Министерство образования и науки Украины
Донбасская государственная машиностроительная академия (ДГМА)

АНГЛИЙСКИЙ ЯЗЫК

Методические указания к разговорным темам

для самостоятельной работы

студентов 1–3-го курсов и магистров

всех специальностей ДГМА

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Содержатся разговорные темы по специальностям ДГМА, лексический материал, упражнения на развитие языковых навыков, контрольные вопросы для самостоятельной работы студентов.

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Department of Economics and Management
Finance and Credit (Ф, ФК)

I study at the Donbass State Engineering Academy that trains different kinds of engineers for various branches of industry: such as metallurgical engineers, mechanical engineers, automatic production engineers, financial specialists.

After graduating from the Academy the highly qualified specialists can work at the financial state departments and agencies, dealing with finances and crediting. Alongside with general education subjects the students study such special ones as: Public finances, Finances of the European countries and World Finance.

The speciality of a financier is interesting and versatile. The main task of an employee of a finance institution is the control over keeping to monetary legality. A great detachment of financiers work as inspectors at the control-inspection administration of Ukraine's Ministry of Finances.

The officials of the budget department draw up the estimates of expenditures for school, hospitals, the houses of culture, etc. They check the correctness of the state means employed in the public educational institutions, medical service establishments and cultural organs.

The financiers working at the department of the state revenue set up a control over national and financial activity at the industrial enterprises and trading centers. They provide the fulfillment of the plan of money revenues and entries into the state budget. The financiers and inspectors are to be able to use perfectly the methods of analysis of the economic activity and auditing. They must be well aware of accounting or book-keeping because it is precisely book-keepers or accountants keep account of the material values of national economy and control rational use of the material resources and monetary means. Practically all operations, connected with receiving or allotting of material values for the needs of an industrial enterprises or budget establishments are carried out with head book-keepers permission. At the end of each fiscal year audit is carried out at all state industrial enterprises and in budget sphere. Book-keepers, financiers and bank officials take part in this auditing procedure.

The job of a financial specialist as well as that of an economist on the whole is not easy but it is very responsible and honorable. The economic and financial might of the Ukraine depends on the successful execution of their duties by our accounting and economic specialists.

Words and word-combinations to be learnt:

financial state department	– финансовые государственные учреждения;
alongside	– наряду с;
versatile	– многосторонний;
monetary legality	– правильное использование денежных средств;

detachment	– отряд, подразделение;
estimate	– оценка, смета, отчёт;
expenditure	– затраты;
state means	– государственные средства;
fulfillment	– выполнение;
entry	– поступление;
state budget	– государственный бюджет;
audit	– аудит;
monetary means	– денежные средства;
is precisely	– вот именно, именно;
might	– мощь.

1. Answer the following questions:

1) What other specialists except engineers does our Academy train?
2) Where can financial and economic specialists find work?
3) What subjects are taught for the future financial specialists?
4) What is the main task of an employee of a finance institution?
5) Who draws up the estimates of expenditures for different institutions?
6) What do the financiers do at the departments of the state revenue?
7) What are the financiers and inspectors to be able?
8.) Whose permission is needed in all operations connected with receiving or allotting of material values for the needs of an industrial enterprises or budget establishments?
9) What is carried out at the end of each fiscal year? Who takes part in this operation?
10) Can we consider the job of a financial specialist easy?

2. Make your own list of specific terms from the text.
3. Retell the text using the words and word-combinations from the text.

Account and Audit (Уч)

I am a student of the Donbass State Engineering Academy. Our Academy trains many specialists for different branches of industry. I am going to be an accountant.

At the Academy we study many economic subjects. Economics is the science which is based upon the facts of our everyday life. The science of economics is concerned with all our material needs and wants. Economists study the facts of the economy in which we live and try to explain how the system works.

