<u>Second Year</u>			
Applied technical mathematics (for petroleum engineers) (x)	2	2	
Statics and stability	3	3	
Geology, first course	3	3	
Minerology	3	3	
Technical English (xx)	3	3	
Electricity and magnetics (x)	3	3	
Organic chemistry	3	3	
Elements of constructive drawing	3	3	
Material testing	1	1	
	<u>24</u>	<u>24</u>	
<u>Third Year</u>			
Dyanmics and mechanics	3	3	
Geology, second course	3	3	
Hydraulics	3	0	
Hydraulic machines	0	3	
Construction methods for petroleum engineers	3	3	
Electricity and magnetics (x)	3	3	
Technology of petroleum and laboratory analysis	3	3	
Machine drawing	2	2	
	<u>20</u>	<u>20</u>	
<u>Fourth Year</u>			
Thermic machines	3	3	
Geology, third course, applied to petroleum deposits	3	3	
Reinforced concrete	3	0	
Principles of electrical engineering	3	3	
Forest hydrology (lectures) (xx)	2	2	

	<u>Hours per week</u>		<u>Field Practice</u>
	<u>First semester</u>	<u>Second semester</u>	
Organization, management, and future of petroleum engineering	2	2	
Reinforced concrete, laboratory	1	0	
Electricity, laboratory	1	1	
	<u>15</u>	<u>11</u>	

Fifth Year

Petroleum exploitation and projects for installations in petroleum fields (including petroleum legislation and accounting)	3	3	
Distillation and refinement of petroleum (projects for refinery installments)	3	3	
Organization (x)	<u>2</u>	<u>2</u>	
	<u>8</u>	<u>8</u>	

Electro-Mechanical EngineeringFirst Year

Technical mathematics	3	3	
Applied mathematics for electro-mechanical engineers	2	2	
Descriptive geometry	3	3	
Physics	3	3	
Electricity and magnetics	3	3	
Technology for electro-mechanics, -shop material and equipment	3	3	
Preparation of plans, including field work and topographical drawing	2	2	
Shopwork	<u>1</u>	<u>1</u>	
	<u>20</u>	<u>20</u>	

Second Year

Applied technical mathematics (x)	2	2	
Statics and stability	3	3	
Electrical technique, first course (AC DC)	3	3	
Electro-chemistry	3	3	
Technical English (xx)	3	3	
Technical drawing	3	3	
Material testing and shopwork	<u>2</u>	<u>2</u>	
	<u>19</u>	<u>19</u>	

Third Year

Dynamics	3	3	
Hydraulics	3	0	
Hydraulic machines	0	3	
Electro-technique II (theory of high currents)	3	3	

	<u>Hours per week</u>		
	<u>First semester</u>	<u>Second semester</u>	<u>Field Practice</u>
Direct and Alternating Current machines	3	3	
Forest hydrology (x) (xx)	2	2	
Transportation machinery and elementary machine drawing	3	3	
Electrical laboratory, first course	2	2	
	<u>19</u>	<u>19</u>	

Fourth Year

Thermic machines (generators and steam motors)	3	3	
Distribution and transmission of electric power	3	3	
Electrical measurements, photometry and lighting	3	3	
Principles of civil engineering	3	3	
Complementary thermic machines	3	3	
Forest hydrology (xx)	2	2	
Organization (x)	2	2	
Electrical laboratory, second course	3	3	
	<u>22</u>	<u>22</u>	

Fifth Year

Projects for transmission system and hydraulic and thermic machines	3	3	
Repair and installation of electrical machines	2	2	
Steam plant projects	3	3	
Hydro-electric projects	3	3	
Machine, laboratory	3	3	
Organization, management, and future of electrical engineering	2	2	
	<u>16</u>	<u>16</u>	

Topographical and Hydrographical EngineeringFirst Year

Technical mathematics	3	3	General topo-graphy
Applied technical mathematics for topographical engineers	2	2	
Topography	3	3	
Practical astronomy	3	3	
Hydrography	0	2	
Elementary practice of topography and topographical drawing	3	3	
	<u>14</u>	<u>16</u>	

<u>Hours per week</u>		
<u>First</u>	<u>Second</u>	<u>Field</u>
<u>semester</u>	<u>semester</u>	<u>Practice</u>

Second Year

Applied technical mathematics for topographical engineers	2	2	Profes- sional topo- graphy
Technique of surveying, theory of errors and practical calculus	3	3	
Photo-topography, including geometric optics	3	0	
Climatology, topology, and free hand topography	2	0	
	<u>10</u>	<u>5</u>	

Forestry Engineering

Course of study in this field not yet decided upon.

- (x) Courses may be taken in any scheduled year, but preferably in the year marked.
- (xx) Courses are obligatory, but not indispensable. The Rector of the University may waive this obligation, in special cases.

