Higher education in the USSR

by

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M.G. Chilikin
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unesco
With the title Formal Programmes of International Co-operation between Universities, which is No. 37 of these documents, we introduced the subject of higher education to this series. In the Preface to that study we looked forward to further national and comparative studies leading eventually to the publication in 1963 of the fourth volume of Unesco's World Survey of Education to be devoted to higher education.

This issue constitutes the first of the national studies. The material contained in it was first presented by the three authors in the form of lectures at the International Student Seminar on Higher Education in the USSR, held at the Moscow State University in September 1959. The texts of these lectures were distributed in English, French and Russian versions at the Seminar, but it seemed to the Unesco Secretariat that the information they contained would interest a wider audience. The texts given here are, with minor changes only, identical with the French and English versions distributed in Moscow except that some additional details on programmes of study have been added to the chapter by Mr. Chilikin. Naturally the opinions expressed by the authors are their own and not necessarily the views of Unesco. The Secretariat records its thanks to the authors and to the USSR National Commission for Unesco for their co-operation in making this material available. Mr. M.A. Prokofiev is Deputy Minister of Higher and Special Secondary Education of the USSR; Professor A.G. Chilikin is Director of the Moscow Power Institute; Professor S.I. Tulpanov is Deputy Rector of the Leningrad State University.
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MAIN ACHIEVEMENTS OF THE SOVIET HIGHER SCHOOL

Much attention is given in the Soviet Union to the development of higher education. The higher school is regarded in our country as a socially necessary organization called upon to train specialists, future organizers and leaders of industry, science, culture and education. Bringing education to the broad masses of the people has been a prime element of the cultural revolution accomplished in our country after the establishment of the Soviet State.

The achievements of the Soviet system of higher education are reflected first of all in quantitative indices. At present over 7.5 million people with a higher or special secondary education are employed in the national economy of the USSR. The universities and colleges have an enrolment of 2,150,000 students. This year (1959) 342,000 people will be graduated by universities and colleges and 477,000 new students will be enrolled.

Our special secondary educational establishments have a student body of 1,797,000. Every year the country is getting many new industrial technicians, elementary school teachers, doctor's assistants and junior agronomists. The Soviet Union, thus, has a vast army of students. There are about 20 students of higher and special secondary educational establishments per 1,000 of population in our country.

The higher school is closely connected with the national economy and reflects the processes taking place in it.

The rapid industrialization of the country has required an increase in training of engineers. The organization of collective farms and State farms, which created good prerequisites for introducing new machinery in agriculture, raising labour productivity and mechanizing labour consuming jobs, demanded a steep increase in the training of specialists for agriculture both in old lines and new (mechanization of agricultural production, etc.). The higher school had to take into account the prospects for the development of science, education, the public health services and culture, increasing the training of personnel correspondingly.

The following figures give an idea of the expansion in personnel training by universities and colleges: in 1914 there were 127,000 students in Tsarist Russia, in 1940 their number in the USSR increased to 812,000, in 1950 to 1,247,000 and in 1959 to 2,150,000.

A large number of students obtain an education in the humanities and the general sciences and technical, agricultural and medical education has been greatly developed, as seen from the following table:

<table>
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<tr>
<th>Higher educational establishments</th>
<th>Number of students in thousands</th>
<th>Number of students per 1,000 of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical colleges</td>
<td>837.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Agricultural colleges</td>
<td>247.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Medical colleges</td>
<td>167.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Higher educational establishments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the humanities and general sciences</td>
<td>927.5</td>
<td>4.4</td>
</tr>
<tr>
<td>(universities, educational, cultural and other colleges)</td>
<td></td>
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</tbody>
</table>

The rapid development of new industries has demanded an increase in the number of specialists in mechanization and automation, organic chemistry, radio-physics and electronics, computing techniques, nuclear processes and some other fields.

At present the higher school satisfies in the main the country's requirements in specialists. While increasing the number of specialists trained, we have to bear in mind all the time the need to improve the quality of higher education. Life is constantly presenting new, higher demands on the specialists.

Ties with life are characteristic of the Soviet educational system since its very inception. That our educational system has scored certain successes in this respect has been confirmed by such an unbiased observer as Rabindranath Tagore who, after visiting our country, wrote in one of his letters:

"The educational system here is founded on a living basis. I have always said that education must be brought close to life. Divorced from life, it becomes dead capital, ceases to be beneficial."

Our higher educational system has organized the training of specialists who combine knowledge in such seemingly far removed fields as philology and mathematics, when a linguist studies mathematical subjects in order to work subsequently on "translating machines", or economics and mathematics for subsequent work in an economic calculations bureau served by electronic machines, etc.
The fact that it is able to train specialists in any sphere of knowledge is an indisputable achievement for the Soviet higher school.

SOVIET UNIVERSITY - HIGHER EDUCATIONAL INSTITUTION OF A NEW TYPE

The Soviet State has always displayed constant concern for the development and improvement of higher education. The Central Asian, Byelorussian, Dniepropetrovsk, Irkuts, Gorky, Tbilisi, Azerbajanian, Yerevan and a number of other universities were organized in the first years after the Great October Socialist Revolution and the Civil War. The Soviet Government, under the guidance of the father of our State, V.I. Lenin, laid solid foundations for the development of higher educational establishments, setting before them the task of training from among the working people highly qualified specialists for different branches of the national economy, science, culture and education.

The higher school system received from the State everything necessary for its development. The State bears all the expenses involved in the construction of buildings, their provision with equipment, payment of salaries to professors and instructors, maintenance of students, and many other expenses, appropriating large sums from the budget for these purposes. Thus in 1959, 94,500 million roubles have been allotted for the needs of general and higher education. Let us note for the sake of comparison that appropriations for State administration expenses amount to 11,500 million roubles. This means that the Soviet Union is spending approximately 8.5 times as much for education as for State administration.

State expenditures for education are growing steadily: in 1940 they amounted to 22,500 million roubles and rose to 56,900 million roubles in 1950. In 1959 they are 4.2 times as large as in 1940 and 1.7 times as large as in 1950.

In addition to direct expenses on education the State is systematically rendering other forms of assistance. State-owned plants, scientific organizations and institutions give students the opportunity of becoming thoroughly acquainted with the technology of production and helping them to acquire practical skills. These organizations have a right to turn over equipment free of charge to universities and colleges. The State provides land for experimental agrobiological stations and experimental farms of agricultural institutes and also plots for the construction of building and other premises.

In a Socialist State a university serves society, enjoys its support and herein lies its strength. Our people are building a Communist society, where all members are equal, have equal rights and duties before society, where their vital requirements will be fully satisfied. Future Communist society will open boundless vistas for the cognition of the objective laws of nature and social phenomena, for the development of science, education and culture.

A university in a Socialist country is first of all an educational establishment training highly qualified specialists, brought up in the spirit of selfless service to the people who are building a Communist society.

Some foreign circles hold the view that universities need autonomy, that they have to be independent of society and the State, the view that the task of universities is to propagate knowledge, irrespective whom this knowledge serves.

Such views frequently express the desire of progressive scientists to escape from the thrall of prevailing bourgeois ideology and views. Objective studies of the material world lead a scientist to materialistic conclusions which do not tally with the official ideology prevailing in the bourgeois world. Hence the "search of seclusion", the protest against the coercion over science.

But let us turn to the facts. Any university is bound by thousands of threads with society, with the State. It itself is a product of this society. The idea of the autonomy of the university is an abstraction although it is frequently cloaked in the garb of florid phrases.

The facts persistently prove that any university tries to mould and educate a young specialist in accordance with the wishes of the ruling class, a specialist who would loyally serve that class.

Some foreign colleagues think that a system of State maintained higher educational establishments can lead to a denial of the active role of the university in society, since it inevitably has to adhere to the "State" ideology. There is a healthy kernel in this view, namely, recognition of the influence of the State on the university. Indeed, a State will exert its influence in all cases, irrespective of whether it is a State, private, religious or any other university. Lenin, speaking at the First All-Russian Congress on Education, rightly said: "A school outside of life, outside of politics, is a lie and hypocrisy."

What matters is not whether the State influences the university or not, but in what direction it influences it. The Soviet State is concentrating its efforts on the utmost improvement of the people's well-being, the progress of science and the arts, on educating the young generation through work, in the spirit of respect for all the nations.

In our society there is no contradiction between the State and the people, between the State and science, between the State and the university.

The State demands of the university faculties constant improvement of the quality of specialist training, development of research, demands that young people be brought up who do not brook complacency and want to explore uncharted fields.

The universities and colleges of the USSR are distinguished for:

(a) **The accessibility of higher education**

The higher school trains intellectuals and the
quality of its work depends on whether it is able to
draw the most talented students from the widest
possible circle of people, regardless of their
property and social status or race. In our opinion
a higher education must be accessible to all who
have the necessary knowledge.

(b) Deep scientific level of instruction

Any science is based on the objective laws of
development of the material world in the case of
the natural sciences or the objective laws of
development of human society in the case of the
humanities. Scientists disclose these laws, learn
on their basis how to control nature, learn how to
apply rationally in their activities the laws govern-
ing the development of human society.

Everything that helps to reveal the objective
processes taking place in nature and society, in
our opinion, can be taught in a university audit-
orium. It is understood that such a system of
education, far from precluding, presupposes the
study of scientific hypotheses. But their relative
value must be stressed. Sooner or later they will
have to pass the test of practice and either be
asserted as laws or discarded.

(c) Bonds of the higher school with life

The higher school sets itself the task of training
specialists who must find a definite place in the
national economy in conformity with their education
and abilities. More than that, the higher school
system guarantees each graduate work in his line.

Universities and colleges judge the efficacy of
their activities first of all by the way their gradu-
ates work, what benefit they bring to the people.
The higher school serves the people, society, it
does not stand above them.

HOW IS THE ACCESSIBILITY OF A
HIGHER EDUCATION ENSURED?

Higher school workers most frequently share the
view that any capable person should have the oppor-
tunity of following higher education. But frequently
the problem of accessibility of higher education to
the people is turned merely into a theoretical prob-
lem. The main element in this problem is: what
practical measures can ensure the people the
actual opportunity of receiving a higher education.
In our country the State ensures the accessibility
of higher education by a number of measures. We
shall mention the most important of them. The
universities will develop successfully if they are
able constantly to draw from among talented people
students who received a sufficient education for
mastering the sciences they teach. The Soviet
school ensures such a possibility. The Soviet
Union has introduced compulsory eight-year educa-
tion and is promoting full secondary education (10-
11 years) in every way. Tuition in schools is free
of charge. Our educational system has no "dead
end" schools, all links of the educational chain
are interconnected and the pupils pass them con-
secutively. Graduation from any type of second-
ary educational establishment gives the right to
enter a university or college. In 1959 secondary
schools and similar educational establishments
graduated more than 1,400,000 young people
Universities and colleges enrolled 477,000 new
students. Thus, institutions of higher learning
were able to select one out of every three
secondary school graduates.

Enrolment in universities and colleges is done
on the basis of the personal achievements of the
applicant: his abilities in the sciences (tested at
competitive, entrance examinations), his partici-
pation in work. The best are selected. There
are no restrictions for national, social or any
other reasons.

Free tuition determines the accessibility of
higher education. Students in a Soviet university
or college do not pay anything for lectures, labora-
tories, practical training, for examinations. They
have a right to free medical service, free use of
textbooks, study aids, books, and also athletic
facilities and gear (musical instruments, games,
etc.).

Students receive accommodation in hostels and
meals at reduced prices in canteens. Part of the
expenses are covered by university and college
administrations. Most of our students (over 80
per cent) receive free State assistance in the form
of stipends. Any capable student, even if he gets
no material assistance from his relatives, is able
to get along on the stipend received from the State.

It would seem that in a multinational country
like ours language could be a serious barrier to a
higher education. Prior to the October Revolution
the ruling circles of Tsarist Russia, by instituting
tuition in universities in the Russian language only,
kept back the influx of non-Russian young people,
small as it was. Now a network of higher educa-
tional establishments has been set up in all the
Union Republics. Students are able to receive
higher education in their native language.

The accessibility of higher education is also
determined by the wide development of evening
studies and studies by correspondence. At present
45 per cent of all Soviet students follow higher
education while working. In future these forms of
education will be further developed.

The State is rendering additional assistance to
those who study in universities and colleges while
working.

In July 1959 the USSR Council of Ministers
adopted a special decision on extending privileges
to those who combine work with studies. Under
this decision, students of the first years receive
a leave of one month in addition to the regular
annual holiday given to all workers. In senior
years the leave is increased to forty days. At the
end of studies they are freed from work for a
period of up to four months to prepare their
How do our universities and colleges achieve a deep level of instruction in the sciences?

Soviet higher educational establishments devote much attention to the theoretical grounding of future specialists. Much time is given to lectures, laboratory work and scientific seminars in the curricula of any specialities. In the case of students of a university mathematics department lectures on various mathematical, physical and humanitarian sciences take up 2,380 hours, laboratory and practical work over 1,650 hours. Physicists have 1,900 hours of lectures and about 2,300 hours of laboratory studies and practical work. Attention is devoted to methodology with the object of finding such forms of the instruction process as would ensure a sufficiently high level of specialist training. Problems of methodology are systematically discussed in scientific councils of universities and colleges. This is important because the rapid growth of enrollments could affect the quality of training.

A definite minimum of requirements for a university diploma has been established by the State in our system of higher education. This minimum is determined by the list of subjects to be studied by future specialists and the scope of knowledge required in each subject. The list of the subjects and the scope of knowledge are recorded in the curricula and annual study plans which are drawn up by groups of specialists.

These are revised from time to time and this provides a guarantee that any specialist graduated from a Soviet university or college has a definite minimum of scientific knowledge.

Some foreign colleagues who studied our educational system say: "Yes, you ensure a good education, for the 'average' man. But where is academic freedom, where is individual work?"

It seems to us that if we stick to firm ground in training the specialists society needs, the very fact of a sufficiently high level of training of the "average" specialist is of considerable importance.

On the other hand, our professors are interested in developing the individual distinctive abilities of young people, which would enable them to exceed the necessary minimum by a big margin. We, to no lesser extent than our foreign colleagues, are interested in bringing to light talents and creating conditions for their development. It is necessary to distinguish the obligatory minimum in the theoretical grounding of students, which makes it possible to preserve a high "average" level of education, from the sum total of measures which mould the young specialists.

The quality of specialist training largely depends on who reads lectures, conducts laboratory work and guides the practical work of the students. Universities and colleges strive to enlist in their faculties eminent scientists, talented engineers, trail blazers in industry and agriculture.

The proper combination of a broad general scientific education with deep knowledge of the narrower speciality has always held an important place in the development of the higher school. A specialist, well prepared in a narrow field, will know much more thoroughly a definite section of science, but will always be limited in his creative work by the absence of knowledge of contiguous and allied sciences. But the process of development of production, together with a sharp differentiation between branches of industry, is characterized by the mutual penetration of different sciences in the practical activities of man (for example, electronic and computing techniques in engineering, radio-active radiations in the antibiotic industry, etc.).

At the same time a specialist who assimilated only general problems of science, but has not studied their concrete applications, may suffer from such encyclopedic knowledge, owing to the inability to apply the conclusions of science to a definite sphere of activity.

As a rule, curricula in all specialities contain two cycles of subjects. In the first period of studies, for 3 - 3.5 years, general scientific subjects are studied, which serve as a basis for subsequent deeper penetration into a narrower branch of science and technology. Thus, a student of a chemistry department takes up, in the first years, inorganic, organic, physical, colloidal and analytical chemistry, mathematics, physics and a number of other subjects, and in second stage delves deeper into a narrower speciality (polymers, radio-chemistry, chemistry of proteins, etc.).