Accounting is the process of recording, classifying and summarizing economic events in a logical manner. The accounting process follows accounting principles and rules. Regardless of the type of business or the amount of money involved, common procedures for handling and presenting financial information are

used. Incoming money (revenues) are outgoing money (expenditures) are carefully monitored. Transactions are summarized in financial statements which reflect the major financial activities of an organization. Two common financial statements are the balance sheet and the income statement. The balance sheet shows the financial position of a company at one point in time. The income statement shows the financial performance of a company over a period of time. Financial statements allow interested parties to compare one organization to another and/or to compare accounting periods within one organization.

People who specialize in the field of accounting are known as accountants. If you are considering setting up your own business, an accountant is the best person to give you financial advice. To run your business well you must know what money you have received, how much money you have spent, and most important of all how you spent it. It is the legal requirement that proper financial records are kept and the basic principle is to record every single transaction. One of the purposes is to ascertain whether you have made a profit or loss during a given period. Profit could be described as the difference between the value of the business at the start of trading period and the value of the business at the end of that period. So, the function of an accountant is to provide quantitative information that manages can use to make decisions.

To become a highly-specialized accountant one must be a diligent student. When graduating from the Academy we can work as governmental accountants at governmental agencies or bureaus. We can also work for private companies and individuals and provide accounting services such as auditing and tax computation.

Words and word-combinations to be learnt:

accounting	– учёт, отчётность;
finance	– финансы, доходы;
management	– управление, заведование;
concern	– касаться, иметь отношение;
record	– записывать, регистрировать;
summarize	– суммировать, резюмировать, подводить итог;
regardless	– независимо от;
amount	– количество, сумма, итог;
involve	– включать, вовлекать;
procedure	– процедура, образ действия;
handle	– управлять, регулировать;
incoming	– приход, прибытие, доходы;
revenue	– годовой доход, доходные статьи;
outgoing	– расход, издержки;
expenditure	– потребление, трата, расход;
carefully	– внимательно, аккуратно;
monitor	– контролировать, проверять;
transaction	– дело, сделка;
statement	– официальный отчёт, бюллетень;

major – большой, главный;
balance sheet – (финансовый) баланс;
income – доход, приход, заработок;
point – точка, момент;
performance – исполнение, выполнение;
party – партия, сторона;
set up – организовать, учредить;
advice – совет, консультация;
to run one's business – управлять своим бизнесом;
requirement – требование, необходимое условие;
proper – правильный, надлежащий;
purpose – намерение, цель;
ascertain – устанавливать;
profit – прибыль, доход, польза;
loss – потеря, утрата, убыток;
trading period – срок торговли, торговый период;
quantitative – количественный;
diligent – прилежный, старательный;
tax – (государственный) налог, пошлина;
computation – вычисление, выкладка, расчёт.

1. Answer the following questions:

1) What is economics?
2) What is accounting?
3) What is carefully monitored?
4) Where are transactions summarized?
5) Name two common financial statements.
6) What does the balance sheet show?
7) What does the income statement show?
8) Whom do we call accountants?
9) How can we describe profit?
10) What is the function of an accountant? Where can the graduates of this department find job?

2. Make your own list of specific terms from the text.

3. Retell the text using the words and word-combinations from the text.

Management of Organizations (Мн)

I am a student of the Donbass State Engineering Academy. Our Academy trains many kinds of engineers for different branches of industry. At the same time the specialists in the fields of Finance and Crediting, Economics, Economic Cybernetics and Management are taught here.

My speciality deals with management. Management is needed whenever people work together in an organization and to reach organizational objectives. The objective of most firms and companies is to provide services for people and to make a profit for the owners. If the firm stops giving services, people will no longer patronize it. If there's no profit, the company will soon be unable to perform the needed service.

To achieve objectives, managers need to maintain the balance among the conflicting demands of the stakeholders of an organization. Stakeholders are all those, who have a stake in an organizational success, including employees, owners, customers, creditors and others. Owners seek a satisfactory return on their investment; employees want good pay and comfortable working conditions: management must also please its customers, for without them the company will have little purpose; creditors, suppliers, trade associations should also be considered. So, management must balance the interests of different groups.