Course Examination Requirements

Grading of those pupils who attend the minimum obligatory number of classes will be made on the basis of their independent study for each course. The Director of the College, on the recommendation of the corresponding professor, will decide the form of the examination. (Examinations are usually written and given four times a year.)

The Director of the College and the corresponding professors will decide, subject to the approval of the Rector, the form of examination of those students who are not included above, always taking as a basis the individual, independent work of the student. (These examinations are both written and oral.)

Examination for Degrees

The candidate for a degree must present for consideration the projects prepared during his last year of study, and memoranda of his practical experience; he must prepare a written thesis, proposed by a professor of the College selected by the Director. This thesis must be approved and the candidate must answer in public assembly such questions as the members of the faculty may ask regarding it or any other technical matter they may deem pertinent. The board for the above three examinations will be made up of five professors of the College, named by the Director. With the Rector's approval, in exceptional cases, recognized engineers not members of the faculty may be named on this Board. The three examinations will be given at the same time; and in the record of the assembly in each case it will be stated whether the approval of the candidate is given for his "very ample", "ample," "sufficient," or "stictly indispensable" knowledge of his subject, the Board being empowered to withhold approval in any one of the three examinations, postponing it until such time as the Board may deem convenient.

Miscellaneous Regulations

The physical education of students will be given during such hours as will leave the students free for their other work.

No student may enter second-semester courses if he has not paid fees for the first; nor if he has not satisfactorily completed the courses of the first semester.

No student may be reinstated in a course if he has failed three times in the same subject.

Generally speaking, instruction in the College will include independent work on the part of the student done during a course or in the corresponding field study. The amount and nature of this work will be fixed by the teacher, subject to the approval of the Director. Insofar as possible, this requirement will be decided upon before the opening of the courses. Work may be so arranged that as soon as the instructor completes the program of the course and the student finishes all required work, the latter need not attend class any longer. (Each course, however, must last a certain fixed minimum number of hours.)

Students who do not take part in the field study of the College or who do not do satisfactory work must make up this work in a manner to be determined by the Director of the College in agreement with the instructor.

General

Seventy-two teachers and 12 assistants were listed in 1927 as giving courses in the College of Engineering. These teachers received salaries varying from 2,190 pesos per year in the case of professors of applied engineering giving courses averaging three hours per week, to 1,095.50 pesos per year for laboratory and classroom assistants. The total amount expended for salaries and wages in the Engineering College in 1927 was 162,387.50 pesos as compared with 11,774.87 spent for all other purposes. (Table VIII) There are no full-time teachers in the College of Engineering.

The total enrollment of the students in the College of Engineering in 1927 was 204. Of this number, 152 were taking

TABLE VIII

**DETAIL OF EXPENDITURES BY COLLEGE OF ENGINEERING
OF FUNDS RECEIVED FROM ALL SOURCES FOR SALARIES
AND ALL OTHER PURPOSES -- 1927
(in pesos)**

<u>Item</u>	<u>Yearly Salary per Individual</u>	<u>Total Annual Expenditures</u>
<u>Salaries and wages (Federal Government)</u>		
1 Director of the College at 15.00 pesos per day.....	5,475.00	
1 Assistant to the Director at 7.50 pesos per day.....	2,737.50	
1 Master Mechanic at 7.50 pesos per day.....	2,737.50	
12 Professors of applied engineering, at 6.00 pesos per day.....	2,190.00	
58 Teachers of various courses at 4.00 pesos per day.....	1,460.00	
2 Chiefs of Laboratories at 5.00 pesos per day.....	1,825.00	
6 Laboratory assistants at 3.00 pesos a day.	1,095.50	
4 Assistants in classes of applied engineer- ing at 3.00 pesos a day.....	1,095.50	
1 Clerk at 6.00 pesos per day.....	2,190.00	
1 Stenographer at 4.00 pesos a day.....	1,460.00	
1 Assistant to the Master Mechanic at 3.00 pesos a day.....	1,095.50	
1 Master Carpenter at 4.50 pesos per day....	1,682.50	
1 Assistant to Master Carpenter at 3.00 pesos per day.....	1,095.50	
1 Chief Janitor at 5.00 pesos per day.....	1,825.00	
1 Janitor at 3.50 pesos per day.....	1,277.50	
5 Helpers in Laboratories at 3.50 pesos per day.....	1,277.50	
8 Janitors at 3.00 pesos per day.....	1,095.50	
Total expenditures for all salaries and wages paid by the Federal Government.....		162,242.50
<u>Salaries and wages (Fondos propios).....</u>		145.00
<u>General Expenses (Federal Government)</u>		
Office and minor expenses.....		750.00
Laboratory supplies and equipment.....		600.00
<u>General Expenses (Fondos propios)</u>		
Books and periodicals.....		1,269.40
Building repairs and additions.....		2,924.20
Office, classroom, laboratory supplies, materials, etc..		6,234.27

Statistics compiled from the Federal Budget for 1927 and from figures supplied by the Auditing Department of the National University

courses leading to the degree of Civil Engineering, 16 Mining Engineering, 17 Electrical Engineering, 5 Oil Engineering, and 14 Topographical Engineering. It should be noted in this connection that although mining and oil represent the two most important industries of Mexico only a little more than ten percent of the total student body in the College ^{were} ~~are~~ enrolled in courses relating directly to these industries.