Seminars hold an important place in studies. Discussions of problems of science develop a critical approach to contemporary achievements. Students learn to argue with the object of deeper cognition of phenomena.

The level of training also depends on the extent to which a university succeeds in educating a harmoniously developed specialist who will know not only the sphere he chose, but also have a broad education in the humanities. His activities will be all the more effective if he has a knowledge of the
history of society's development and the laws governing this development. It is not the man who only believes in a better future who will work with great enthusiasm, but the man who knows the inevitability of the victory of the new social system, which follows from the objective laws of social development. This faith can be shaken, but the laws of social development can never be shaken. Our universities attach great importance to the study of the laws of social development, to the humanitarian education of the students, to the development of man as such.

Let us examine questions of the humanitarian education as applied in such a strictly specialized Institute as the Mendeleev Chemico-Technological Institute in Moscow which trains technological engineers. Each student of this institute studies a cycle of social sciences: philosophy, political economy and history. They study the primitive-communal, slave, feudal and capitalist systems, the history of Russia and the USSR, the development of the Communist movement. They learn the laws of monopoly capitalism, study the Socialist mode of production, the gradual transition from Socialism to Communism. They learn the history of development of philosophical ideas, beginning with slave society up to our days. Usually students begin with the philosophical views of Lao-Tse, Wang Kung, Heraclitus, Democritus, Plato, Aristotle, Epicurus, Lucretius and others. Students must have an idea of the philosophical views of the outstanding natural scientists and philosophers of the past such as Leonardo da Vinci, Copernicus, Bacon, Spinoza, Leibnitz, Hume, Voltaire, Kant, Hegel. They study the works of Russian revolutionary democrats, Herzen, Belinsky, Pisarev and others. Marxist-Leninist philosophy is examined in detail in lectures and at seminars. Students learn of contemporary idealist trends and philosophy: neo-positivism, existentialism, neothomism and others.

It should be stressed that education in the humanities is not given only in the auditorium. It also holds an important place in activities outside auditoriums – the reading of books and discussions. At times such disputes draw many students. Our institutes have libraries with a big stock of belles lettres which any student can use free of charge. Visits to art shows, concerts and plays are frequently organized.

All the activities in the higher educational establishments are so arranged as to mould the student into a man of creative endeavour, develop his gifts, and not only supply him with a definite store of knowledge, even though the most up to date. Much attention is given to research work by students. In their first years students under the guidance of professors and instructors of the respective chairs, take up separate problems, make abstracts of new works and exchange opinions on the material examined. Senior year students are drawn into experimental work in scientific laboratories, they engage in designing, study archive materials, etc.

Almost each university or college has a Student Scientific Society. In Moscow University it numbers 5,300 members, in the Moscow First Medical Institute 1,500 and in the Urals Polytechnical Institute 3,000, etc.

To stimulate student research inter-university contests and exhibitions of the best student works are arranged annually in many cities, with many students taking part. The best works are awarded premiums and certificates. Research work helps to bring out the most talented students capable of advancing science and technology and deepens their knowledge.

HOW IS THE BOND OF THE HIGHER SCHOOL WITH LIFE ENSURED?

Bonds of the higher school with life, with practical work, proceeds along many lines and it infuses all the activities of any university or college. The instruction process is so arranged that students should learn the latest achievements of science and technology, master practical methods of directing production processes, accumulate executive skills, develop a critical attitude to the achievements of science and technology and seek for new discoveries.

A countrywide discussion of the ways for bringing the educational system still closer to life was conducted in the Soviet Union this year. The Supreme Soviet of the USSR and the Supreme Soviets of the Union and Autonomous Republics have discussed and adopted corresponding laws. In conformity with these laws, a preferential right to enter a university or college is given to persons who possess the necessary knowledge and, having worked, gained labour skills in the sphere of material production. All senior year students are sent for practical work for a long period, up to one year, in industry or agriculture, scientific establishments or schools, depending on their specialty. Here they test their abilities and knowledge at a definite section of work, learn and acquire practical experience. During the period of practical training the students get wages, in conformity with the job they hold, and they bear full responsibility for the work assigned to them.

In many specialties (engineering, some of the humanities), students who enrolled, without having worked in the given or allied field, combine studies with regular work at a plant or office during the first one or two years. We attach very great importance to such labour education and the acquisition of work skills in the simplest operations. In agricultural, geological and some other specialties the combination of work and studies is arranged in seasons: in the spring and summer season students work and in the autumn and winter season they study.

Studies in most universities and colleges and with the defence of a diploma project or diploma work before a State examination commission.
Professors and instructors strive to arrange things so that students should choose works needed by the national economy as subjects for their diploma projects. In architectural and building institutes and colleges these are designs of buildings and installations, which are to be erected; in machine building colleges designs of machines and instruments which are to be produced; in university departments of natural science and the humanities these are studies of some aspect of a problem which contributes to the progress of contemporary science. Such a system helps to bring higher education closer to life, to practice, inspires the young specialist, because he sees an embodiment of the results of his labour.

The close bonds of practice and theoretical instruction will be achieved in the combination factory-college, where periods of study will regularly alternate with practical mastery of labour operations that gradually become more intricate, and in the last years with the management of production.

The total enrolment of Soviet universities and colleges is determined by the requirements of the national economy in specialists. This is an important factor in strengthening the bonds of the higher school with life. We plan enrolments in universities and colleges with quite a high degree of accuracy. The plan for training personnel of the highest qualification is one of the essential elements of the national economic plan. In 1958-1965 the Soviet higher school has to train 2,300,000 specialists as compared with 1,700,000 in the preceding seven years (1952-1958). Secondary special educational establishments will enrol during these years over four million students.

Some of our foreign colleagues wonder: how is it possible to plan the training of specialists in different fields. Our colleagues forget the planned nature of our society. We know, for example, how many new hospitals, polyclinics, sanatoria and other medical establishments we will have in five, six or seven years, from now. The seven-year plan of the public health services, for example, allots 25,000 million roubles for the building of hospitals and polyclinics, which will make it possible to add 2.5 times as many beds in hospitals as compared with the number commissioned in the preceding seven years. Knowing this, it is not difficult to estimate the needed number of physicians.

Our country plans how many new factories, of what capacities and in what places, are to be built in the chemical, engineering or any other industry.

The national economic plan for 1959-1965 envisages, for example, the production in 1965 of 190,000 - 200,000 metal cutting machine tools, of 65-70 million tons of pig iron (an increase of 64-77 per cent), 86-91 million tons of steel. The total output of the chemical industry in 1959-1965 will increase threefold compared with the preceding seven years. On the basis of these data it is possible to determine the number of specialists needed. Account has to be taken of the replacement of specialists at operating plants in view of the retirement of some on pension and for other reasons.

Our country has a plan for the development of the school system in the form of a concrete programme by years. This plan serves as the basis for drawing up the teacher training programme. Life shows that if the national economy, culture, education and the public health services are planned it is possible to plan successfully the training of specialists, as well.

Some colleagues from capitalist countries are anxious whether under this system the rights of man to an education are not infringed? Is it right, they usually ask, if 15,000 young people, say, want to study law, while you accept only 8,000? We shall reply to this question by another question: Do you think it right if the higher school graduates several thousand lawyers who are not able to find work in their line? Are not there enough tragedies of this kind in the capitalist world? Is it not more democratic to tell a young man to think of another specialty rather than to train him to be a 'superfluous' specialist?

If it is only a matter of satisfying a thirst for knowledge in some sphere of science, this can be done in special groups, organized at university departments, for the study of separate subjects, combining this study with useful work. I am not speaking already of the huge network of all kinds of courses, advanced training groups, lecture auditoriums, etc., where anyone can augment his knowledge.

The bond of a university or college with life is also achieved through the participation of professors and instructors in research important for the development of science and the economy. Our universities and colleges accomplish a huge volume of research work, with some of the investigations being done on contract with industrial or agricultural enterprises. The laws of our State encourage the application of the results of research in production. Frequently economic councils or plants organize at their own expense laboratories at universities or colleges for the study of some separate problem. On the other hand, higher educational establishments enlist eminent production specialists as instructors.

The prestige of an educational establishment in our country depends first of all on how strong its bonds are with life, and consequently how well it trains specialists, capable of bringing benefit to the people, what contribution they make to the progress of science and technology.

I have spoken about the main principles of higher education in the USSR. The Soviet higher school is faced with many important tasks on which it has to work. Implementation of the law on bringing the higher school closer to life will require much effort on the part of professors and instructors. We have to improve considerably aid to correspondence students (organization of lectures
over the radio and TV). The organization of modern laboratories in new fields will require the exertion of material and intellectual effort. In some areas of our country new colleges will have to be set up.

Workers of the Soviet higher school are striving to improve it further. That is why they are interested in the practical examination of the state of higher education in our country.

INTERNATIONAL TIES OF THE SOVIET HIGHER SCHOOL

The peoples of all countries are interested in the development of science and higher education. The laws of science (if they are really such) are equally valid on the European, American or any other continent.

The Soviet higher school strives to maintain broad international contacts. Many of our universities, scientists and students take an active part in all kinds of international unions, conferences, symposiums and meetings. No few foreign scientists have attended our national conferences. A number of international congresses have been held in the USSR.

Libraries and other establishments of our universities are conducting a regular and active exchange of scientific literature. The Moscow University Library, for example, is regularly exchanging publications with 270 universities and other scientific institutions of 54 countries.

Soviet higher educational establishments exchange professors with many universities. In recent years lectures in our country have been read by Professor A. Todd (Britain), Professor Van-Vleck (United States of America), Professor Rosenquist (Norway), Professor Chatterjee (India), Professor Kreanga Jon (Rumania), Professor Yeng Chi-ta (People's Republic of China), Professor Braudel (France), Professor T. Condo (Japan) and many other scientists. On the other hand, many Soviet professors read lectures in foreign universities.

Soviet universities and colleges have several thousand foreign students who train in many diverse specialties.

The Soviet Union has agreements with a number of States on training students in the USSR. Some of these agreements call for the training of students in the USSR, with the respective country covering the expenses. In other cases student exchange agreements are based on the principle of reciprocity. The living conditions of such students are determined by the agreements.

Some international organizations have scholarships in our higher educational establishments. Among them are the United Nations Trusteeship Council, the International Union of Students, the International Atomic Energy Agency. Scholarships are appointed by decision of these organizations.

In the 1958-1959 academic year representatives from 47 countries studied in Soviet universities and colleges. If we take into account the fact that the Soviet student body includes representatives of all the peoples of the USSR, we get a good idea of the vast diversity of nationalities in the Soviet higher school.

Our university students gladly go to other lands. They study in many countries.

The Soviet higher school pursues the policy of extending contacts on the basis of the principles of reciprocity in order to develop science and education for the good of the people, in the name of world peace.

The higher school of our country has entered a period of intensive development, consolidation of its bonds with life, and improvement of its work. Humanity stands on the threshold of new outstanding discoveries. The time is not far distant when man will conquer outer space, and the era of nuclear power will arrive. On the basis of the laws of nature man will learn how to make better use of the energy of solar radiation. Mankind will achieve successes in the better organization of society, where there will be no exploitation. The talents of the people will blossom forth to the full. Higher education serving noble aims - the propagation of science, its progress and the upbringing of young scientists - will be further developed.
APPENDIX I

STATISTICS OF HIGHER EDUCATIONAL ESTABLISHMENTS

A. NUMBER OF HIGHER EDUCATIONAL ESTABLISHMENTS AND STUDENT ENROLMENT

The Soviet Union has now 766 higher educational establishments with an enrolment of 2,150,000 students.

Distribution of Higher Educational Establishments and Enrolment by Republics

<table>
<thead>
<tr>
<th>Number of educational establishments 1958/59</th>
<th>Number of students, thousands 1958/59</th>
</tr>
</thead>
<tbody>
<tr>
<td>USSR, total</td>
<td></td>
</tr>
<tr>
<td>of which:</td>
<td></td>
</tr>
<tr>
<td>Russian Federation</td>
<td>766</td>
</tr>
<tr>
<td>Ukrainian Republic</td>
<td>443</td>
</tr>
<tr>
<td>Byelorussian Republic</td>
<td>140</td>
</tr>
<tr>
<td>Uzbek Republic</td>
<td>25</td>
</tr>
<tr>
<td>Kazakh Republic</td>
<td>31</td>
</tr>
<tr>
<td>Georgian Republic</td>
<td>19</td>
</tr>
<tr>
<td>Azerbainian Republic</td>
<td>15</td>
</tr>
<tr>
<td>Lithuanian Republic</td>
<td>12</td>
</tr>
<tr>
<td>Moldavian Republic</td>
<td>8</td>
</tr>
<tr>
<td>Latvian Republic</td>
<td>9</td>
</tr>
<tr>
<td>Kirghiz Republic</td>
<td>9</td>
</tr>
<tr>
<td>Tajik Republic</td>
<td>7</td>
</tr>
<tr>
<td>Armenian Republic</td>
<td>11</td>
</tr>
<tr>
<td>Turkmen Republic</td>
<td>6</td>
</tr>
<tr>
<td>Estonian Republic</td>
<td>4</td>
</tr>
</tbody>
</table>

B. GROWTH OF STUDENT BODY

<table>
<thead>
<tr>
<th>Year</th>
<th>Student Body, thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>127.4</td>
</tr>
<tr>
<td>1940</td>
<td>811.7</td>
</tr>
<tr>
<td>1950</td>
<td>1,247.4</td>
</tr>
<tr>
<td>1959</td>
<td>2,150.0</td>
</tr>
</tbody>
</table>
### C. SHARE OF EVENING AND CORRESPONDENCE STUDENTS IN TOTAL ENROLMENT

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Evening students</th>
<th>Correspondence students</th>
<th>Proportion of students in evening and correspondence colleges and departments to total enrolment (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958/59</td>
<td>153,300</td>
<td>812,400</td>
<td>45.3</td>
</tr>
</tbody>
</table>

### D. DISTRIBUTION OF STUDENTS IN DIFFERENT SPHERES

<table>
<thead>
<tr>
<th>Type of Education</th>
<th>Student enrolment, thousands 1958/59 academic year</th>
<th>Share in total enrolment (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities (Universities, pedagogical, law, economic and art colleges)</td>
<td>927.5</td>
<td>41.3</td>
</tr>
<tr>
<td>Technical</td>
<td>839.0</td>
<td>39.4</td>
</tr>
<tr>
<td>Agricultural</td>
<td>247.0</td>
<td>10.8</td>
</tr>
<tr>
<td>Medical</td>
<td>166.9</td>
<td>8.5</td>
</tr>
</tbody>
</table>

### E. GRADUATION OF SPECIALISTS WITH A HIGHER EDUCATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>10,700</td>
</tr>
<tr>
<td>1940</td>
<td>126,100</td>
</tr>
<tr>
<td>1950</td>
<td>176,900</td>
</tr>
<tr>
<td>1959</td>
<td>342,200</td>
</tr>
</tbody>
</table>
APPENDIX II

TYPES OF HIGHER EDUCATIONAL ESTABLISHMENTS

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>40</td>
</tr>
<tr>
<td>Technical colleges</td>
<td>204</td>
</tr>
<tr>
<td>Agricultural colleges</td>
<td>99</td>
</tr>
<tr>
<td>Pedagogical colleges</td>
<td>208</td>
</tr>
<tr>
<td>Medical</td>
<td>80</td>
</tr>
<tr>
<td>Other</td>
<td>136</td>
</tr>
</tbody>
</table>

APPENDIX III

MATERIAL POSITION OF STUDENTS

Most students of Soviet universities and colleges receive a State stipend.