Management is also needed to achieve efficiency and effectiveness. Efficiency is the ability to get things done correctly. An efficient manager is the one, who gets higher output relative to the inputs (labour, material, money, machines and time). Effectiveness is the ability to choose the most suitable goals and proper steps to achieve them. That is, effective managers select the right things to do and the right methods for getting them done.

Managerial skills are certain skills that managers need in order to do their jobs effectively. These skills include conceptual, technical, administrative and human-relation skills.

Conceptual skills are the mental abilities, needed to acquire, analyze and interpret information, received from various sources, and to make complex decisions. This is the ability to «see the big picture», to plan ahead.

Technical skills include the ability to use the knowledge, tools and techniques of a specific discipline or field. Every industry, every company and enterprises, and every job have their special technical requirements.

Administrative skills include the administrator's ability process paper work in an orderly manner and manage expenditures within the limits set by a budget.

Managers need a network of contacts and human relationships, because to achieve organizational goals a manager has to use the efforts of other people. Therefore human-relation skills are very important skills for a manager. Human-relation skills are abilities to understand other people and to interact effectively with them. Conceptual, technical, administrative and human-relation skills can be acquired through education and experience.

A number of different terms are used for «manager», including «director». «administrator» and «president». The term «manager» is used more frequently in non-profit organizations such as universities, hospitals and social work agencies. When used collectively the term «management» refers to those people who are responsible for making and carrying out decisions within the system. An individual manager is a person who directly supervises people in an organization.

Managing is a hard job. We need to know much and to learn much not only during our studying at the Academy but get experience the whole our life.

Words and word-combinations to be learnt:

management	– управление, заведование;
finance	– финансы, доходы;
deal with	– иметь дело с кем-либо;
reach	– достигать;
objective	– цель, стремление;
provide	– давать, предоставлять; обеспечивать;
profit	– прибыль, доход;
owner	– владелец; собственник, хозяин;
patronize	– покровительствовать, поддерживать, опекать;
achieve	– добиваться, достигать;
maintain	– поддерживать, сохранять;
demand	– требование, настойчивая просьба;
stake	– доля, участие, процент (от какого-либо предприятия);
stakeholder	– участник совместного дела; пайщик;
include	– заключать, включать в себя, содержать в себе;
employee	– служащий; работающий по найму;
output	– продукция; выпуск изделий;
input	– вложения, затраты, инвестиции;
goal	– задача, цель;
skill	– умение; навык;
conceptual	– понятийный, когнитивный; концептуальный;
mental	– интеллектуальный, умственный;
acquire	– получать, приобретать; овладевать;
source	– начало, первоисточник, (перво)причина; источник (информации);
tool	– оборудование; приспособление;
refer	– иметь отношение, относиться; касаться;
supervise	– наблюдать (за чем-либо), контролировать (что-либо).

1. Answer the following questions:

1) What specialists are trained at the Academy?
2) Where is management needed?
3) What do managers need to achieve objectives?
4) Who are stakeholders?
5) What must managers balance?
6) What is efficiency? What is effectiveness?
7) Give the definition of conceptual skills.
8) What are technical skills?
9) What do administrative skills include?
10) Why managing is a hard job?

2. Make your own list of specific terms from the text.

3. Retell the text using the words and word-combinations from the text.

Economy of Enterprise (ЭП)

Economy is economic activity of enterprises in market conditions with the aim of getting profit and augmentation of society well-being.

According to the Internet resources dealing with vacancies, specialists in the field of economy of enterprise are the most claimed. In the ratings of the most popular and highly paid professions economists also take leading place, as the efficiency of enterprise activity depends very much on the competence of economists.

As I always wanted to participate and work in the sphere of economy I decided to enter the Donbass State Engineering Academy at the department of «Economics and Management» and to master the speciality of «Economy of Enterprise».

The profession of an economist combines economics and finances, accounting and jurisprudence. To become a qualified specialist in the field of economy of enterprise, to create and successfully develop your own business, you should understand the essence of business processes and be able to control them, to have knowledge in the field of economic and financial law, to master accounting and statistic accounts of enterprise, to have analytical, management and communicative abilities.