Mexicans and foreigners acquainted with the procedure in the College of Engineering agree that the weakest part of the curriculum at the present time is the quality and amount of instruction which is given in practice and laboratory work. Efforts have been made in recent years through cooperation with government and private agencies and by arranging the hours of teaching and vacations of the students to make it possible for the students to obtain more practical experience. Up to the present time, however, these efforts have been only moderately successful and the graduates of the College of Engineering, like those from the College of Medicine, are likely to be much better prepared in the theory than they are in the practice of their profession.

In general the men in the College of Engineering are reported to be serious in their intentions and hard working. In this connection, however, the following paragraph from a recent official report by the Director of the College should be noted:

"The students have not yet displayed an understanding of the efforts of the educational authorities to encourage in every way the organization of the students in the University; they

have not yet felt the sense of responsibility which rests upon them to cooperate with the members of faculty in a spirit of mutual respect..."¹⁸

College of Law and Social Sciences
(Facultad de Derecho y Ciencias Sociales)

Although the National University of Mexico has offered courses in law since its foundation as the Royal and Pontifical University of Mexico in 1551, the National College of Jurisprudence was not established until 1867. In recent years this College has been reorganized on several occasions and is now known as the College of Law and Social Sciences.

Perhaps more than any other department of the University the College of Law and Social Sciences tends to maintain its old traditions and it has the reputation of being the most conservative of all of the University Colleges.

The College is at present in a relatively modern three-storey building near the National Palace. Although the style of architecture is more classical than colonial, the building is nevertheless like most public edifices in Mexico constructed around a large central patio. The equipment of the College consists of about a dozen classrooms, administrative offices, one clubroom for students, and a library.

The library is located on the ground floor and contains some 15,258 books (1927). The books are fairly well catalogued and reasonably convenient of access. Needless to say, however, the library is incomplete and inadequate. Furthermore, as seems to be the general custom in University departmental libraries, the

library is apparently regarded by the students as a social and recreation center rather than as a place for study. On two occasions which the writer visited it, the students were busily engaged in playing checkers, dominoes, carrying on loud conversations, smoking, eating, and in other ways conducting themselves as if they were in a side-walk café.

In 1927, there were acquisitions of 258 books and 8 magazines to the library and the total budget for this purpose amounted to 1,266.04 pesos.

The building in which the College is now housed presents evidences of lack of care and failure to keep the place in repair -- many of the windows and doors are without panes, the plaster is peeling off of both the inside and outside walls, the electric fixtures are broken and badly placed, and many of the rooms are dirty and ill kempt. The equipment of the classrooms leaves much to be desired for not only are there no blackboards in some of the rooms but the seats and desks are of a nondescript character, and are often broken. Only in one respect does the Law School seem to be completely equipped -- it has an unusually large and decorative assortment of spittoons.

The capacity of the Law School is estimated at 400 students. The number of students per class in the advanced courses averages about 60. In the freshman year, however, classes of 150 students are not unusual. In 1927, the total enrollment in the College was 448 students.

Degrees

The aims and purposes of the College of Law and Social

Sciences are stated in an official publication of the Ministry of Education as follows:

"Having the firm conviction that a proper administration of justice and the inflexible application of the law are the fundamental bases of public confidence in the officials who govern a nation and, as a result of this confidence, of the foundation of the peace and prosperity of a nation, the College of Law has as its primary aim the establishing of a system of education which will make of the future lawyers true bulwarks of the morality of the state."

The following degrees are given in this College: Master in Law, Doctor in Law, Master in Social Sciences, Doctor in Social Sciences, and Master in Economics. The following certificates are also given: Expert in Municipal Administration, Expert in Criminology, Expert in Industrial Organization.

In 1927, some 29 certificates for Master of Law were granted in the Law School.

Entrance Requirements

The student must be a Bachelor of Sciences and Letters, or have completed and presented a certificate of preparatory studies made in official State Institutes or Universities; the student must be free from contagious disease and physical disability.