Amount of monthly stipend roubles *:

<table>
<thead>
<tr>
<th></th>
<th>First year</th>
<th>Second year</th>
<th>Third year</th>
<th>Fourth year</th>
<th>Fifth year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>275-434</td>
<td>330-525</td>
<td>331-562</td>
<td>331-562</td>
<td>362-600</td>
</tr>
</tbody>
</table>

The State provides the students free of charge with:
- the use of books, journals and textbooks in university or college libraries;
- laboratories and materials for laboratory work of all kinds;
- medical service and hospital treatment;
- use of university or college athletic facilities and gear.

The State renders student help:
- in getting accommodations to sanatoria and holiday homes;
- in organizing various tourist trips, etc.

A Soviet student pays 15 roubles a month for accommodations in a hostel.

* The figures are expressed in old roubles; from 1 January 1961 the value of the new rouble became equal to 10 old roubles.
APPENDIX IV

INTERNATIONAL TIES OF SOVIET HIGHER SCHOOL

List of countries with which Soviet universities and colleges exchange students on the basis of agreements:

1. People's Republic of Albania
2. People's Republic of Bulgaria
3. Hungarian People's Republic
4. Democratic Republic of Viet-Nam
5. German Democratic Republic
6. People's Republic of China
7. Korean People's Democratic Republic
8. Mongolian People's Republic
9. Polish People's Republic
10. Rumanian People's Republic
11. Socialist Republic of Czechoslovakia
12. United Kingdom
13. Iraq
14. United Arab Republic
15. United States of America
16. France

List of international organizations which have scholarships in Soviet universities and colleges:

SOVIET ACHIEVEMENTS IN SCIENCE AND TECHNOLOGY

There has never been a lack of talent among the Russian people. In science and technology fame has been won for our country by the founder of Russian science Mikhail Lomonosov, the outstanding mathematician Lobachevsky, the physicist Lebedev, the author of the periodic law of chemical elements Mendeleev, the inventor of the radio Popov, the father of modern aviation Zhukovsky, the creator of rocket dynamics and space flights Tsiolkovsky, and many others. Most Russian scientists and inventors shows a hard life and an uphill struggle for the recognition of discoveries and inventions. Heroes in the true sense, they selflessly combated stagnation, ignorance, and a bureaucratic attitude to science and technology. To a large extent the underdeveloped industry of pre-revolutionary Russia belonged to foreign capitalists and was headed by foreign engineers.

The Great October Socialist Revolution fundamentally changed the situation in science and technology. The building of a Communist society was put on a scientific basis.

During the bitterest years of the Civil War and the attendant ruin, Vladimir Lenin, founder and leader of the Communist Party and the Soviet State, mustered the Russian technical intelligentsia to work out the scientific and technical principles of economic development and of a plan for the country's electrification. This great plan was put into effect under his direct guidance. Lenin took a personal interest in the construction of the first Soviet power stations: the Volkhov and the Shatura. He dreamt of the day when a hundred thousand tractors would be in operation in the country's fields.

Lenin showed a constant concern for the progress of science and technology in the USSR for the creation of the best conditions for the work of scientific institutions and scientists, particularly the world famous physiologist Pavlov, the botanist Timiryazev and others.

Among intellectuals there were different views about the rise of a workers' and peasants' government. Most of them immediately placed themselves at the service of the people and together with the working class set about restoring destroyed factories and mills, mines and railways.

To expedite the rehabilitation of the country's economy it was necessary to adopt urgent measures to train young specialists. The country had to build up a new people's intelligentsia. In those days this was done by sending the best workers to Workers' High Schools and then to Institutes. By the thirties this led to the rise of an engineering intelligentsia of the working class.

The aim of the Soviet State was not only to restore industry and agriculture but also to create a Socialist economy. For that reason industrialization received priority. In 1929 the country started out on the famous First Five-Year Plan of Economic Development. In spite of the mockery of sceptics, this plan was carried out in four years. It was followed by other five-year plans. They were carried out by the workers and peasants, by the working intelligentsia of the Soviet Union, who built new factories and mills, mines and towns, and reorganized agriculture and furnished it with new technical equipment.

The period of the pre-war five-year plans saw the building of the Dnieper Hydropower Station, the Magnitogorsk Iron and Steel Works, the Stalingrad Tractor Works, the Rosselmash Works, the Moscow and Gorky auto works, the towns of Komsomolsk-on-Amur and Khibinogorsk (the latter standing within the Arctic Circle) and many thousands of factories, mills and State farms. Long shipping canals were constructed. Moscow became a port of three and then of five seas. All these projects were worked out and directed by Soviet scientists and engineers.

Economic development was temporarily cut short by World War II. The factories evacuated to the Eastern areas were sited in new locations and produced steel, rolled stock, tanks, aircraft, guns and ammunition. Unparalleled heroism was displayed not only by men of the Soviet Army but also by workers and engineers, farmers, intellectuals, young and old people, men and women whose selfless labour brought ultimate victory over Fascism.

The results of the war are known to all. Jointly with the troops of the Allies, the Soviet Army defeated Hitler Germany and militarist Japan. Socialism became a world power.

When the war ended, the Soviet people speedily healed their grave wounds and set out to achieve a further development of their national economy. Soviet economic successes are not only quantitative but also qualitative. Let us cite a few examples.

1. Electrification is the basis of all technical progress and of greater technical means at the
The whole world knows of the TU-104, the latest passenger jet airliner, which covered the distance from Moscow to London in five hours and from Moscow to Peking in 10 hours 30 minutes. Today, the Soviet Union has the world's biggest airliner, the TU-114, which carries 180-220 passengers.

4. The achievements of Soviet science are known the world over. The Soviet Union has built and is using a 10,000 million electronvolt proton synchrotron, the most powerful in the world. This unique technical structure for nuclear physics embodies the achievements of many sections of science and engineering, for example, radio electronics and automation, instrument making, machine building and metallurgy. Soviet physicists are advancing successfully in the field of guided thermonuclear reactions.

Outstanding works in mathematics, physics, chemistry and other sciences have been marked with Lenin prizes.

Nobel prizes have been awarded to Soviet scientists: the chemist Semyonov for investigations in the sphere of chain chemical reactions, and the physicists Cherenkov, Tamm and Frank for their discovery and theoretical treatment of the Cherenkov effect.

World-wide attention has been won by the Kapelyushnikov turbodrill which is used for deep wells. The Bhilai Iron and Steel Works in India, the huge Asswan Dam in the United Arab Republic and other projects are being built in accordance with blueprints produced by Soviet specialists. There are many other examples showing world recognition of the Soviet Union's scientific and technological achievements, but it would probably be more interesting to learn how technical progress is brought about in our country.

ENGINEERING CADRES ARE THE FOUNDATION OF TECHNOLOGICAL ACHIEVEMENT

In the Soviet Union technological progress rests on the planned development of the Soviet State. Planned Socialist economy includes the training of highly skilled specialists.

Planned training of engineers is a complex task. It must be borne in mind that five or six years must pass before an engineer is trained. Consequently, we have to draw up long-range plans which take account of the development of individual sections of industry, the growth of labour productivity, the degree of mechanization and automation in industry, the natural decrease in existing cadres, the rise of new branches of the national economy, and other factors.

The material for drawing up plans for the training of cadres are supplied by ministries, economic councils and government departments. They are generalized by the State Planning Commission of the USSR and then the State plan for the training of engineering cadres is sent to the Ministry of Higher Education of the USSR for fulfilment.

The size of the enrolment contingent is changed and new chairs, departments and institutes are opened in conformity with the requirements of the national economy. At the same time serious
attention is given to the development of higher education in all Union Republics.

To maintain a high level of scientific and technical training, to enable engineers to work not only in long established sections of industry but also in industries which we call "new technology", the graduates of institutes must have a broad world outlook and in the study process students must be taught to look to the future, to feel the prospects of development in their sphere of technology.

This is achieved in various ways: curricula, programmes and the content of the courses are systematically revised; vacancies are announced every five years to augment the teaching staff with fresh blood; leading practising specialists are enlisted into the work of the institutes and this makes it possible to take the requirements of industry into account; teachers carry on research to meet the demands of the national economy and this raises their scientific qualification; lastly, competitive entrance examinations allow selecting the most capable young people. These measures keep the training of young engineers on a high level. The most successful students are drawn into the research work of the department and share in the work of the Student Scientific Society. During the last stage of the educational process, students work on a diploma project which usually reflects some real task confronting industry. In the diploma projects students frequently deal with a new problem in some branch of the national economy.

In distributing young engineers in the various fields of practical work, special attention is given to the selection of specialists for spheres of new technology. The capable young engineers who have shown their initiative and abilities during their years of study are sent to work in these spheres.

It is this combination of the activity of talented, carefully trained young people with the work of experienced engineers and scientists that ensures new technology with swift development.

A multi-branched national economy requires a numerous army of specialists. The following shows how many institute and secondary school trained specialists there now are in the country: in 1913 there were less than 200,000, but at present their number has reached the 7.5 million mark. In 1913 there were 182,000 students at the institutes and technical schools, but today there are more than 4 million students.

The mass character of general education and the rapid rise of the cultural level of the Soviet people are helping to carry out the task of turning out specialists with a higher and secondary school education.

In 1950-1965 the higher schools are to train 2,300,000 specialists, i.e. approximately 40 per cent more than in the preceding seven years. It is expected that by 1965 there will be 4,500,000 institute trained specialists, i.e. half again as many as in 1958.

The Soviet higher school draws its cadres from the people and trains them to serve the people.

Higher technical education plays an important role in the system of higher education. In 1914 Russia had only 16 higher technical schools. The children of the working people had practically no access to them. Difficulties were placed in the way of the national minorities as well.

After the Great October Socialist Revolution the Soviet Government set about organizing a number of new institutes. The door to higher technical schools was flung open to the children of workers and peasants. A broad network of Workers' High Schools, which prepared people for the institutes, were for a number of years a major source of higher school students. All the students at higher technical schools received State stipends.

The further development of the higher school in the USSR is inseparably linked up with the growth and progress of industry and transport, construction and communications, agriculture and forestry. By the beginning of the First Five-Year Plan the USSR had three times as many higher technical schools as pre-revolutionary Russia. Today there are 204 higher technical schools with 839,000 students.

ORGANIZATION OF HIGHER TECHNICAL EDUCATION

In the Soviet Union, the higher technical school is represented, mainly, by two types of institutions of higher education - polytechnical and branch.

The polytechnical institutes have many departments. They train specialists for many branches of industry in the most diverse professions: metallurgy, machine building, precision mechanics, thermal engineering, electrical engineering and power machine building, mining, chemical technology, building, shipbuilding, hydropower engineering, and so forth.

As a rule the polytechnical institutes are sited in important industrial and administrative centres. There are polytechnical institutes in the Urals, the Ukraine, Georgia, Uzbekistan, Azerbaijan, Armenia, Byelorussia, Lithuania and other Union Republics. Most of these institutes have extra-mural or evening departments, where thousands of citizens are receiving a higher technical education without discontinuing work.

The branch institutes train engineers for specific branches of the national economy and they include metallurgical, power engineering, mining, machine building, forestry engineering, communications, automobile transport, textile, chemical-technological, and oil institutes.

Soviet institutes have all the conditions necessary for the training of scientific-pedagogical cadres. The most important of these conditions is the broad opportunity that every teacher has of carrying on research. The working day of the teacher averages six hours. Two or three hours are taken up by teaching, the rest of the time is devoted to research and work in methodology.
The training of specialists is determined by

The training of candidates of science at post-

The training of specialists with a higher education, much attention is paid to instilling a Communist attitude to study and work, to the shaping in students of a scientific method of acquiring knowledge, a creative approach to mastering science, and independence in work.

People finishing the Soviet higher school are called upon to set an example in the fulfilment of State and public duties.

CURRICULA AND METHODS OF TEACHING IN THE HIGHER TECHNICAL SCHOOL

The training of specialists is determined by curricula worked out by higher institutions of learning and approved by the Ministry of Higher Education of the USSR. This makes for a uniform high scientific and theoretical level in the training of specialists.

The curriculum is made up of cycles: general theory which includes social and economic sciences; general engineering and special.

In the first three or three and a half years students take general courses in allied specialities and specialize in the last one and a half or two years, during which time they continue studying general engineering subjects.

The Soviet higher school employs various methods of teaching. The basic, guiding principle in the choice and application of these methods is the striving to develop thoroughly the individual possibilities and abilities of each student.

In the higher technical school, the educational process proceeds in the following basic forms: lectures, laboratory classes, practical classes, course work (of a research type) and course projects, study and production practice, production training, consultation, home study, diploma project, State examinations.

Lectures are the leading link of the educational process, and take up close to 50 per cent of the study time.

The rest of the above-listed forms of the educational process are such that the teacher plays an auxiliary rôle and the independent work of the student predominates. The purpose is to develop initiative and independence, to cultivate a love for books, experimentation and work.

Laboratory classes and scientific work play a large rôle in developing independence on the part of the students. The technical higher school does its utmost to promote and extend the circle of participants in scientific research and extend the circle of participants in it. In this connexion, most of the students share in the work of scientific circles guided by professors.

Public reviews and contests of student scientific activity are held annually in towns and institutes. The students read papers, the best of which are published. Students who have done particularly interesting research are awarded a medal of the Ministry of Higher Education of the USSR and a prize.

Practical classes are held in subjects such as mathematics, theoretical mechanics, the theory of machines, resistance of materials and so forth.

Periodically, at these classes, students are called upon to demonstrate their knowledge either through questioning or through control work. At the practical classes students master the methods of utilizing the given science in the solution of practical tasks and acquire a sound grounding in the basic knowledge in the given field.

Practical classes also include seminars, which are held mainly in the humanities.

Calculation and drawings, course and diploma projects represent a wide field of activity in the development of independent work.
Calculations and drawings are a first independent step by the students in applying their theoretical knowledge in practice. The volume, subject matter and character of this work is defined by the content of the subject itself. As a rule, students submit their first project on machine parts on three or four normal size blueprints with calculations and explanatory notes.

Other course projects deal with the subject the student is specializing in. In working on these projects students not only master definite knowledge but also modern scientific methods of drawing up projects. In this work the teacher plays an important organizational role.

Production practice and preparing the student for production. Formerly, curricula provided for the production training of students in the course of three production practice sessions at the senior courses. These sessions were held at various production bases but because of their short duration (4-8 weeks) they did not give students the opportunity of going deep into production. But the main thing was that they did not teach students work habits or make them perceive the joy of a man who creates material values or teach them to respect and value physical labour.

Questions concerning the organization of polytechnical training in the secondary school and combining training with production work had been worked out long ago by the classics of Marxism-Leninism. Today, when the Soviet Union is entering the period of full sized construction of the Communist society, this reorganization has become a direct historic necessity. We regard the reorganization of the higher school and the strengthening of its link with production as a means of improving the training of specialists.

The new curricula devote considerable time to training directly at factories.

Students enrolled for the 1959–1960 academic year will be trained in accordance with new curricula, which preserve the positive experience of training accumulated over many years and make it possible considerably to improve the quality of the training by intensifying the production activity of students and organizing their productive work at factories.

Students are accepted at technical higher schools on the basis of the results of competitive examinations in four or five subjects. The list of subjects is established by the Ministry of Higher Education depending on the profile of the higher technical school in question. Among successful aspiring students, enrolment priority is given to those who have at least two years' experience in practical work. Up to 80 per cent of the places are reserved for this category of aspiring students. Students with insufficient practical experience combine work with study during the first and sometimes during the second course.

The main purpose of production work at the junior courses is to draw students into productive labour, into the creation of material values, and acquaint them with production in their chosen field.

Moreover, during one of the senior years students work for a long period at a factory in their field.

Progress. The basic criterion of progress is the mark the student receives at the examinations. The examinees are the professors and docents lecturing in the given course. The results of the examinations are evaluated by a four-point system.