Having entered the speciality «Economy of Enterprise», I hope to master this knowledge and skills.

Speciality «Economy of Enterprise» is the most universal of all economic specialities, which are trained at the Donbass State Engineering Academy, and gives possibility for graduates to work in different economic departments of enterprises and firms of all forms of ownership, taking the vacancies of economists, book-keepers, managers and financiers.

Getting the education on speciality «Economy of Enterprise» you are able:

- to carry out complex financial-economic analysis of enterprise activity;
- to do marketing;
- to make competent solutions concerning commercial and foreign economic enterprise activity;
- to choose the most efficient forms and methods of enterprise organization, to make reengineering business processes;
- to solve the matters of work organization and wages and salaries of the enterprise;
- to work out the economic development strategy and plan all kinds of enterprise activity;
- to form financial resources of the enterprise and work out the measures for their efficient use;
- to analyze expenditures and work out methods and measures for their cutting;
- to analyze results of organization and innovation measures and evaluate their efficiency;
- to improve and efficiently use the material and technical basis of enterprise.

Department «Economy of Enterprise» is the oldest economic department in the Donbass State Engineering Academy and it trains Bachelors, Specialists and Masters.

After graduating the Academy we'll be highly qualified specialists and we'll be able to work as:

- **Chief Managers of enterprises** of different branches and their assistants in economic and commercial matters;
- **Managers and specialists** of economic, financial, sale, supply and marketing departments, labor and wages departments, economic analysis at leading enterprises (NKMZ Co., public company «Energomashspetsstal'», public company «Artyomovsk Plant of Non-Ferrous Metals Working», concern «Stirol» and others);
- **Economists** of credit-financial institutions («Privatbank», «Ukrsibbank», «Ukrsotsbank» and others);
- **Consultants and counselors** of national and foreign firms and companies dealing with investment and innovation;
- **Experts in economy** of different state and public organizations;
- **Private owners of business;**
- **Teachers and scientific workers** of higher educational institutions and research organizations.

Words and word-combinations to be learnt:

economic activity	– хозяйственная деятельность;
augmentation	– увеличение, прирост, приумножение;
claimed	– востребованный;
accounting	– бухгалтерия;
essence	– сущность;
to master	– разбираться в чем-либо;
accounts of enterprise	– отчетность предприятия;
book-keeper	– бухгалтер;
to make solutions	– принимать решения;
to work out	– разрабатывать;
economic development strategy	– стратегия экономического развития;
expenditures	– затраты;
to evaluate efficiency	– оценивать эффективность;
highly qualified specialist	– высококвалифицированный специалист;
chief manager of an enterprise	– руководитель предприятия;
sale department	– отдел продаж;
supply department	– отдел снабжения;
labor and wages department	– отдел труда и заработной платы;
counselor	– советник;
expert in economy	– эксперт по экономическим вопросам.

1. Answer the following questions:

1) What is economy?
2) Why do economists take leading place in the ratings of the most popular and highly paid professions?
3) What is the rating of the specialists in the field of economy according to the Internet resources dealing with vacancies?
4) What is your speciality?
5) Why did you choose it?
6) How is your department called?
7) Is it enough to know only economics to be a good specialist in this field?
8) What knowledge and skills do you need to to become a qualified specialist in the field of economy of enterprise?
9) What will you be able to do getting the education on speciality «Economy of Enterprise»?
10) What can u work as after graduating the Academy?

2. Make your own list of specific terms from the text.
3. Retell the text using words and word-combinations from the text.

Engineering Department
Metallurgical Equipment (MO)

I study at the Donbass State Engineering Academy. It trains different kinds of engineers for various branches of industry: metallurgical engineers, mechanical engineers and specialists in the fields of Economics and Finance.

My speciality is «Metallurgical equipment».

There are three stages of training such engineers: Bachelor, Specialist and Master.