Courses

<u>Master in Law</u>		<u>Hours per week</u>
<u>First Year</u>		
Sociology		3
Political Economy		3
Rights and Persons		3
General Law theory		3
History of Law I		3

Second YearHours per week

History of Law II
 Successions
 Public Law
 Penal Law I

3
 3
 3
 3

Third Year

General theory of obligations and contracts
 Civil Law I
 Penal Law II
 Constitutional Law
 Administrative Law

3
 3
 3
 3
 3

Fourth Year

Civil Law II
 Penal Law: local, federal, military
 Commercial law I
 Guaranties
 International public law
 Industrial law

3
 3
 3
 3
 3
 3

Fifth Year

Commercial Law II
 International Law of Individuals

3
 3

Three courses chosen by the student from among the following: Mexican political economy, finance and fiscal legislation, advanced commercial law, advanced administrative law, legal medicine, penal establishments and penitentiary colonies, ethnology, history of Mexican civil institutions, Roman law, commercial societies, and credit institutions, labor legislation and social prevision. Each one of these three courses will be given two weekly lecture periods and one weekly seminar.

9

Civil court practice under the professor's direction
 Penal court practice under the professor's direction

3
 3

Doctor in Law

The Master in Law, candidate for the Doctor's degree, must do one year's work, three-hours weekly, in the following subjects, exclusive of those already taken during study for the Master's degree:

Candidates specializing in civil law: Ethnology, history of Mexican civil institutions, Mexican political economy, finance and fiscal legislation, comparative civil law, Roman law.

Specializing in Commercial Law: Mexican political economy, history of economic doctrines, finance and fiscal legislation, elements of accounting and auditing, human geography, mercantile societies, credit institutions.

Specializing in Industrial Law: History of economic doctrines, ethnology, Mexican political economy, human geography, statistics and demography, labor law, history of the labor movement, international labor movement.

Specializing in Penal Law: Anthropology, ethnology, criminology, psychiatry, statistics and demography, legal medicine, penal institutions and penitentiary colonies.

Specializing in Public Law: History of Mexican civil institutions, Mexican political economy, human geography, statistics and demography, world history.

The candidate will also do four courses from among the following: electoral legislation, federal and local; constitutions and regulating laws of the States, municipal law, international agreements and treaties, diplomatic and consular legislation, finance and fiscal legislation, legislation regarding lands, forests, water; Agrarian politics, mining and petroleum legislation, labor legislation, patent and trade-mark legislation, insurance, railway and transport legislation, postal and telegraph legislation, military legislation, sanitary legislation.

He will also do two annual seminar courses of two hours weekly in the branch of Law elected as a specialty -- i.e. civil law, commercial law, or public law; do two seminar courses other than those he has made in two of the subjects included in the Law Section; translate two living tongues, or Latin and one living tongue; speak one foreign language; and present a thesis which demonstrates personal research.

Master in Social Sciences

	<u>Hours per week</u>
<u>First Year</u>	
Sociology	3
Political economy	3
Anthropology	3
Ethnology	3
Arqueaology and History of Ancient Mexico	3
<u>Second Year</u>	
Mexican Sociology	3
Mexican political economy	3
Human geography	3
Statistics and demography	3
General theory of law	3

Third YearHours per week

History of Mexican civil institutions	3
History of Economic doctrines	3
Finance and fiscal legislation	3
Private law	3
Elements of accounting and auditing	3
Industrial law	3
Public law	3

Fourth year

History of labor movement and international labor movement	3
Credit institutions and mercantile societies	3
Constitutional law	3
Administrative law	3
International public law	3
Petroleum and mining law	3

Semester Courses

Municipal services	3
Agriculture and agrarian politics	3
Textile industries; industries	3
Industry and transport	3

Students must also do: (a) a year's seminar course in three of the following: Mexican sociology, Mexican political economy, anthropology, Mexican political economy, ethnology, archaeology and history of ancient Mexico, history of Mexican civil institutions, human geography, statistics and demography, finance and fiscal legislation, commercial societies and credit institutions; and (b) one semester course in two of the following: Mining and Petroleum industries, municipal services, agriculture and agrarian politics, most important industries, transport

Seminar courses consist of two weekly lecture periods and one conference period of one hour each.

Doctor in Social Sciences

Candidates for the Doctor's degree must take the following courses in the College of Philosophy and Letters: epistemology, ethics, history of philosophic doctrines, two courses in world history, methodology of social science; and take two "seminar" courses in any of the subjects included in the Department of Social Sciences, excluding those which the candidate has already taken.

He must translate two living tongues, or Latin and a living tongue; speak one foreign language; and present a thesis which demonstrates personal research.

Master in Economics

<u>First Year</u>	<u>Hours per week</u>
General sociology	3
General economic history	3
Economic theory	3
Synthesis of law	3
Economic geography	3
General statistics and economy	3
<u>Second Year</u>	
Mexican sociology	3
History of economic doctrines	3
Mexican Agrarian problem	3
Economic history of Mexico	3
Organization and functioning of business organizations	3
Accounting and auditing	3
<u>Third Year</u>	
Government accounting	3
Insurance and social prevision	3
Mexican industries	3
Rural economy	3
Banks and money	3
One monograph course: railways, petroleum industry, mining, commerce, or any other subject of similar importance	3
<u>Fourth Year</u>	
Public credit (half course)	3
Public administration (half course)	3
Industrial organization	3
Labor law	3
Exchange	3
Socialist doctrines	3
One monograph course such as was done in the third year	3

Entrance requirements for "Specialist" courses are the following: Completion of secondary school course in arithmetic, plane geometry, algebra, drawing, world geography, Mexican geography, world history (two courses), Mexican history (two

courses), principles of accounting, history of philosophic doctrines, Spanish language (two courses), elementary biology; students doing the "specialist" course in criminology will substitute logic for the course in history of philosophic doctrines; two courses in any one of the following languages: French, English, German, or Italian.