From 20 to 25 weeks are given for a diploma project. The subject for the project is chosen from a wide and varied field. As a rule the student is set the task of projecting a Diesel locomotive, aircraft, factory, factory department, mine, power station or some other object depending on the speciality.

In some specialities (science of metals, foundry casting, welding, etc.) the student is allowed to deal with small, independent experimental research that he has conducted himself. However, at technical higher schools preference is given to the diploma project in order to give the student the possibility of thoroughly finishing and showing his engineering training.

Diploma projects are maintained in public before a State Examination Commission consisting of representatives of the chair of the given or some other institution of higher education and prominent specialists from industry.

All students finishing a technical higher school receive the diploma of an engineer in the corresponding field. Students passing 75 per cent of the course examinations with an excellent mark and the rest with a good mark and receiving an excellent mark for their diploma projects are awarded an honours diploma.

When they finish a higher technical school, young specialists are sent into industry. After acquiring production experience some of them return to a technical higher school to continue their studies at post-graduate courses.

The higher technical school keeps in close touch with its graduates. On the one hand, this allows it to see the results of its work and, on the other, gives it the opportunity of helping the young specialists to raise the level of their qualifications.

BROAD OR NARROW SPECIALIZATION?

The training of engineers provides for the mastering of general theoretical, general engineering and special subjects by the students and giving them the opportunity of acquiring production habits and participating in production activity at a factory.

Depending on the distribution of time between the cycles of subjects and on the direction of production practice, training can be carried out along a broad or narrow profile.

How is the training of engineers organized in
the Soviet Union, in the field of electrical engineering, for example, and what courses must a student take if he wants to be an electrical engineer? Does he specialize in some branch during his studies at the institute or does he receive a general engineering training?

To reply to these questions it would be best to turn to the experience of the Moscow Institute of Power Engineering, where the curricula provide for the training of electrical engineers in various specialities.

These curricula are built up to give the student a general theoretical, general engineering and a special training in the course of his six years of study.

During the first years the striving is to lay a durable foundation of knowledge in physics and mathematics which is indispensable for the modern electrical engineer.

In his future activity he will frequently be confronted with new technical problems and tasks.

Broad general theoretical training enables the engineer to transcend difficulties and not find himself in a blind alley when new problems arise in technology.

General engineering training is built up on the basis of a broad general theoretical preparation. The subjects of this cycle include resistance of materials, machine parts, theory of machines, a comprehensive course in the theoretical principles of electrical engineering, electrical measurements, the principles of electronics and so forth. The general engineering cycle also includes general electrical engineering subjects and general engineering courses related to it.

Thus, the future engineer specializes right from the beginning.

The plan for the study process makes provision for a profound and all-round study of the above subjects. The student attends lectures, carries on independent work at the institute's laboratories and study rooms, and calculates and designs when drawing up course and diploma projects. Special attention is paid to giving the student a sound knowledge of theory by acquainting him with electrical engineering in industry. That is why the curriculum provides for production practice, and, at present it is intended that in the study period at the institute the student should work in production for at least two years.

General theoretical and general technical training takes up from 70 to 80 per cent of the study time. The remaining 20-30 per cent of this time is, at the Moscow Institute of Power Engineering, used for the specialization of electrical engineers.

Modern electrical engineering has reached a stage of development where it is no longer possible or expedient to give engineers a training that would cover all fields of applied electrical engineering. Indeed, it is hard to imagine a specialist who would feel equally at home say in the field of electrical machines, electrical furnaces, electrified railways and so forth. That is why questions of electrical engineering proper have to be specialized already in the period of study at the institute.

The Moscow Institute of Electrical Engineering offers training in electrical engineering specialities such as electrical machines and apparatuses, non-conductors and semi-conductors, electrification of industrial enterprises, power stations, grids and systems, industrial electronics, high tension engineering, automation and remote control. Each of these specialities has its own special system of subjects that allow the student to go deeper into its essence and principles. For example in the speciality dealing with non-conductors and semi-conductors, the student studies the principles of static and quantum physics, the theory of non-conductors and the principles of crystallography. Then he goes over to the theory of semi-conductors, attends a course of lectures on germanium and silicate articles. This provides grounds for believing that the engineer who has taken these subjects will be a good specialist in non-conductors and semi-conductors.

The speciality dealing with the electrification of industrial enterprises is another matter. Here the student must be acquainted with the principles of automation and telemechanics, with the control of electrical gears, with questions concerning the power supply to industrial enterprises and electrical equipment of various production machines.

After taking this course, the young engineer can confidently work at an industrial enterprise in any section of the national economy.

Naturally, a different curriculum could have been worked out to give more attention to specialized subjects at the expense of general theoretical and general engineering training. In the latter case the institute graduate could begin an engineering career in industry more easily. But very soon, when confronted by the necessity of making a practical decision in new problems, he would find a gap in his theoretical education and that his more comprehensive training in his speciality had not compensated for that gap.

That is exactly why at the Moscow Institute of Power Engineering the curriculum for the training of electrical engineers is built up as a pyramid as it were. At its base are general theoretical subjects; the middle part is made up of general engineering subjects; and specialized subjects are at its summit.

Such are the considerations lying at the basis of a curriculum which provides for the training of an engineer of broad specialization.

MOSCOW INSTITUTE OF POWER ENGINEERING - ONE OF THE COUNTRY'S MAJOR EDUCATIONAL ESTABLISHMENTS

Despite the centralized administration, the higher technical schools retain sufficient freedom of action in drawing up curricula and programmes
and in working out organizational forms of the study process. This is explained by a desire to preserve the existing scientific schools and trend in the development of higher schools.

The Moscow Institute of Power Engineering is a higher technical school of a polytechnical type with 11 departments: electromechanical, electrical machine building, electric power, thermal power engineering, hydropower engineering, radio engineering, electrification of industry and transport, industrial thermal engineering, electronic machinery, automation and computing machinery, and an evening department. The institute trains engineers in 21 specialities.

It has already trained 20,000 engineers and at present it has more than 13,000 students.

The Moscow Institute of Power Engineering has all the conditions for successfully training engineers: a skilled teaching staff which includes 11 academicians and corresponding members of the Academy of Sciences of the USSR, 86 doctors and 454 candidates of science; big scholastic buildings with 167 lecture rooms, study rooms, drawing halls and library - all of which are excellently equipped with the latest scientific instruments and apparatuses. Most of the institute's 62 chairs each have two or three laboratories for the different courses. With their laboratories, study rooms and library, the chairs occupy a total space of nearly 47,000 square metres.

The institute has its own facilities for the production training of students - educational and production-experimental workshops, an industrial type thermal power system, an educational power station, a dynamic model of a power grid, a print shop and other auxiliary enterprises.

It also has unique research installations: a 1,800,000 volt impulse tension generator, super high steam pressure stands, installations using radio-active isotopes, models of d.c. current transmission, and so on.

The educational thermal and electric power stations are the only structures of their kind to be built in a higher school in the Soviet Union.

The broad and many-sided character of the chairs enables the institute to tackle major scientific problems for the most diverse sections of the national economy. The institute deals with pressing problems of production. All curricula provide for the training of engineers with broad specialization. Some special, technical fields which are particularly broad have two, three or more spheres of specialization (to which 300-400 hours are devoted at the fifth course). Students receiving such training can, in case of necessity, work in any of these spheres.

Outside the time-table, students work independently, carrying out compulsory tasks and studying theory from textbooks and supplementary literature.

The organization of independent study by students with the help of textbooks and study aids must naturally be given great attention. The teaching staff is therefore systematically compiling textbooks and study aids for students.

The institute creates the necessary conditions not only for study, production training and scientific research but also for the recreation and healthful life of the students.

Sixteen multi-storeyed hostels form an entire township peopled by 6,000 students as well as by the teaching staff. The student township has shops, a tailoring establishment, dining rooms, a polyclinic, a disease prevention station, an indoor swimming pool, gyms and sports grounds, a student club, a post office and so on. It also has a health centre, the Energia, situated in a picturesque locality 40 kilometres from Moscow. The health centre has accommodation for 250 students and teachers.

FEATURES OF TEACHING AT THE MOSCOW INSTITUTE OF POWER ENGINEERING

At the Moscow Institute of Power Engineering the time-table of compulsory classes is built up on the following principles. Sometimes two two-hour lectures are delivered on one and the same day. Seminars and practical classes likewise last two hours each. From two to four hours a day are devoted to laboratory work.

In addition to theoretical training, provision is made for examinations which last from three to four weeks (twice a year), production practice and production training, work on the diploma project for which 24 weeks are given, and winter and summer holidays.

The first and second courses are devoted to general scientific subjects; the third and partially the fourth course to general engineering subjects in the chosen field; and, lastly, the fourth and fifth courses to specialization.

Course projects are maintained before a chair commission consisting of three or four teachers. The diploma project is maintained before a State commission whose chairman is a prominent specialist from industry.

Thanks to this practice at the institute, the usual diploma project is of real significance for industry. A work carried out by a student at the institute is frequently used for the solution of pressing problems of production. All curricula provide for the training of engineers with broad specialization. Some special, technical fields which are particularly broad have two, three or more spheres of specialization (to which 300-400 hours are devoted at the fifth course). Students receiving such training can, in case of necessity, work in any of these spheres.

Outside the time-table, students work independently, carrying out compulsory tasks and studying theory from textbooks and supplementary literature.

The organization of independent study by students with the help of textbooks and study aids must naturally be given great attention. The teaching staff is therefore systematically compiling textbooks and study aids for students.
An all-sided study of the actual outlay of student time brought us to the conviction that the portion of compulsory study must be reduced and that of independent work increased. This gives students days which they are not compelled to spend at the institute. Besides Sundays, there are two such days at the fifth course, and one day a week at the other courses. In addition all forms of compulsory homework are planned. The chair cannot give students compulsory homework without the permission of the dean.

A time-table establishing the sequence of homework is drawn up to allow the student to do his independent work evenly throughout the semester. The homework is set at the very first class of a semester.

Past experience shows that senior course students strive to carry out research at the chairs. The rapid progress of technology is demanding from the engineer a creative approach to his work, an ability to cope with new problems entailing the complex utilization of various sciences - electrical engineering, hydraulics, thermal engineering. For that reason the institute's Academic Council has adopted a decision to introduce a new form of independent work by students - educational research. The content and volume of this work depends on the capabilities of the student concerned and for that reason the final decision rests with the teacher. Frequently this research continues in the diploma project and is used in industry as a finished work of practical value.

This form of educational work does not exclude the ordinary classes in the laboratory or the fulfillment of standard calculations and course projects. Standard calculations are of a complex character and embrace large sections of the basic courses. The time-table of all forms of independent work by students is carefully co-ordinated in advance with the calendar plans of compulsory classes. For the first and second courses all these co-ordinated plans are printed in the print shop as special issues and are handed out to each student and teacher at the beginning of the semester.

Long experience of training engineers has convinced the teaching staff that under a system of compulsory attendance of classes, a fixed term of training and the implementation of a plan of training engineers, the planning of all work by students, including independent work, is an indispensable condition of a correct organization of the educational process.

Industry gives a high appraisal of the engineers trained by us. But we are by no means considering that we have completed our work. The swift development of industry in the Soviet Union confronts us with the task of further improving the training of specialists for such a leading branch of technology as power engineering.

The development of higher technical education in the USSR has placed our country in a position where it is training more engineers than any other country in the world.

The rapidly expanding industry of the Soviet Union is demanding skilled, key specialists with an all-round education, initiative and a creative approach to their work.

That is why the question of further improving the training of engineers has been and will in the next few years continue to be in the forefront of the attention of higher technical schools in the Soviet Union.
APPENDIX I

CURRICULUM
for Specialization in Automation and Remote Control
(No. 0606)

1. Scheme of course

<table>
<thead>
<tr>
<th>Dates of academic weeks</th>
<th>September 29</th>
<th>October 27</th>
<th>November 24</th>
<th>December 21</th>
<th>January 18</th>
<th>February 15</th>
<th>March 12</th>
<th>April 9</th>
<th>May 6</th>
<th>June 3</th>
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<td>x x</td>
<td>x x</td>
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<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
</tr>
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<td>x x</td>
<td>x x</td>
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<td>x x</td>
<td>x x</td>
<td>x x</td>
</tr>
<tr>
<td>3rd year</td>
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<td>x x</td>
<td>x x</td>
<td>x x</td>
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<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
</tr>
<tr>
<td>4th year</td>
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<td>x x</td>
<td>x x</td>
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<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
<td>x x</td>
</tr>
<tr>
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<td>x x</td>
<td>x x</td>
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<td>x x</td>
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<td>x x</td>
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<td>x x</td>
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<td>x x</td>
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Key:
- Theoretical instruction
- Examinations
- Practical training
- Industrial work and correspondence or evening instruction
- Diploma project
- Vacations

MOSCOW INSTITUTE OF POWER ENGINEERING,
ORDER OF LENIN

Specialist qualification: Electrical engineer

Length of course: 5 years 11 months

Students with industrial experience begin on 7 February.
<table>
<thead>
<tr>
<th>NAME OF SUBJECT</th>
<th>ALLOCATION OF TIME ON SEMESTERS</th>
<th>HOURS</th>
<th>ALLOCATION OF TIME IN YEARS OF STUDY AND IN SEMESTERS</th>
<th>HOURS PER WEEK</th>
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<tr>
<td>2. Political economy</td>
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<td>3. Dialectical and historical materialism</td>
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<td>4. Foreign language</td>
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<td>5. Higher mathematics</td>
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<td>7. Chemistry</td>
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<td>8. Descriptive geometry and drawing</td>
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<td></td>
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<td>9. Theoretical mechanics</td>
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<tr>
<td>10. Strength of materials</td>
<td>5 5</td>
<td>8 4</td>
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<tr>
<td>11. Technology of materials</td>
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<td></td>
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<td>12. Principles of construction</td>
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<td>13. Theoretical principles of electrical engineering</td>
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<tr>
<td>14. Electrotechnical material</td>
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<td>15. Electrical machines</td>
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<td>7</td>
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<td>104</td>
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<tr>
<td>16. Electrical measurement</td>
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<td>17. Electromagnetic elements of automation</td>
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<td>18. Semi-conductor and impulse electronics</td>
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<td>19. Automatic control</td>
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<tr>
<td>Theory of automatic regulation and self-regulators</td>
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<td>Principles of computing</td>
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<td>Telemetering and communication channels</td>
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<td>Telemechanical control</td>
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<td>Technology of electrical instrument construction</td>
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<td>Industrial economy, factory organization and planning</td>
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<td>Principles of safety engineering and fire-prevention techniques</td>
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<td>34</td>
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<td>Students’ research</td>
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<td>Physical education</td>
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<td>Optional subjects</td>
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<tr>
<td>5172</td>
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<td>718</td>
<td>1426</td>
<td>576</td>
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</table>

Key to figures: The number of hours per week devoted to the various subjects is shown thus: the basic figure indicates the number of hours devoted to lectures, the lower index figure the number of hours devoted to laboratory work, the upper index figure the number of hours devoted to practical work, and the figure in parentheses the number of hours devoted to independent work under the teacher’s guidance. The asterisk denotes examinations.

Explanation of curriculum:
1. Laboratory work in safety engineering (duration 10 hours) is carried out in the laboratories of the Department.
2. The number of lecture hours in subject No. 18 includes 14 hours (in 5 semesters) taken in the History of Technology Department.
3. For guidance in standard calculation, 2 extra hours per week are allotted for group work.
### Optional subjects

<table>
<thead>
<tr>
<th>Serial number of subject</th>
<th>NAME OF SUBJECT</th>
<th>ALLOCATION OF TIME ON SEMESTERS</th>
<th>HOURS</th>
<th>ALLOCATION OF TIME IN YEARS OF STUDY AND IN SEMESTERS</th>
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<td></td>
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<td>Examinations</td>
<td>Years</td>
<td>Course projects</td>
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<tr>
<td></td>
<td>History of technology</td>
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</table>

1. Drawing
2. History of technology
# APPENDIX II

## CURRICULUM

for Specialization in Thermal Power Plants

*(No. 0305)*

1. Scheme of course

<table>
<thead>
<tr>
<th>Dates of academic weeks</th>
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<th>November</th>
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<table>
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<th>No. of academic weeks</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
</table>

| 1st year                |           |         |           |           |         | +       | +     | +     |     |       |      |        |
| 2nd year                |           |         |           |           |         | x       | x     | x     |     |       |      |        |
| 3rd year                |           |         |           |           |         | x       |       |       |     |       |      |        |
| 4th year                |           |         |           |           |         | x       |       |       |     |       |      |        |
| 5th year                |           |         |           |           |         | x       |       |       |     |       |      |        |
| 6th year                |           |         |           |           |         | x       |       |       |     |       |      |        |

<table>
<thead>
<tr>
<th>Key:</th>
<th>Theoretical instruction</th>
<th>Examinations</th>
<th>Practical training</th>
<th>Industrial work and correspondence or evening instruction</th>
<th>Diploma project</th>
<th>Vacations</th>
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</thead>
</table>

| Length of course: 5 years 11 months |

### MOSCOW INSTITUTE OF POWER ENGINEERING, ORDER OF LENIN

Specialist qualification: Thermal Power engineer

Students with industrial experience begin on 7 February.
### 2. Syllabus

<table>
<thead>
<tr>
<th>NAME OF SUBJECT</th>
<th>1st year</th>
<th>2nd year</th>
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<th>4th year</th>
<th>5th year</th>
<th>6th year</th>
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<td>6</td>
<td>7</td>
<td>8</td>
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<td>7</td>
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<td>10</td>
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<tr>
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<td>9</td>
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<td>11</td>
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<tr>
<td>3. Dialectical and historical materialism</td>
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<td>8. Descriptive geometry and drawing</td>
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<td>9. Theoretical mechanics</td>
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<td>10. Strength of materials</td>
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<td>11. Technology of metals</td>
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<tr>
<td>12. Theory of mechanisms and machines and machine components</td>
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<td>13. Electrical engineering and electronics</td>
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<td>14. Technical thermodynamics</td>
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<td>15. Heat transmission and hydromechanics</td>
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<td>16. Heat engineering measurement and apparatus</td>
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<td>17. Fans and pumps</td>
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<td>18. Boiler installation</td>
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<td>19. Water treatment</td>
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<td>Course</td>
<td>Lectures</td>
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<td>Practice</td>
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<td>20. Automation of basic units of thermal stations</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td>120</td>
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<td>21. Steam and gas turbines</td>
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<td>9</td>
<td>8</td>
<td>208</td>
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<td>22. Thermo-electric power stations</td>
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<td>7,10</td>
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<td>138</td>
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<td>16</td>
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<td>23. Electrical equipment for electric power stations</td>
<td>10</td>
<td>10</td>
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<td>64</td>
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<td>24. Construction</td>
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<td>25. Economics of power engineering, factory organization and planning</td>
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<td>10</td>
<td></td>
<td>112</td>
<td>102</td>
<td>18</td>
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<td>26. Principles of safety engineering and fire-prevention techniques</td>
<td>11</td>
<td>8</td>
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<td>36</td>
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<tr>
<td>27. Industrial training at the Thermo-Electric Centre of the Moscow Institute of Power Engineering</td>
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<td>96</td>
<td>96</td>
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<td>28. Students' research</td>
<td>9,10</td>
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<td>29. Physical education</td>
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<td>30. Optional subjects</td>
<td>9,10</td>
<td>6–10</td>
<td></td>
<td>472</td>
<td>336</td>
<td></td>
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<tr>
<td>31. Subjects determined by the Academic Board</td>
<td>7,9–11</td>
<td>7,9–10</td>
<td>10</td>
<td>294</td>
<td>176</td>
<td>86</td>
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</table>

Total hours: 5136 2346 700 1550 540 16 16 33 32 36 36 36 36 30 30 9

(Including independent work under the teacher's guidance) 540 2 2 1 2 6 6 6 6 6 1

Number of examinations 2 3 4 5 4 5 4 5 4 5 4

Number of tests 4 3 6 3 6 4 6 4 5 5

Number of course projects 1 1 1 1

Key to figures: The number of hours per week devoted to the various subjects is shown thus: the basic figure indicates the number of hours devoted to lectures, the lower index figure the number of hours devoted to laboratory work, the upper index figure the number of hours devoted to practical work, and the figure in parentheses the number of hours devoted to independent work under the teacher's guidance. The asterisk denotes examinations.

Explanation of curriculum:
1. Laboratory work in safety engineering (duration 10 hours) is done at the Thermo-Electric Centre of the Moscow Institute of Power Engineering, and in the laboratories of the Department.
2. The number of lecture hours in subject No. 22 includes 18 hours (in 7 semesters) taken in the History of Technology Department.
3. In the 2nd semester for subject No. 8 there are 16 hours of practical work in descriptive geometry.
4. During the long work session in the 11th semester, students work for not less than two months at electric power stations.
5. For guidance in standard calculation, 2 extra hours per week are allotted for group work.
### 3. Optional subjects

<table>
<thead>
<tr>
<th>Social number of subject</th>
<th>NAME OF SUBJECT</th>
<th>ALLOCATION OF TIME ON SEMESTERS</th>
<th>HOURS</th>
<th>ALLOCATION OF TIME IN YEARS OF STUDY AND IN SEMESTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Examinations</td>
<td>Tests</td>
<td>Course projects</td>
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<tr>
<td>1</td>
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<td>5</td>
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<tr>
<td>1. Drawing</td>
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<tr>
<td>2. History of technology</td>
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</tbody>
</table>

**HOURS PER WEEK**

- 1st year: 32
- 2nd year: 32
- 3rd year: 32
- 4th year: 32
- 5th year: 32
- 6th year: 32
- Total: 192
The USSR has a single system of higher education. It is based on one set of principles and all its integral parts have the same purposes.

One of the prime requisites for building Communism is such a cultural advance of society as could ensure to all members an all-round development of their physical and mental abilities, a development as would give everyone the opportunity of becoming an active participant in social progress, in the process of building Communist society. The all-round development of man, the bringing up of a generation able to complete the building of Communist society – the society of highest social justice and welfare – such is the aim of upbringing, education and training of the younger generation in the Soviet Union.

This basic proposition is the guiding principle in the system of all education, including higher education.

The harmonious development of the personality is ensured by a combination of the physical, mental, labour, ethical and aesthetical education of the growing generation, the fostering in young people of lofty sentiments of humanity, exalted moral traits, by upbringing in the spirit of service to society, service for the good of all the people. This determines the activities of the higher school, including a humanistic education.

At the same time the above purposes are not achieved by the school alone, whether secondary or even higher.

Education is a matter not only for the school, including the higher school. The school offers merely the fundamentals of education and upbringing. The entire life of man represents a constant process of education. All the work of Soviet cultural institutions is founded on this methodological principle.

The all-round development and education of man is ensured in the Soviet Union not only by the broad system of secondary and higher education but also by the entire system of cultural enlightenment and scientific propaganda. Suffice it to point to the activities of the vast network of various museums, palaces and houses of culture with their diverse amateur art groups, libraries, sports organizations, radio and TV programmes, etc.

The Exhibition of Economic Achievements of the USSR has become a large scientific centre for the popularization of the best experience of practical workers in all spheres and of the latest scientific accomplishments. Every day scores of lectures and practical demonstrations are arranged at the exhibition. All this at the same time supplements the work of the school, particularly of universities and colleges.

On the other hand, the higher school itself does not limit its task to training and educating the young people who are enrolled as students. University and college faculties do extensive educational work among the broadest sections of the population. Here are a few examples.

A University of Culture has been set up at the Leningrad University. The "memorandum for students" formulates the idea of the university as follows: "Acquiring in the university knowledge and culture each student should try to apply them in life and spread his positive influence among others."

As many as 2,000 professors and instructors of Leningrad higher educational establishments, including 1,450 representatives of the humanities, are members of the Leningrad branch of the USSR Society for the Dissemination of Political and Scientific Knowledge. The picture is very much the same in the other cities; in the national republics which prior to the revolution had no national intelligentsia of their own, the participation of university faculties in general cultural activities is even greater. The law on strengthening the ties of the school with life and the further development of the system of education, adopted by the Supreme Soviet of the USSR on 24 December 1958, extends greatly the possibilities offered to the broad sections of the population for obtaining both a systematic higher education (including an education in the humanities) and for raising their general cultural level.

There is no contrast between education in the humanities and other forms of education in the Soviet higher school. The division of the sciences into the humanities and non-humanities, which arose in the Middle Ages, became obsolete long ago. The contents and bounds of the conceptions of the humanities and a humanistic education are constantly changing. Science represents the exact knowledge of objects and processes of objective reality and in this sense there is no difference in principle between the sciences of nature and the sciences of society and man as a member of society. The difference is only in the subject matter. That is why in this sense there is also no difference in principle and no boundaries fixed once and for all between, say, an education in the humanities and an education in the natural sciences.
On the one hand, the methods of the natural and exact sciences in view of the general progress of science increasingly penetrate the sphere of social phenomena (in the broad sense of the word), which leads to the birth of new sections and even new independent spheres of science. Suffice it to point to the influence of physiology with its latest methods on the development of psychology, or to the application of mathematical methods to the study of linguistic phenomena and to the emergence of a new branch of science, mathematical linguistics, without the knowledge of which there can be no complete philological education today.

Mastery of the general theory of information and communication, afferent communication, linear programming and mathematical statistics and also of the practical operation of various computers, analogs and controlling devices is essential not only for mathematicians, physicists, chemists, engineers and biologists, but also for economists, historians, linguists, and other specialists in the humanities.

It should also be noted that cybernetics, which includes as an important integral part the theory of afferential communication, is of great importance in developing in students the faculty of creative theoretical thinking.

On the other hand, a humanistic education in the USSR is an integral part of any education in general whether in the natural or in the technical sciences, whether a higher or secondary education.

Firstly, the very system of education in the natural or technical sciences is based on a social approach because our higher school prepares not an abstract specialist, does not simply give scientific knowledge for an unknown purpose, but trains a social minded specialist who is called upon to apply his knowledge of the technical or natural sciences, gained in the university or college, to a definite sphere of social life so as to become an active participant in the development of society.

It is perfectly natural that such an approach also characterizes the study of the humanities which does not simply give a sum of knowledge, but knowledge which equips the student with understanding of the laws of social development and thereby creates a major prerequisite for active participation in transforming life, in creating the highest living standard for all the citizens of the USSR on the basis of the growth of the productive forces.

Secondly, the natural or technical sciences themselves, being, just as any science in general, a form of social consciousness, bear within themselves a social, humanistic element.

Thirdly, the natural sciences equally enrich men with knowledge, just as the social sciences, facilitating the bringing up of intelligent members of society of versatile development.

The natural sciences are constantly strengthening the positions of materialism. Their study is inseparable from practical criticism of any idealistic conception, agnosticism in particular.

Fourthly - and this is the most important thing - education in the natural or technical sciences in the USSR is so organized that it simultaneously provides a serious, deep and sufficiently versatile education in the humanities.

The curricula of higher educational establishments envisage the study of the history of the Communist Party of the Soviet Union, political economy, dialectical and historical materialism. Instruction in these sciences is of a profound nature designed to mould the world outlook of the student; at the same time it ensures the social approach to all phenomena of science and life that should be inherent in the Soviet specialists in any sphere of knowledge and is characteristic of each member of Socialist society, where people build their life collectively, consciously, and according to plan.

Thus, the teaching of philosophy in Soviet universities and colleges does not bear the narrow utilitarian nature which is the case in the higher schools of some bourgeois countries. For its nature philosophy abhors such an approach because it is a science which moulds the world outlook and is of a general educational character which helps to raise the intellectual level of people. It is this humanist task that comprises one of the main purposes of teaching philosophy. Herein lies the basic difference between teaching philosophy in Soviet universities and colleges and in certain capitalist States where philosophy is regarded merely as a non-essential supplement to a special education, a supplement of no scientific importance.

The same should be said about the teaching of political economy. In addition to the history of the CPSU, political economy and philosophy, many university departments in the natural sciences also teach pedagogics which is an important element of a humanistic education. In this case pedagogics is studied not as a method of school instruction of the given natural science, not as a set of professional recipes, but as a science of upbringing, educating and training the younger generations, as a science which treats of the aims and purposes, principles and contents, methods and forms of upbringing, education and training. Therefore, it is studied in close connexion with psychology; at many departments of the natural sciences students have a special course in psychology.

We reject in principle the methodological positions of Dewey's instrumentalist pedagogics which is based on "adaptation to life" through numerous narrow practical courses. The philosophical generalization of this position is given in pragmatism, the philosophical trend which, we consider, regards with the utmost cynicism all the great ideas of humanism, the lofty ideas of justice.

The study of foreign languages holds an important place in any form of education, in the technical, or natural sciences, or the humanities. It is also
an important element of the humanistic education of
any specialist. The importance of knowing a foreign
language consists not only in that it enables one to
make use of the achievements of human knowledge
in other countries (everything really valuable and
important is translated into Russian), but also in
that it puts Soviet people in more direct contact
with the intellectual life of other countries,
enables them to gain a deeper understanding of the
historical, specific features of the way of life and
culture of other nations.

Humanistic education in the USSR, which assimili-
ated and accepted the finest ideas and traditions
of humanistic education of different peoples, the
progressive ideas of the humanists of the past,
includes the entire cycle of sciences of man and
human society. The contrasting of a humanistic
education to an education in the natural sciences
is alien to the Soviet higher school, just as the
contrasting of an education in the humanities to an
education in the social sciences, the contrasting
of the sciences of man to the sciences of human
society, is alien to the system of humanistic
education itself. Man always acts in society, his
development cannot be understood outside of the
development of society which creates different
conditions for the development of the human
personality. A Robinsoniada is a rationalistic
Utopia of the Eighteenth century.

The pre-revolutionary Russian university educa-
tion, including studies in the humanities, proceeded
from contrasting it to a special, professional edu-
cation. The charters of universities stressed that
a university education had nothing in common with
a professional education, did not pursue profes-
sional purposes, that the aim of the university was,
as the Council of the Petersburg University urged,
"to explain the truths of science for those who are
interested in these truths; that it does not have in
mind anything narrow or practical as a special
school which aims to pass on the truths of science
direct, practical application by its students in
branches of practical endeavour, for which the
special school is opened."

Such a conception of the specific features of a
university education, particularly a humanistic
education, was determined above all by the deeply
erroneous contrasting of science to life, theory to
practice. Moreover, this conception also pro-
ceded from the erroneous assessment of the
motives of those who entered a university, solely
as a desire to engage in pure science. Only an
extremely small number of those entering univer-
sities could be guided by such striving; the major-
ity, however, were prompted in the main by
"careerist" (not in the bad sense of the word)
considerations. Such an ideology could be based
on the availability of means for a livelihood, means
created by those who had to work (to apply their
knowledge) and who therefore had to join special
higher schools, had to work in the future and not
merely "philosophize". Such an aim of a univer-
sity education reveals quite graphically and
conclusively its roots. That was a social order
given by the representatives of a narrow strata
of the ruling class to their university.