Specialist in Municipal Administration

For the certificate of Specialist in Municipal Administration, the following studies are required: (a) one annual course in each of the following:

Political economy, Mexican political economy, principles of accounting, statistics and demography, constitutional law, administrative law, municipal law, finance, municipal taxes, municipal organization; municipal services, libraries, and files.

(b) one annual course of research and study in each of the following:

Mexican political economy, Municipal law, Municipal taxes, Municipal organization, Municipal services.

Specialist in Criminology Specialist in Industrial Organization

Courses similar to the course for Specialist in Municipal Administration are offered in the above subjects.

Course Examinations

Three systems are used in the Law School for examinations in individual courses at the present time: (a) an oral examination in which three questions selected by chance must be answered -- these examinations are supposed to last one hour for each student,

but ordinarily fifteen minutes is the limit; (b) written examinations of two hours' duration; and (c) the writing outside of class of a report or thesis on the material covered in the course. The number and type of examinations given in any particular course is left to the discretion of the teacher. With reference to the subject of examinations, the following paragraphs from a recent report published by the College of Law and Social Sciences are pertinent and illuminating:

"It is generally believed in the College of Law that the best method of testing is that of giving oral examinations at the end of the year, always with the proviso that these examinations in order to be effective should be given by a jury of several professors and should last from one hour to one hour and a half. Written examinations have proved absolutely ineffective and do not furnish a basis for estimating the capacity of the student. Perhaps the system of trimestral written examinations would prove satisfactory, but because both teachers and students oppose it, the system has not yet been established.

"It is recommended that, in order to oblige the students to study, instructors grade them frequently for their oral work in class, with the ruling that the student who does not average a passing grade may not take the regular examination, thus being put to the trouble and expense of a special examination.

"This system, however, in the opinion of the Director of the College, is not effective in schools where the classes number more than 25 students." 14

It will be recalled that it was the attempt of the Rector of the University to introduce a system of regular written examinations ^{in the College of Law} which caused the student strike of 1929.

Degree Examinations

For his final examination, the candidate for the degree of Master in Law, Master in Social Sciences, or Master in Economics must sustain and be approved in a written thesis which will be submitted to the Director of the College. The subject of this

thesis will be assigned by the Director according to the branch of study followed by the student, who will try to make the work of interest and of true research value to the country. If the thesis is unanimously approved, an oral examination will be given by the same Board which approved the written work. This Board will be composed of five professors from the College, with two substitute members. The candidate will be considered passed if he secures the approval of at least three members of the Board. The Board will be permanently appointed by the Director of the faculty the first of each year.

Miscellaneous Regulations

No student may be entered in second-semester classes if he has not passed more than half of his courses for the first semester. A student who has failed three times in any course, or without justified cause has not been present at the examination, may not be entered again for this course.

General

The total number of teachers giving classes in the College of Law and Social Sciences in 1927 was 60. Each teacher was paid a flat rate of 1,460 pesos a year. (Ordinarily, this meant the giving of one course of three hours per week, although in some cases the given^{an} instructor would give two or more courses, receiving corresponding increases in his remuneration.) The total amount spent for wages and salaries in the College of Law in 1927 was 106,762.50 pesos as compared with 2,269.45 pesos spent for all other purposes (see Table IX). No statistics are available which

indicate the number of full-time teachers in the School for the year 1927. (It should be noted that the courses in social science leading to the degrees of Master in Social Science and Doctor in Social Science were not established until the beginning of 1929 and that accordingly the teachers and salaries for these courses were not included in the above figures.)

Concerning the teaching and teaching methods of the College of Law, the following statements from the previously quoted official report recently made by the Director of the School may be given without comment.

"Although the members of the faculty of the College have in general faithfully collaborated in the realization of the high purposes of the School, nevertheless it must be said that many of them are very unpunctual and that they are often discouraged by the lack of application and discipline on the part of the students.

"It must be emphasized that in this College more than in any other, there is urgent need for regular full-time teachers dedicating themselves solely to the business of teaching. At present, the chairs in the University are held by lawyers who are engaged in private practice or who are otherwise busy with their own affairs. Of course, in order to have full-time teachers, it will be necessary to arrange matters (as the University has been attempting to do recently) so that the same individual may teach various classes and be correspondingly well paid.

"....Those teachers who at the present time do not use a textbook for their courses should be obliged to mimeograph their lectures at the expense of the College; for the students are now greatly handicapped in these classes by not being able to assimilate the instruction or to review the materials in the courses." 15

The extent to which the students in the College of Law apply themselves to their studies may be judged from a statement made by the Director of the School in 1927 on the occasion of the introduction of elective courses into the curriculum:

"It is absolutely necessary that all of the elective courses offered to the students be equally well organized, and equally important; and that the quality of the instruction be of the same grade. Otherwise, the only result will be that, by

TABLE IX

DETAIL OF EXPENDITURES BY COLLEGE OF LAW AND SOCIAL SCIENCES
OF FUNDS RECEIVED FROM ALL SOURCES FOR SALARIES
AND ALL OTHER PURPOSES -- 1927
(in pesos)

<u>Item</u>	<u>Yearly Salary for Individual</u>	<u>Total Annual Expenditures</u>
<u>Salaries and Wages (Federal Government)</u>		
1 Director of the School at 15.00 pesos per day.....	5,475.00	
60 Teachers for various subjects at 4.00 pesos per day.....	1,460.00	
1 Clerk at 5.00 pesos per day.....	1,825.00	
1 Janitor at 3.50 pesos per day.....	1,277.50	
1 Chief Janitor at 5.00 pesos per day.....	1,825.00	
8 Janitors at 3.00 pesos per day.....	1,095.50	
Total expenditures for all salaries and wages paid by the Federal Government.....		106,762.50
<u>Salaries and Wages (Fondos Proprios).....</u>		
<u>General Expenses (Federal Government)</u>		
Office and minor expenses.....		375.00
<u>General Expenses (Fondos Proprios)</u>		
Books and periodicals.....		1,266.04
Building repairs and additions.....		628.41

Statistics compiled from the Federal Budget for 1927 and
from figures supplied by the Auditing Department of the
National University

the law of least resistance, the students will select only those courses which are the most simple, the least well organized, the least serious, and the least significant...

"And although it would be very nice to state the contrary, it must nevertheless be confessed that in our College due to the lack of trained law teachers, the limited funds at our disposal, and to the absence of a positive scientific spirit in the students, instead of obtaining by the elective courses a varied and flexible system of teaching we will only furnish an opportunity for still more inefficient work on the part of the students." 16

In 1929, when the courses in social science were separated from those in Law, an attempt was made to break down the traditional prejudice against non-professional studies and to interest the students in the fields of economics, political science, and sociology. In 1927, all of the 448 students in the Law School were enrolled in the courses leading to the degree of Master in Law. In the present year (1929), some progress has been made in the direction indicated in the first sentence of this paragraph in that out of the some 600 students in the College, about 100 are enrolled in the courses leading to the degree of Master in Economics. (It should be noted, however, that many of the students taking the course in economics are doing so because they have received scholarships from the government for this particular purpose.) There are no students enrolled in the courses leading to the degrees of Doctor in Law, Doctor in Economics, or in the so-called specialization courses for which a certificate is granted.

The reason for the failure of the students to display any very great amount of interest in the courses in economics or in the advanced law courses offered by the College may be partially explained by the fact that up to the present time these courses have existed for the most part only on paper. To

offer courses of the type here considered would require resources, teachers, and a type of interest and knowledge which, according to the Director of the Law School, do not exist in Mexico at the present time.

"In Mexico, the study of our economy has never had the characteristics which a thorough knowledge of the nation demands: (a) it has not been systematic, organized, or complete; (b) it has not been a collective study but, on the contrary, in the majority of cases at least, a work of isolated individuals who for this very reason have not been able to give their investigations that impersonal and social character which all science demands." 17

The student body in the College of Law and Social Sciences has been and continues to be the most undisciplined and refractory of any of the Colleges or Schools in the University. That the student strike of 1929 was initiated by the Law students is not without significance. The students of the Law School have been more or less constantly at odds with the members of the faculty and the administrative officers of the College. Not only have the students in years gone by engaged in strikes involving the complete suspension of activities in the School, but it is customary for the students to exercise a species of sabotage as a part of the regular procedure. Holidays are declared for any or no reason at all; order in the classrooms is bad and attendance is desultory; the School does not have an honor system and cases of cheating are left to the discretion of the teacher concerned. In a word, as one student expressed the matter to the writer, "the only system of discipline in the Law School is the discipline of individual desire -- here we have complete liberty."

Student Activities

The major extra-curricular activities of the students are those embraced in the various athletic contests waged between the teams of the College of Law and Social Sciences and those of other Colleges and athletic organizations in the City. There are also several clubs of a literary and intellectual character, and there is a magazine known as the Review of Social Sciences published from time to time by the students in cooperation with the members of the faculty.