Incidentally, as early as the beginning of the
Twentieth century Lev Petrozhitinsky, Professor of
Law of Petersburg University who enjoyed great
influence, wrote on this score: "Many speak now
that it is necessary to free and cleanse the uni-
versity from those who go there for the sake of a
diploma and career. . . . It would be more reason-
able and important to think how to achieve such
power and influence of the university that it
should possibly baptise all its students by the
force and light of science, . . . rather than proceed
from the views of some kind of super ex-school
pupils who value the ideal benefits and lofty
spheres of spiritual life which they as a matter of
fact are not even able to appreciate, not having
mingled at all prior to entering the university in
the high spheres of science in the exalted meaning
of this word."

The above aim of a humanistic education in
Russia prior to the revolution, as something which
excludes a professional education and professional
purposes, could not conform to the tasks set
before the educational system by the Soviet State;
at the same time it was also deeply alien to the
strivings of the students who came to the univer-
sity after the October Revolution not to get lofty
knowledge (knowledge as "mental fat"), but to
obtain it in order to apply it in their work for
society (to convert the knowledge into "mental
muscle"). These principles were the basic
starting points in organizing the system of
humanitarian education.

The network of humanistic higher educational
establishments in Russia prior to the Great
October Socialist Revolution consisted of historico-
philological and law departments at ten universi-
ties, a few teachers' institutes and special
colleges. Moreover, these institutes and colleges
were regarded as something strictly professional
and narrowly practical which had no bearing on a
humanistic education.

The development of the entire system of higher
education in the Soviet Union did not proceed
easily and smoothly, particularly was this true of
humanistic education, before which the Soviet
State set tasks that could not be solved in the past.
In the first Soviet years the pre-revolutionary
network and system of humanistic education were
reorganized. The main elements of this
reorganization were:

1. The establishment of a number of new
universities.

2. The organization of a wide network of
teachers' institutes with departments and special-
ties in the humanities as well; the first special
institutes were set up.

As a result of these two measures the humanistic
educational network was already extended sub-
stantially in 1923, which attested to the great
attention given by the Soviet State to this field.
In 1923 we already had in universities seven departments in the social sciences (including historico-philo-litical and law departments) and 13 pedagogical departments, 28 teachers' institutes and several institutes of economics. Most of them were established after the October Revolution. The Government also took care of the future development of humanistic education. Thus, workers' preparatory schools, set up to help workers and peasants enter universities and colleges, from the very beginning had special departments designed to train people for an education in the humanities. In 1923 out of the 54 workers' preparatory schools, 16 were of a socio-economic trend.

3. The reorganization of the historico-philo-litical and law departments of universities into departments of social sciences. (The idea of organizing social science departments in universities was also expressed in pre-revolutionary Russia by Petrazhitsky, although the starting points of his proposals were different from those which underlay the organization of social science departments after the October Revolution.) The main task of these departments was to prepare historians, lawyers, economists and other specialists with a Marxist background.

4. Subsequently, these departments were reorganized, and on their basis new departments grew up: Soviet law, language and material culture, etc.

5. The organization at the end of the 20's and in the 30's of a system of economic institutes in the broad sense of the word (economic, planning, financial-economic and others) and also of economic and engineering-economic departments at special technical institutes represented a big stage in the development of the existing system of education in the humanities.

6. The reorganization of humanistic education led, finally, to its separation from the university system and to the establishment of special independent institutes (institutes of Soviet State and law, institutes of philosophy, history, linguistics, etc.). As a rule departments of mathematics, physics, chemistry, geography, biology, geology, etc. remained in universities.

The reorganization in the Ukraine took on somewhat different forms where education in the humanities shifted mainly to educational institutes and to economic institutes.

All these and other reorganizations expressed a desire to find the most suitable system and forms of a humanistic education in the country. It should be noted that in some cases this reorganization assumed wrong directions and led to erroneous decisions. The main mistake was the exclusion of a humanistic education from the universities, the establishment of narrowly specialized institutes on the basis of university departments, which in a number of cases led to narrow professional training and to the simultaneous loss of the theoretical breadth that was typical of university departments.

For example, in 1930 the Leningrad Institute of History, Philosophy and Linguistics was formed on the basis of the university's historico-linguistics department. But in the first years of its existence the institute followed a downward path and this was manifested first of all in the change of the trend of the specialists it trained, in the lowering of the general theoretical level of training and excessive practicalism. For example, the institute began to train not literacy scholars, but editors and publishers or bibliographers, not historians but museum workers or local ethnographers. Instead of linguists it trained translators, etc. In line with this super-utilitarianism the term of studies was cut to three years and sometimes even to two and a half years. We should bear in mind, however, the extremely great need of the country's rapidly growing economy and culture in specialists of the most diverse type (librarians for new libraries, teachers for the tempestuously spreading school system, workers for numerous museums set up in regional centres, editors and correspondents of newspapers, etc.).

It should also be added that in the period of the institute's independent existence, as the most pressing need in specialists were gradually satisfied, the declining trend was already reversed and at the time the institute was reunited with the university it again acquired the nature of a university department and the terms of study were again lengthened.

Notwithstanding a number of difficulties and mistakes in building up the Soviet system of a higher humanitarian education, deep and broad general theoretical training is one of the cardinal principles and demands. Even in periods when our growing economy and culture demanded the fastest possible training of personnel, these demands were not ignored. If we take, for example, the years 1925-1926 when draft curricula were examined, economic bodies which discussed them put forward this demand as one of the most important ones. The Supreme Economic Council and the State Planning Commission in examining the curricula of social and economic institutes pointed out that, irrespective of the concrete specialty a graduate chooses, it is essential that he possess a sufficiently broad economic grounding and general technical knowledge which would give him a firm scientific basis for orienting himself in practical economic problems. It was pointed out that the curricula must be concise to provide for improved general scientific training. Thus, in the period when the system of social and economic education in the USSR was being formed it was already being given such tasks which had nothing in common with extreme forms of practicalism and professionalism.

By the end of the 30's the system of humanitarian education had been formed which, in its main outlines, exists to this day.
Speaking of the formation and development of the humanitarian educational system in the country mention must be made of the huge growth in teacher training.

From its very first days the Soviet State regarded the abolition of illiteracy and the making of a cultural revolution as one of its paramount tasks. A few figures will suffice to give an idea of the colossal magnitude of this task and the difficulties it entailed. In 1920 there were 319 literate people (including those having only rudiments of literacy) per 1,000 of population in Soviet Russia (the European part of the country, Northern Caucasus and West Siberia). In 1897 when a census was taken there were 223 literate people per 1,000 of population. The progress made in 23 years was such that at that rate many decades would be required to wipe out illiteracy. The Soviet Government set out to eradicate illiteracy in the shortest time and this task was accomplished successfully. One of the basic conditions was the establishment of a huge network of teachers' institutes. Prior to the revolution secondary school teachers were trained almost entirely at the universities. Moreover, at the level of education in those years, the universities were unable fully to satisfy the requirements of the secondary school for teachers. In the new conditions after the October Revolution the universities were even less able to cope with this task. That is why in the first Soviet years measures were taken not only to extend teacher training in universities, but also to open teachers' institutes. In 1923 the network of pedagogical higher educational establishments consisted of 13 pedagogical departments at universities and 23 teachers' institutes. In 1958 the network of teachers' institutes counted over 200 establishments. Besides that 40 universities train teachers for secondary schools.

The share and significance of humanitarian education in the USSR have risen immeasurably as compared with the pre-revolutionary period. This applies not only to the number of institutes and student enrolment, but also to the development of the system of humanitarian education as a whole. The unusual scope of humanitarian education in the USSR is determined by the cultural revolution in our country, the tremendous advance in the cultural interests and requirements of the people and the attendant building up of a wide chain of cultural and educational establishments. But above all the great importance of humanitarian education is associated with the very nature of the Socialist system in the Soviet Union.

Without introducing Socialist consciousness into the working class movement it would have been impossible to win power and to accomplish the proletarian revolution. That is why V.I. Lenin and the entire Bolshevik Party attached such great importance to ideological work. Understanding of the great aims of Communism draws scores of millions of people into active participation in the immense historic process and facilitates the all-round development of the individual gifts of each member of our society. Thus, the Socialist system which ensures the highest freedom of personal initiative (provided it is not directed against the interests of other members of the Socialist community of people) necessarily demands the wide extension of the high level of spiritual life of the Soviet man. The rôle and significance of education in the humanities will rise still more in the near future because higher education has been brought still closer to the masses. Suffice it to point out that we are now organizing people's universities, universities of culture and foreign language courses. The cycles of public lectures in auditoriums, in museums, in conservatoires systematically raise the cultural level, musical and artistic tastes of the Soviet people, acquaint them with the literature and music of foreign Eastern and Western countries.

At present the network of higher humanitarian educational establishments consists of:

1. Forty universities which have over 100 departments in the humanities;
2. Two hundred and seven teachers' institutes; almost all of them have departments, divisions or chairs in the humanities;
3. Twenty-four institutes of economics of different trends (economic, financial, engineering-economic, etc.);
4. A number of departments of economics in various special technical colleges;
5. Three law institutes;
6. Five library, literary and historico-archive institutes;
7. Twenty-two art institutes (theatre, music, painting, sculpture, architecture, etc.).

On the whole, 43 per cent of all students are enrolled in institutes or departments specializing in the humanities.

The various types of humanitarian education in the USSR consist, on the one hand, of a general humanitarian education and, on the other, of special professional, i.e. of direct applied importance for a definite sphere of practical endeavour in society. In this sense there is no difference in principle between a university and teachers' institute or any special institute in the humanities.

The basic tendency in the development of higher humanitarian education has been, and remains (and this was again confirmed in the law on strengthening the ties of the school with life and the further development of the system of education in USSR) to further raise the theoretical level of specialist training and to extend the scientific basis of humanitarian education. This tendency is manifested in many ways. It is known that the level of instruction is determined by the scientific work of the professors and instructors themselves, the level of scientific endeavour by the faculty of the given university or college. Formerly it was held that the combination of instruction and research was a distinctive feature of a university education only. At present this is the general demand, although actually the university offers the biggest
opportunities in this respect. Today both a pedagogical and any other humanistic education is inconceivable without research by the faculty and the enlistment of students in this work. This is merely one line of bringing the university and special humanistic education closer together or, to be more exact, of bringing up the special colleges for humanitarian studies to the level of universities. Other lines could be indicated as well (revision of the curricula of a number of special colleges in the humanities, establishment of post-graduation courses in these colleges, higher demands as regards the general cultural level of the students, etc.). Thus, the second major tendency in the development of humanitarian education has been, and evidently will be, to bring closer the various types of humanitarian education to the level of universities. This leads in a number of cases to an organizational rapprochement through the incorporation of the respective special colleges or teachers' institutes into university departments. Such incorporation was carried out in recent years in the case of most law and some of the teachers' institutes. This does not signify a narrowing down of the basis of humanitarian education but merely testifies to its further development on the university basis.

Another basic tendency in the development of higher humanistic education (which is particularly stressed in the law on strengthening the ties of the school with life and the further development of the system of education in the USSR) is the consolidation of the bonds of the higher school with life. This is manifested firstly in that, beginning with the 1958-1959 academic year, the departments in the humanities enrol in the first place persons who have worked for not less than two years; secondly, much more time is given in curricula to practical work directly at plants, offices or schools. The nature of practical training has been changed somewhat in the sense of raising the responsibility of the student for his work or the job to which he has been assigned for training. The students are directly hired to work for a year or six months, which naturally not only sharply raises their responsibility, but also creates conditions for the practical application of the knowledge they already gained and enriches their theoretical knowledge with practical experience. Thirdly, the degree of participation of students in the country's public life has been raised not only in student organizations within universities or colleges (for example, participation of student representatives at meetings of scientific councils of the department and the university or college as a whole), but also in the public organizations of the given city or district.

The dual task of humanistic education (general scientific knowledge and professional training) predetermines the nature of its organization. It is organized so as to train people with a wide and deeply scientific grounding who are able properly to apply in practice the knowledge gained and solve creatively the problems confronting them.

The curricula of some specialties given in the appendices to this chapter show how these tasks are being accomplished with regard to each specialty.

The breadth of education and its deeply scientific nature are ensured by general courses in the main theoretical subjects and the system of special courses and special seminars. Speaking of the significance of general courses, it is necessary to point to such of them as the theory and history of the State and law which are read not only at law departments, but also at other departments in the humanities. General history, the history or political doctrines, the history of economic theories, the history of philosophy are taught at most departments in the humanities, etc. At some departments in the humanities such courses as the history of economic theories and the history of philosophy are optional. Of great importance among the general courses are political economy and particularly philosophy. The political economy course is based on a concrete analysis of economic processes characterizing the history of man from primitive society to our days. It arms the students with knowledge of the laws of social and economic development, acquaints them with the economic views of the most important representatives of economic theories of all the nations. The significance of teaching philosophy for departments in the humanities is enhanced by the fact that in addition to a course of dialectical and historical materialism there is a course in the history of philosophy as well as logic and psychology. Moreover, instruction in all the humanities (history, the study of literature, linguistics, law, etc.) is infused with philosophical content and is marked by generalizations which bring the concrete study close to philosophy. Herein, specifically, is one of the distinctive features and merits of humanistic education in the USSR. Special courses and special seminars are arranged only in the senior years (third, fourth and fifth), inasmuch as they presuppose a certain general orientation of the student in the system, principles and basic postulates of the given science. Special study, as deep as possible, of a few sciences or their sections constitutes an important element and feature of a scientific education, particularly a university education. This is achieved by the system of special courses and special seminars at the given department and also by the course and diploma work. The aim of special courses and special seminars is to afford a deeper study of separate branches of the given set of sciences or even only some of the biggest and most important problems. The entire system of special courses read at a definite department is designed to ensure a narrower scientific specialization of the students within the bounds of the given specialty on the basis of a general broad theoretical grounding.

Special courses and optional courses and also the right of students to take one or another course at the philosophy, history, law or philology
have been translated into Russian in the USSR.
Much attention is given to the study of the works
of foreign sociologists, for example, the head
of the American school of psychological sociology
Edward Ross, of S. Winston, representative of
"biological sociology", etc.

In learning the history of psychology, the
students are given a detailed presentation not only
of the psychological views of scientists of the past,
but also the contemporary views of Weber, Fechner,
Wundt, Ebbinghaus, Mayman, W. James. Titchener,
Thorndyke, Woodworth and the most widespread
trends of modern psychology (behaviourism, social
psychology, zoo-psychology, neo-freudism).

At law departments courses of lectures are
read on State law of bourgeois States, State law of
the People's Democracies, civil and commercial
law of capitalist countries, civil law of the
People's Democracies, criminal law of the capi-
talist countries, etc. Contemporary foreign legal
doctrines (normativism, theories of the realistic
and sociological schools, etc.) are studied in the
process of learning special law subjects. In
addition students hear a course on the history of
political theories. Works on the theory of
"people's capitalism" by American and European
representatives, for example, N. Galbraith,
Strachey, etc. are studied in detail.

At times foreign colleagues ask how we present
to the students the works and views of philosophers,
economists, historians or representatives of the
other humanities who are not Marxists: only in
the form of criticism or an exposition of their
postulates?

Firstly, let us note that a positive exposition of
one or another system does not preclude its criti-
cism, just as criticism presupposes a knowledge
of the material which is being subjected to a
critical analysis.

Secondly, there is no scientist in the world who,
presenting one or another theory, would not define
his attitude to it.