Although the needs for improvement in the physical equipment of the Law School are about as great as they are in any other department of the University, from the foregoing review it should be evident that these matters of physical equipment are of minor importance as compared with the need for an intellectual and spiritual reorganization and rejuvenation. From time to time, excellent plans of study have been worked out by the members of the faculty (this seems to be especially true of the last plan published in 1929), but it will be impossible for the College to ever realize its purposes or to take its place as an integral part of a University in the proper sense of that term until the students and members of the faculty are willing to dedicate themselves wholeheartedly to that end.

The College of Philosophy and Letters (Facultad de Filosofía y Letras) and the Teachers College (Escuela Normal Superior)

The College of Philosophy and Letters and the Teachers College were originally established in 1910 as part of the National

School of Higher Studies. The object of these new departments was to "complete" the National University in the sense of furnishing an opportunity to students to do advanced work in certain subjects offered in their elementary phases in other Colleges.

Until 1925, the College shared a small building with the central administrative offices of the University. When this arrangement proved unsatisfactory, in 1927 the College was given a section of the National Preparatory School building known as the Colegio Chico. Here the College has somewhat more ample and adequate quarters, including some twelve classrooms, two laboratories (one in experimental psychology and one in biology), a library and administrative offices. (For a description of the building, see above^{the} section dealing with the National Preparatory School.) By the Law of 1929, the Teachers College was made separate and independent from the College of Philosophy and Letters.

The physical equipment of the library of the College impresses one as more nearly approximating what a library is supposed to be than any of those found in other colleges. The books and reading tables are well arranged and the place has an air of studious quietness which is rather unusual in the departmental libraries of the National University. However, as usual, the books available are inadequate to the needs of the student body. The library consists of a part of the collection formerly located in the so-called University library. In the year 1927 in the last mentioned, there was a total of 11,152 books with acquisitions in that year of 152 books and 49 periodicals involving a total expenditure of 509.60 pesos.

The two laboratories mentioned above are very incompletely and inadequately furnished, and such equipment as they have is either out of date or in such a bad state of repair that it cannot be used.

In the year 1927 the total enrollment of the two Colleges was 801 students. Of this number, 504 were listed in the courses offered in the College of Philosophy and Letters and 297 in the Teachers College. A large number of these were "irregular" students who were taking only a few courses and were not candidates for degrees.

Degrees

"The College of Philosophy and Letters has for its purpose the cultivation of the higher disciplines of knowledge and the systematic diffusion of culture; its main object is to stimulate and develop in the students an understanding of the methods of investigation and of thought which will equip them to explore new fields of philosophy, of science, and of the arts.

"The purposes of the Teachers College differ from those of its sister institution, the College of Philosophy and Letters, both in method and in tendencies. Its object is to prepare directors and inspectors of primary schools, teachers in the secondary, preparatory, normal, and university schools, and directors of the educational system."

Courses of study in the Teachers College lead to certificates as follows: Director of Primary Schools, Inspector of Primary Schools, University Professor of Secondary Schools,

Preparatory, and Normal Schools.

Students studying for the certificate of Director of Primary Schools must complete ten courses, taking a maximum number of four per year. Those studying for the certificate of Inspector of Primary Schools and for the certificate of University Professor of Secondary, Preparatory, and Normal Schools must complete eight courses, taking a maximum of four per year.

Courses in the College of Philosophy and Letters lead to the degrees of Licentiate, Master, and Doctor, in the fields of philosophy, science, and history and letters respectively. (Up to the present time, however, no courses have been offered for the Doctor's or Master's degree.) Two years' work is required to obtain the degree of licentiate in the College of Philosophy and Letters.

Entrance requirements

Teachers College

Director of Primary Schools: "Regular" students must be normal school teachers and have passed at least four general courses in the College of Philosophy and Letters. "Special" students must have completed studies equivalent to those required for instructors or kindergarten teachers in the City Normal School. "Visiting" students must be titled teachers or be serving in a primary school in a teaching position.

Inspector of Primary Schools: "Regular" students must be Directors of Primary Schools, graduates of the Teachers College, or be in active service as Zone Inspectors with at least five

years' experience. "Special" students must be normal teachers preparing for the position of Director. "Visiting" students must have a professional title, preferably that of Normal Teacher, and actually be teaching in official schools.

University Professor: "Regular" students must be normal teachers, or Bachelors, and have completed the studies prescribed by the College of Philosophy and Letters for the Licentiate corresponding to the subject to be taught. "Special" students must be normal teachers or Bachelors. "Visiting" students must have a professional title and be Bachelors or teachers in the Secondary, Préparatory, or Normal schools.

College of Philosophy and Letters

To enter the College of Philosophy and Letters the student must have the degree of Bachelor or have completed the studies in the Normal School leading to the certificate of Master.

Courses

Teachers College

Director of Primary School

	<u>Hours per week</u>
1. Principles of Primary School Education	2
2. Organization and administration of primary schools	2
3. Teaching methods: Primary Schools	
First course	3
Second course	3
Third course	2
4. Student hygiene (Director's course)	3
5. History of education	3
6. Educational psychology	2
7. Critical examination of mental development of students in primary schools	2
8. Educational sociology	2
9. Study of scales for measuring progress of students in primary schools	2

Hours per weekOptional Courses

- | | | |
|----|--|---|
| I | General course on principles of organization in secondary schools (course for University Professors) | 2 |
| II | Increasing efficiency of teachers (course for Inspectors) | 2 |

Inspector of Primary Schools

- | | | |
|----|--|---|
| 1. | Philosophy of education | 3 |
| 2. | Synthetic History of Education | 3 |
| 3. | Organization of systems of education | 2 |
| 4. | Social hygiene and the school (course for Inspectors) | 2 |
| 5. | Increasing efficiency of teachers | 2 |
| 6. | Statistics, applied to the formation, use, and interpretation of mental-measurement scales | 2 |
| 7. | Preparation of scales for estimating progress of students in primary schools | 2 |

Optional courses

- | | | |
|----|---|---|
| I | General course on principles and organization of secondary education and secondary schools (course for University Professors) | 2 |
| II | Analytic course on problems of secondary education (course for University Professors) | 2 |

Similar courses are offered for studies leading to the other certificates given in this College.

In this College, no student may take more than four courses a year. Students who are absent from ten consecutive classes without justified cause will be dropped. Special students will receive a certificate of the courses passed; visiting students will receive, on request, a certificate provided they have attended eighty percent of the classes.

Philosophy and Letters

Subject to modification by the Director of the College, the classes in each of the courses offered in the College of Philosophy and Letters will meet on an average of two times a week.

Until such time as plans have been worked out for the degrees of Master and Doctor, the Director of the College will be empowered to make out special programs for individuals who are prepared to do work for the above mentioned advanced degrees.

Department of Philosophy

Epistemology and logic, one full-year and two half-year courses.

Ethics and esthetics, one full-year and two half-year courses.

General Psychology, one full-year course.
Experimental psychology, two half-year courses.

History of philosophy, four half-year courses.

Philosophy of Education,
History of Art,
History of Music, -- two half-year courses selected by the student, from the above three courses.

World history, two half-year courses.

Spanish, one advanced full-year course.

Greek, Latin, French, Italian, English, or German languages -- the student must be able to translate from two of these.

Department of Sciences -- Mathematical and Physical Sciences

Higher mathematics, four half-year courses.

Mechanics,
Astronomy,
Physics,
Chemistry, -- one full-year course and two half-year courses, or four half-year courses, in any of the above subjects.

Epistemology and logic, one full-year course.

French, English, German languages -- the student must be able to translate from two of these.

The student must choose some subject for specialization and do whatever problems or laboratory work the professor of the subject assigns.

Biological Sciences

Epistemology and logic, one full-year course.

Biological chemistry, one full-year course.

Paleontology, one full-year course (preparatory course in geology is required)

Embriology, one full-year course.

General Biology, two half-year courses.

Histology, one full-year and one half-year course.

General physiology, one half-year course.

Botany, one full-year and two half-year courses.

Zoology, one full-year and two half-year courses.

General psychology, one full-year course.

Experimental psychology, two half-year courses.

Languages, translation of two languages.

Spanish, one full-year advanced course.

Laboratory work.

Department of History and Letters -- History

General history, three half-year courses (one of these may be in American history).

Mexican history, two full-year courses.

Sociology, one full-year and one half-year course.

History of philosophy,
Moral doctrines, -- two half-year courses.

History of art, two half-year courses.

Epistemology and logic

General psychology

Anthropology "

Ethnology

Prehistory -- one full-year course in two of the above.

Spanish, one full-year advanced course.

Languages, translation of two (one of which may be an American Indian language).

Department of History and Letters -- Letters

Spanish, one full-year advanced course.

Philology, one full-year course, preferably Spanish or Ibero-American.

Phonetics, two half-year courses, preferably Spanish or Ibero-American.

Spanish Literature, one full-year course in each of the epochs of Spanish literature: Medieval, Golden Age, post-Golden Age.

Spanish-American literature, one full-year course.

Mexican literature, two half-year courses.

Foreign literatures, one full-year course in either Oriental, Greek, Latin, Italian, French, Portuguese, English, American, German, Russian.

World History

Mexican History, -- two half-year courses.

History of Art, two half-year courses.

Ethics and esthetics, one full-year course.

Greek

Latin, -- two full-year courses.

Languages, foreign, two full-year courses; an American Indian language or in the language of the literature chosen above.

Comparative literature, two half-year courses.

Examinations

Examinations in the Teachers College and in the College of Philosophy and Letters are either written or oral, or the two combined, at the discretion of the individual teacher. Ordinarily, two written examinations of one hour's duration are given in each course each year.

In the Teachers College only regular and special students may take examinations; and these only if they have done all the work required in the course and been present at at least eighty