Indifference with regard to the subject matter
is the position of a translator, but not of a
scientist. Thus, we of course study (but precisely,
study) the conceptions of non-Marxist authors
from Marxist positions. Let me explain this by
citing an example. It is known how widespread
the economic theory of Keynes is in capitalist
countries. Its author laid claim to "overcoming"
fully the Marxist economic theory. Keynesians
have quite strong positions in the biggest univer-
sities of the United States of America, Britain and
other countries. Some practical conclusions from
the economic theory of Keynes are utilized in the
economic, chiefly financial policies of a number
of capitalist States. Thus, this theory has gone
beyond the bounds of theoretical suppositions
which are completely divorced from life and
therefore are Utopian and groundless, and which
are not infrequently presented in university audit-
oriums of capitalist countries. (Let me name
for example the theory of the Swedish professor
G. Myrdal outlined in his work "World Economy, Problems and Prospects".)

Keynes' theory undoubtedly deserves study. Consequently a professor who outlines the contents of his theory, its principles and scientific arguments, analyses the actual material presented by Keynes, his main conclusions, etc. The most important work of Keynes, "The General Theory of Employment, Interest and Money" has been translated into Russian and every student can (and a student of an economic department must) know it. The professor next analyses the scientific solvency of the theory, i.e. to what degree its application has confirmed the scientific value of the theory, what in it has withstood the severe test of time; he shows why, notwithstanding the recipes Keynes put forward for wiping out unemployment for ever, creating a "full employment economy" and stimulating the constant growth of investment and thereby precluding crises and painful fluctuations of business activity from the life of society - all these phenomena continue to exist, etc. And lastly, we establish that many things in the theory of Keynes (to be more exact in the works of Keynes as a whole, having in view the actual material and particular generalizations of the practices of capitalist economic management) properly reflect the objective processes in the development of capitalism and can be utilized by us for more concrete knowledge of capitalism, its present-day phenomena, and what must be irrevocably rejected. In similar cases, chemists say as regards their work: what will the "dry residue" be? And lastly - which depends on the temperament of the professor who reads the lecture - we cannot forego the scientific and political pleasure of scornfully rejecting and establishing the unscientific nature of the claims made by the followers of Keynes that they have "destroyed" or "replaced" the theory of Marx.

We act the same way when presenting pragmatism in the course of philosophy or the "theory of balancing forces" of the American professor Galbraith in the course of political economy.

The Soviet people highly value the spiritual cultural treasures of all the peoples of the past and of all contemporary nations. This applies not only to great peoples who won glory for their countries by remarkable contributions to world culture, but also to the small peoples who have been regenerated in recent decades, to many peoples of Asia and Africa who, after winning political independence, have gained a wide opportunity for independent cultural creative endeavour. Contempt for the history and culture of small and backward (as a rule through no fault of their own) countries is alien to Soviet science. This is a manifestation of its great humanist traditions. This is expressed first of all in the fact that students are given a course in the history of the peoples of the USSR, instead of the Russian history course which was taught prior to the October Revolution. Soviet philologists have created written languages for nearly 50 peoples of the USSR who had no written languages of their own prior to the revolution. Soviet Orientalists are studying with deep respect the histories of the Asian and African peoples, their ancient rich cultures. This respect is constantly fostered among the students as well. The history of Confucianism, Buddhism, Islam, etc. is studied alongside contemporary political theories and culture.

Most languages and literatures of the world are studied at the philological and historico-philological departments at universities and teachers' institutes.

Planning, that is the building up of such a system of specialist training in the humanities as would be based on the real requirements of a country's economy and culture, is one of the basic principles of the Soviet system of humanitarian education, just as of the entire system of higher education. Such planning is fully scientific in conditions of planned Socialist society. But this connexion of higher humanistic education with the requirements of society and its planning should not be understood in a narrow, simplified way. This planning proceeds from: (a) scientifically determined requirements in specialists for the different fields in the immediate future; (b) the prospects of economic and cultural development for longer terms; (c) the tasks of developing each nation and nationality of the Soviet Union; (d) the educational requirements of the youth and the entire population.

It is on the basis of an account of these fundamental factors that humanistic education is planned both as regards enrolments and the specialties in which the students are to be trained.

For example: 1. In a number of universities specialists in classical philology are trained in numbers exceeding the country's requirements. Their training, however, is kept up, proceeding from the need to preserve the corresponding centres of classical philology and the development of the philological sciences. To enable future specialists in classical philology to work freely, irrespective of the demand for such specialists, the universities train them simultaneously along two lines: classical philology and Russian language and literature. Such training in two fields is practised in some other cases where the number of specialists graduated exceeds the immediate requirements (see curricula in classical philology, the study of foreign Eastern countries, the study of Spanish language and literature, etc. in the appendices).

2. A number of Soviet universities have started to train specialists in mathematical linguistics and machine translation, although the demand at present is very limited (and will be such in the next few years). But taking into account the need for developing this branch of science and also the possible requirements in the more distant future, the Government has decided to develop education
in these spheres. The professional interests of the students in the given case are likewise ensured, just as indicated above, by training in a second specialty, mathematics.

The system of higher education in the humanities in the USSR now includes:

1. A historian can obtain education in:
   (a) History departments at universities (Azerbaijanian, Byelorussian, Kazakh, Moscow, Leningrad and other universities);
   (b) Historic-philological departments at universities (Bashkirian, Vilnius, Gorky and other universities);
   (c) Historic-philosophic departments (Kiev University);
   (d) Historico-legal department (Turkmen University);
   (e) Departments of the humanities (Yakutian University);
   (f) Historic-philological departments at teachers' institutes;
   (g) The Moscow Historico-Archive Institute;
   (h) Orientology departments at universities (Leningrad University, Oriental Institute of Moscow University).

2. A philological education can be obtained in:
   (a) Philology departments at universities (Leningrad, Moscow, and other universities);
   (b) Foreign language departments at universities (Leningrad, Yerevan, Tbilisi);
   (c) Historico-philological departments (Bashkir, Vilnius, Gorky, Voronezh and other universities);
   (d) Departments of the humanities (Yakutian University);
   (e) Historic-philological departments at teachers' institutes;
   (f) Orientology departments at universities (Leningrad University, Oriental Institute of Moscow University).

3. An Orientalist education, taken as a special form of a humanitarian education, specifically historic-philological, can be obtained:
   (a) In universities at Orientology departments (Azerbaijanian, Central Asian and Leningrad universities and the Oriental Institute of Moscow University);
   (b) In the form of specialties at philological and historic-philological departments of some universities;
   (c) In the form of specialties of historic-philological departments of some teachers' institutes.

Speaking of a philological education mention should be made of the huge range of languages and literatures studied in the USSR.

There is hardly any other country where so many languages are represented in a humanitarian education. Specialists in the following foreign languages and literatures are trained in Soviet universities and teachers' institutes:

(1) Russian language and literature; (2) English language and literature; (3) German language and literature; (4) French language and literature; (5) Spanish language and literature; (6) Italian language and literature; (7) Swedish language and literature; (8) Norwegian language and literature; (9) Danish language and literature; (10) Hungarian language and literature; (11) Albanian language and literature; (12) Rumanian language and literature; (13) Polish language and literature; (14) Czech language and literature; (15) Bulgarian language and literature; (16) Latin language and literature; (17) Greek language and literature; (18) Iranian language and literature; (19) Turkic language and literature; (20) Semitic languages and literature; (21) Indian languages and literature; (22) Arabic language and literature; (23) Afghan language and literature; (24) Uigur language and literature; (25) Chinese language and literature; (26) Japanese language and literature; (27) Korean language and literature; (28) Indonesian language and literature; (29) Viet-Name language and literature; (30) Tibetan language and literature; (31) Mongolian language and literature; (32) languages and literatures of the peoples of South East Asia; (33) Ukrainian language and literature; (34) the languages and literatures of the peoples of Africa; (35) Byelorussian language and literature; (36) Lithuanian language and literature; (37) Lettish language and literature; (38) Estonian language and literature; (39) Moldavian language and literature; (40) Azerbaijanian language and literature; (41) Daghestanian languages and literatures; (42) Armenian language and literature; (43) Kabardinian language and literature; (44) Balkarian language and literature; (45) Georgian language and literature; (46) Karachaynev language and literature; (47) Circassian language and literature; (48) Ossetian language and literature; (49) Abkhazian language and literature; (50) Chechen language and literature; (51) Ingushetian language and literature; (52) Bashkirian language and literature; (53) Buryat language and literature; (54) Tatar language and literature; (55) Kazakh language and literature; (56) Kirghiz language and literature; (57) Uzbek language and literature; (58) Tajik language and literature; (59) Turkmen language and literature; (60) Yakut language and literature; (61) Khakassian language and literature; (62) Adygheian language and literature; (63) Altai language and literature; (64) Karakalpakian language and literature; (65) Komi language and literature; (66) Tuvinian language and literature; (67) Marii language and literature; (68) Udmurtnian language and literature; (69) Chuvashian language and literature; (70) languages and literatures of peoples in the Far North.

The above list of languages of literatures studied in universities and colleges not only reflects the multinational character of our State and is embodiment of the national policy of the Communist Party, it testifies at the same time to
the broad scale in the organization of a humanistic education in the USSR and the attention paid to the culture of other peoples.

4. An economic education can be obtained in:
(a) Departments of economics at universities (Moscow, Leningrad, Yerevan, Kazakh, etc.);
(b) Departments of economics and law at universities (Kirghiz, Tomsk Universities);
(c) Special economic institutes (economic, financial and economic, engineering and economic, trade and economic institutes);
(d) A special engineering and economic department at technical colleges.

All these educational establishments train specialists in the following lines: political economy (Moscow, Leningrad and Kiev Universities); planning of the national economy (Yerevan and Tomsk Universities); economics of industry (Vilnius, Kazakh, Kirghiz and other universities and also special economic institutes); economics of agriculture (Kirghiz, Latvian, Tajik, Tomsk and other universities and special economic institutes); finances and credit (Vilnius, Yerevan, Kishinev and other universities and special economic institutes); economics of trade, economics of transport, book-keeping and accounting, statistics, etc.

5. A legal education can be obtained in:
(a) Law departments at State universities (Moscow, Leningrad, Azerbaijanian, Byelorussian, Yerevan and other universities);
(b) Departments of economics and law (Latvian and other universities);
(c) Departments of history and law (Turkmen University);
(d) Historico-philological departments (Far Eastern University);
(e) Special law institutes (Sverdlovsk, Saratov, Kharkov).

In the main a legal education is concentrated in the universities.

6. An education in philosophy can be obtained in:
(a) Philosophy departments at universities (Moscow and Leningrad Universities);
(b) Historico-philosophic department (Kiev University);
(c) Law department (Tbilisi University).

7. An art education can be obtained in theatrical institutes, conservatoires of music, art institutes, and at the Moscow Literary Institute. In addition, the history departments of some universities (Moscow and Leningrad) train specialists in the history of the arts.

8. An education in bibliography, the study of library work and cultural and educational activities can be obtained in:
(a) Special library institutes (Leningrad, Moscow, Kharkov);
(b) Philological or historico-philological departments of universities (Azerbaijanian, Vilnius, etc.).

9. An education in journalism is given in the USSR on the basis of a philological education and in this sense can be regarded as a special type of a philological education. At present an education in journalism can be obtained in universities at special departments of journalism (Moscow and Leningrad, Azerbaijanian, and other universities).

The existing system of education in the USSR is not something immutable. Curricula, the concrete trend of separate courses and specialties will be changed, corrections will be introduced in the proportions between theoretical courses and practical work during the term of university studies and so on. But the humanistic core of education which moulds the Communist ideology of the builders of the most progressive social system has been, is and will always be, an organic component part of any type of education in the USSR.

It is necessary to mention briefly the method of teaching the humanities.

This method is applied not only in teaching the humanities but also the natural and technical sciences which, in turn, expresses the general line in training specialists.

The main principle, the cardinal task of the higher school is not only to impart to the students a definite sum of knowledge, but also to train them in the ability to learn, i.e. the ability systematically and continuously to renew and supplement the scientific information they acquired, to perfect the methods of analysis and conclusions, to apply their knowledge and skills in practice, and to test them in practice. This testing is one of the ways in which the higher school takes into account the requirements of swiftly changing life, the requirements of the future. That is why we demand of the student not belief in the Marxist theory but a profound understanding of it, not a dogmatic assimilation of the material, but conscious, creative, critical study of the original source material, which results in scientific conviction. The higher school strives not for a verbal, formal denial and criticism of anti-Marxist theories, but for an understanding of their social class roots, the imperfection or mistakes of such methods, their inner contradictions, etc. The university and other institutions of higher learning must develop in the students the ability to find in non-Marxist research the rational element which can help in the objective cognition of the intricate fabric of social, economic, political and ideological relations.

The content of humanistic education in the USSR (and in all the Socialist countries) is permeated with genuine and consistent humanism. The Latin word "humanitas" means humanism. It means love and faith in humanity and man. These features of humanistic studies in the USSR are inseparably bound up with the task to build a new society in which the exploitation of man by man and racial and national inequality have been abolished for ever, where everything is subordinated to satisfying all the physical and spiritual requirements of each man, to the protection of his freedom, dignity and honour.
All subjects which in their sum total comprise a humanistic education serve the idea of preserving peace, establishing friendship and understanding between peoples and countries, bringing up people in the spirit of the principles of peaceful coexistence of States with differing social and political systems, in the spirit of condemning war as a method of resolving international disputes. It will be recalled that war propaganda is prohibited by law in the USSR.

Humanistic education in the USSR, infused with genuine humanism, fosters cheerfulness and optimism as characteristic traits of members of Socialist society. Man's happiness, the famous Soviet pedagogue Makarenko stated, is a derivative of the prospects open before man and before his country, before humanity. Our faith in a radiant future rests on a solid scientific foundation. It has already been tested by the history of our State, the history and experience of other Socialist countries, the development of international Socialism. It rests on the philosophical proposition that man can not only understand the world but also change it. The direction of this change is indicated in the sweeping plans for the development of the material and spiritual life in the USSR. That is why for millions of people the future has become a factor moulding their life today, a factor of a creative optimistic attitude to life. Soviet men and women are deeply convinced in the correctness of the great thinker of Communism, Karl Marx who fore-saw that a time will come (and this time has already come) when... a new society will come into being, whose international principle will be peace because all the peoples will have one and the same master - labour*). The entire system of humanistic education in the USSR is called upon to facilitate the attainment of this great goal.

## APPENDIX I

### Leningrad University

**History Curriculum**

<table>
<thead>
<tr>
<th>No. / Subject</th>
<th>Number of hours including lectures and pract. studies</th>
<th>Distribution by years and terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total 1st term 2nd term 1st term 2nd term 1st term 2nd term 1st term 2nd term 1st term 2nd term</td>
<td></td>
</tr>
<tr>
<td>1. History of the CPSU</td>
<td>220 120 100 3 3 4 4</td>
<td></td>
</tr>
<tr>
<td>2. Political economy</td>
<td>214 114 100 - - 4 3 4 4</td>
<td></td>
</tr>
<tr>
<td>3. Dialectical and historical materialism</td>
<td>140 80 60 - - - - 5 2 4</td>
<td></td>
</tr>
<tr>
<td>4. History of philosophy</td>
<td>70 70 - - - - - 4</td>
<td></td>
</tr>
<tr>
<td>5. Logic</td>
<td>70 44 26 4</td>
<td></td>
</tr>
<tr>
<td>6. Psychology</td>
<td>36 20 16 - - - - 2</td>
<td></td>
</tr>
<tr>
<td>7. Pedagogics</td>
<td>56 56 - - - - - 4</td>
<td></td>
</tr>
<tr>
<td>8. Methodology of teaching</td>
<td>60 40 20 - - - - 4</td>
<td></td>
</tr>
<tr>
<td>9. Foreign language</td>
<td>270 - 270 4 4 4 4</td>
<td></td>
</tr>
<tr>
<td>10. Latin</td>
<td>200 - 200 4 4 4</td>
<td></td>
</tr>
<tr>
<td>11. Fundamentals of archaeology</td>
<td>36 36 - - 2</td>
<td></td>
</tr>
<tr>
<td>12. History of primitive society and fundamentals of ethnography</td>
<td>36 36 - - 2</td>
<td></td>
</tr>
<tr>
<td>13. History of the ancient world</td>
<td>204 136 68 6 6</td>
<td></td>
</tr>
<tr>
<td>14. History of the Middle Ages</td>
<td>154 104 50 - - 5 4</td>
<td></td>
</tr>
<tr>
<td>15. History of the Southern and Western Slavs</td>
<td>100 100 - - 2 4</td>
<td></td>
</tr>
<tr>
<td>16. History of foreign Eastern countries (middle ages, modern and current)</td>
<td>238 238 - - 4 4 3 4</td>
<td></td>
</tr>
<tr>
<td>17. Modern and current history</td>
<td>300 200 100 - - 6 4 5 6</td>
<td></td>
</tr>
<tr>
<td>18. History of the USSR</td>
<td>472 272 200 4 6 4 4 6 4</td>
<td></td>
</tr>
<tr>
<td>19. Russian language</td>
<td>36 - 36 - 2</td>
<td></td>
</tr>
<tr>
<td>20. Physical training and sports</td>
<td>136 - 136 2 2 2 2</td>
<td></td>
</tr>
<tr>
<td>21. Optional subjects</td>
<td>500 300 200 - - 6 6 8 8 6</td>
<td></td>
</tr>
<tr>
<td>22. Pedagogical practice</td>
<td>6 weeks</td>
<td></td>
</tr>
<tr>
<td>23. Production training</td>
<td>5 weeks</td>
<td></td>
</tr>
<tr>
<td>24. Diploma work</td>
<td>Second term of fifth year</td>
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</tr>
</tbody>
</table>

**Units per week**

- 1st term
- 2nd term
- 1st year
- 2nd year
- 3rd year
- 4th year
- 5th year

**Legend**

- History
- Foreign languages and literature
- Foreign languages
- Physical education
- Spoken foreign languages
- Professional subjects
- Physical education
OPTIONAL SUBJECTS (approximate list)

1. History of the Ukraine (64 hours)
2. History of Byelorussia (64)
3. History of Russian literature of the 19th and 20th centuries (66)
4. History of Soviet literature (66)
5. History of Russian technology (66)
6. History of Russian and Soviet art of the 19th and 20th centuries (64)
7. International relations and the foreign policy of the USSR (56)
8. History of West European literature in the epoch of feudalism (64)
9. History of West European literature of the 19th-20th centuries (42)
10. History of modern Slavonic literature (32)

Notes:
The list of optional subjects and special courses is approved annually by the Scientific Council of the department, changing from year to year. As an example here is a list of the new special courses of lectures read in 1958:
1. Russian settlements in America (30 hours)
2. Revolutionary Narodism of the 70s and 80s (30)
3. The town and urban uprisings in Russia of the 17th century (28)
4. Establishment of the Versailles system (28)
5. Italian free thinkers (30)
6. History of Hellenism (30)
7. The fall of the republic and the principate of August (50)
8. Greek towns in Sicily and Southern Italy prior to the Roman conquest (36), etc.
## APPENDIX II

### LENINGRAD UNIVERSITY

**Curriculum in the History of Art**

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Number of hours including</th>
<th>Distribution by years and terms</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>1st year</td>
<td>2nd year</td>
</tr>
<tr>
<td>1</td>
<td>History of the CPSU</td>
<td>220</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Political economy</td>
<td>214</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Dialectical and historical materialism</td>
<td>140</td>
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**OPTIONAL COURSES AND SPECIAL COURSES**

1. Introductory course to the study of art (68 hours)
2. Byzantine art (32)
3. Oriental art of the Middle Ages (32)
4. Russian folk art (30)
5. Applied art (68)
6. Principles of museum work (30)
7. Drawing and painting (68)
8. Art of antiquity (68)
9. History of aesthetics (30)
10. History of architectural styles (40)
11. History of culture (68), etc.
### APPENDIX III

#### RUSSIAN LANGUAGE AND LITERATURE

<table>
<thead>
<tr>
<th>No. / Subject</th>
<th>Number of hours</th>
<th>Distribution by years and terms</th>
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<td>Political economy</td>
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<td>3</td>
<td>Dialectical and historical materialism</td>
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<td>7</td>
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<td>10</td>
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<td>20</td>
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<td>21</td>
<td>Foreign literature (including antiquity)</td>
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<td>Fundamentals of literary studies</td>
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<td>23</td>
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<td>24</td>
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<td>Optional courses</td>
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*Hours per week*
OPTIONAL SUBJECTS AND SPECIAL COURSES (approximate list)

1. History of the Slav people (34 hours)
2. History of the Russian people (32)
3. History of the Russian theatre (18)
4. Greek (136)
5. Foreign language (136)
6. Sanskrit and ancient languages on a comparative historical plane (136)
7. Paleography (34)
8. Lexicography (34)
9. Comparative grammar of Indo-European languages (68)
10. History of the Russian linguistics (34)
11. History of Russian art (34)
12. Literature of the peoples of the USSR (Caucasian, Baltic countries, Central Asian) (68)
13. History of Russian journalism (68)
14. Russian language seminar (68)
15. Comparative grammar of Slavonic languages (56)
16. History of Slavonic literatures (124), etc.

A LIST OF NEW SPECIAL COURSES OF LECTURES READ IN 1958

1. Problems of word building (73 hours)
2. Russian lexicography and lexicology (73)
3. Theory of the simple sentence in Russian linguistics (73)
4. Parts of speech in the Russian language (73)
5. Impersonal sentence (73)
6. Stylistics of the Russian language (73)
7. Phonetics of the Russian language (68)
8. Leo Tolstoy (68)
9. Russian historical song (36)
10. Ivan Bunin's prose prior to 1917, etc.
### APPENDIX IV

#### ROMANO-GERMANIC LANGUAGES AND LITERATURES

#### SPANISH (ITALIAN) LANGUAGE AND LITERATURE

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<th>Distribution by years and terms</th>
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<td>4. History of philosophy</td>
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<td>5. Logic</td>
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<td>6. Psychology</td>
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### OPTIONAL COURSES AND SEMINARS

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<td>26. Pedagogical practice</td>
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<td>27. Optional courses and seminars</td>
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#### Courses

1. Literature of antiquity (36 hours)
2. Lexicology (Spanish or Italian) (32)
3. Stylistics (Spanish or Italian) (36)
4. Dialectology (Spanish or Italian) (36)
5. Special language course (56)
6. Language seminar (56)
7. Comparative grammar of Indo-European languages (56)
8. Second foreign language (88)
9. Portuguese (56)
10. Catalan language (90)
11. Galician language (90)
12. Provençal language (56)
13. Rumanian language (56)
14. Historical grammar of Latin (56), etc.

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### APPENDIX V

#### CLASSICAL PHILOLOGY

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<td>29. Diploma work</td>
<td>second term of fifth year</td>
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Hours per week
### APPENDIX VI

**EASTERN LANGUAGES AND LITERATURE**

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<tr>
<td>2. Political economy</td>
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<td>3. Dialectical and historical materialism</td>
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<td>4. History of philosophy</td>
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<td>5. Logic</td>
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<td>8. Fundamentals of linguistics</td>
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<td>9. Fundamentals of literary studies</td>
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<td>18. Optional courses and seminars</td>
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<td>19. Production training</td>
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<tr>
<td>20. Diploma work</td>
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OPTIONAL COURSES

1. Foreign (western) language (136 hours)
2. Ethnography and material cultures of the countries of the language studied (72)
3. Principles of museum work (32)
4. Paleography and epigraphy (32)
5. History of art of the country of the language studied (68)
6. History of the ideological doctrines of the country studied (68)
7. History of Russian and Soviet orientalogy (36)
8. Oriental numismatics (36)

APPROXIMATE LIST OF OTHER OPTIONAL COURSES AND SEMINARS

1. History of linguistic theories
2. Comparative historical grammar of kindred group of studied languages
3. Comparative grammar of studied Eastern and Russian languages
4. History of Russian literature of the 19-20th centuries
5. Special courses and special seminars in the basic language studied
6. Special courses and special seminars in the literature of the country of the language studied

LIST OF EASTERN LANGUAGES AND LITERATURES WHICH CAN BE STUDIED IN A UNIVERSITY

A. Chinese language and literature
   1. Chinese language (2148 hours)
   2. Additional eastern language (Japanese or Tibetan (272)
   3. History of Chinese literature (136)
   4. History of China (136)

B. Tibetan language and literature
   1. Tibetan language (1940)
   2. Additional eastern language:
      (a) Chinese (340)
      (b) Sanskrit (140)
   3. History of Tibetan literature (136)
   4. History of Tibet (136)

C. Viet-Namese language and literature
   1. Viet-Namese language (1464)
   2. Additional eastern language (Chinese) (956)
   3. History of Viet-Namese literature (136)
   4. History of Viet-Nam (136)

D. Manchurian language and literature
   1. Manchurian language (1252)
   2. Additional eastern language (Chinese) (1188)
   3. History of Manchurian literature (136)
   4. History of Manchuria (136)

E. Japanese language and literature
   1. Japanese language (2148)
   2. Additional language (Chinese) (272)
   3. History of Japanese literature (136)
   4. History of Japan (136)

F. Korean language and literature
   1. Korean language (2148)
   2. Additional languages:
      (a) Japanese (272)
      (b) Chinese (168)
   3. History of Korean literature (136)
   4. History of Korea

G. Indian languages and literature
   1. Main languages:
      (a) Hindustani (1740)
      (b) Sanskrit (340)
   2. Additional languages (Marathi, Bengali, Punjabi, Tamil, choice) (272)
   3. History of Indian literature (204)
   4. History of India (136), etc.
      (Malay language and literature, Turkish languages and literature, Iranian languages and literature, and so on).
## APPENDIX VI

### STUDY OF FOREIGN EASTERN COUNTRY

<table>
<thead>
<tr>
<th>No./Subject</th>
<th>Number of hours including lectures, seminars and pract. studies</th>
<th>Distribution by years and terms</th>
<th>Hours per week</th>
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<td>2. Political economy</td>
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<td>3. Dialectics and historical materialism</td>
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<td>4. History of philosophy</td>
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<td>5. Foreign (western) language</td>
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<td>6. Pedagogics</td>
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<td>7. Logic</td>
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<td>8. Methodology of teaching history</td>
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<td>9. History of the USSR</td>
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<td>10. History of primitive society</td>
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<td>11. History of the Ancient East</td>
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<td>12. History of Greece and Rome</td>
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<td>13. History of the Middle Ages</td>
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<td>14. Modern and current history</td>
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<td>15. History of foreign eastern countries</td>
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<td>16. Basic eastern languages</td>
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<td>17. Geography of the country studied</td>
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<td>18. History of the country studied</td>
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<td>19. The State and political system of the country studied</td>
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<td>20. Historiography and source material studies</td>
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<td>21. History of the literature of the countries studied</td>
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<td>22. Economics of the country studied</td>
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<td>seminars and pract. studies</td>
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<td>23. Physical training and sports</td>
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<td>24. Optional courses and seminars</td>
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<td>25. Diploma work</td>
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<td>26. Pedagogical practice</td>
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### Distribution by years and terms

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### OPTIONAL SUBJECTS (approximate list)

1. Foreign language (70 hours)
2. Ethnography of the country studied (30)
3. Fundamentals of archaeology (40)
4. Additional eastern languages (240)
5. Paleography and ethnography (70)
6. Oriental numismatics (36)
7. Material culture and art of eastern countries (70), etc.

### LIST OF EASTERN COUNTRIES WHICH CAN BE STUDIED IN A UNIVERSITY

#### A. China
1. History of China (236)
2. Chinese language (1562)
3. History of Chinese literature (136)

#### B. Japan
1. History of Japan (236)
2. Japanese language (1562)
3. History of Japanese literature (76)

#### C. Korea
1. History of Korea (236)
2. Korean language (718)
3. Chinese language (844)
4. History of Korean literature (136), etc.
## APPENDIX VIII

### SCIENCE OF LAW

<table>
<thead>
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<th>No./Subject</th>
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<td>1. History of the CPSU</td>
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<tr>
<td>2. Political economy</td>
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<td>200</td>
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<tr>
<td>3. Dialectical and historical materialism</td>
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<td>80</td>
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<td>4. Theory of the State and law</td>
<td>130</td>
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<tr>
<td>5. General history of the State and law</td>
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<tr>
<td>6. History of the State and law of the USSR</td>
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<td>7. History of political doctrines</td>
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<td>8. Foreign languages</td>
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<td>9. Latin</td>
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<td>10. Roman law</td>
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<td>11. Logic</td>
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<td>12. State law</td>
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<td>13. Organization of the court and procurator's office</td>
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<td>14. State law in the People's Democracies</td>
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<td>15. State law in capitalist countries</td>
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<td>16. Financial law</td>
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<td>17. Administrative law</td>
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<td>18. Criminal law</td>
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<td>19. Criminal action</td>
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<td>20. Criminology</td>
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<td>21. Civil law</td>
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<td>22. Family law</td>
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<td>23. Civil action</td>
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<td>24. Labour law</td>
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<td>25. Land law</td>
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<td>26. Collective-farm law</td>
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<td>27. International law</td>
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<td>28. Judicial statistics</td>
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<td>29. Fundamentals of book-keeping and accounting</td>
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<td>30. Forensic medicine</td>
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<td>31. Forensic psychiatry</td>
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<td>32. Procurator’s supervision</td>
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<td>32</td>
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<tr>
<td>33. Special courses and special seminars on the theory of the State and law</td>
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<tr>
<td>34. Physical training and sports</td>
<td>128</td>
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<td>35. Optional subjects</td>
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<td>130</td>
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<tr>
<td>36. Production training</td>
<td>18 weeks</td>
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**DOCUMENTARY COURSES**

1. History of the State and law of the Union Republics
2. Civil and commercial law of capitalist States
3. Criminal law of capitalist States
4. History of international relations
5. International private law
6. Foreign language

**OPTIONAL COURSES**

A. Chairs of State and administrative law, history of the State and law
   1. Special courses and special seminars on separate sections of State and administrative law (countries of the Soviet State; management of industry, agriculture, trade, social and cultural development, legal regulation of labour, etc.) (280 hours)
   2. Development of the Soviet State (280)
   3. Fundamentals of national economic planning (280)
   4. Source materials on the history of the Soviet State and law (280)
   5. Office management in Soviet State institutions (280)

B. Chairs of criminal law, criminal action and criminology
   1. Special courses in separate sections of criminal law and criminal action (protection of Socialist and personal property under criminal law, military crimes, crimes against the system of management, malfeasance, appeals and procedure of appeals and supervision, etc.) (280)
   2. Criminal law and criminal action in the People’s Democracies (280)
   3. Criminology (280)
   4. Organization of the work of the court and the procurator’s office (280)

C. Chairs of civil law, civil action, land, collective-farm and labour laws (280)
   1. Special courses and special seminars on separate sections of civil law and civil action (transport law, protection of Socialist and personal property under civil law, legal problems of procurements, planning, cost accounting and economic contracts, copyright law, patent law, social insurance and social maintenance, etc) (280)
   2. Arbitration in the USSR (280)
   3. Notary public service (280)
   4. Land and collective-farm law (280)
   5. Labour law (280)
   6. Civil law and civil action in the People’s Democracies (280)

Note: A student has to choose any of the three cycles (A, B or C) of subjects as an obligatory one.
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  (b) original negatives and duplicate negatives;
  as well as
  (c) 16 mm. raw film for printing the above categories of films;
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