The metallurgical engineers are trained in the following ways:

- Blast-furnace and steel-melting equipment, hot rolling mills;
- Hot and cold rolling mills;
- Cold rolling mills and auxiliary equipment.

«Metallurgical equipment» speciality deals with designing, computer modeling, strength and reliability of metallurgical equipment.

The qualification acquired by our students as a mechanical engineer deals with metallurgical equipment, automatic machines and rolling equipment. The main directions of the work are:

- development of quite new technological processes;
- designing of new machines which would raise the quality of products;
- maximum automatization and mechanization of all production processes;
- increasing reliability of machines and their service life.

Metallurgical industry is the core of the industrial complex in the East of Ukraine.

Metallurgical equipment includes unique and high capacity machines, such as machines of blast furnace and steel-melting shops, cold and rolling mills, special purpose machines and others.

The main tasks set in this branch of industry are the following:

- raising of efficiency and reliability of the equipment intended for work in extreme conditions under severe stresses, high speeds and temperatures;
- modernization of existing machines.

The development of heavy and metallurgical engineering depends on the successful solution of these tasks.

The students of our faculty study different subjects (mathematics, physics, applied mechanics), general technical subjects (resistance of materials, theory of mechanisms and machines) and special subjects (metallurgical equipment, mathematical modeling, designing and others).

The Department of Metallurgical Equipment is one of the oldest departments of our Academy. It has a staff of very qualified doctors, candidates of technical sciences.

At the disposal of our teachers and students there is a modern laboratory where they carry out their research work. Those who want and have some abilities in the field of research work have opportunity to go on with their studies at post-graduate courses.

The department closely cooperates with a number of Ukrainian and foreign higher schools and also with many engineering and metallurgical enterprises.

I like my future speciality. I'll do my best to be a good specialist in the field chosen by me. I'm sure that the professionals of engineering will provide the innovation in the nearest future that will keep our industry vital and dynamic in Ukraine.

Words and word-combinations to be learnt:

equipment	– оборудование;
blast-furnace	– доменная печь;
hot rolling mills	– прокатные станы;
automatization	– автоматизация;
mechanization	– механизация;
reliability	– надёжность;
service life	– срок службы;
core of the industrial complex	– основа промышленного комплекса;
high capacity	– высокая продуктивность;
efficiency	– эффективность;
intended for work	– предназначенный для работы;
existing	– существующие;
successful solution	– успешное решение;
resistance of materials	– сопротивление металлов;
at the disposal	– в распоряжении;
post-graduate courses	– аспирантура;
innovation	– новшество, инновация.

1. Answer the following questions:

1) What kinds of engineers does the Donbass State Engineering Academy train?
2) What are the three stages of training the engineers on the speciality «Metallurgical Equipment»?
3) What does this speciality deal with?
4) What are the main directions of the work?
5) What industry is the core of the industrial complex in the East of Ukraine?
6) What are the main tasks set in the metallurgical industry?
7) What are the subjects studied by the students of the faculty?
8) Are there any post-graduate courses at the faculty?
9) Whom does the department closely cooperate with?
10) What will be your own investment in the industry of our country?

2. Make your own list of specific terms from the text.
3. Retell the text using the words and word-combinations from the text.

Lifting-Transport Machinery and Equipment (ПТМ)

I study at the Donbass State Engineering Academy. It trains different kinds of engineers for

various branches of industry: metallurgical engineers, mechanical engineers and specialists in the fields of Economics and Finance.

My speciality is «Lifting-Transport Machinery and Equipment». It corresponds to the professional preparation in «Mechanical Engineering» and provides training of highly qualified engineering staff. The specialists of this sphere can meet the challenges of designing, operation and maintenance of material handling, construction, road machines used in industry, construction and agriculture.

The teachers of our department constantly improve their level by passing an internship at leading enterprises of Donetsk region, as well as collaborate with companies on the questions of design and safe operation of lifting-transport and construction equipment.

Our students are offered to master the following specializations:

- «Computer-aided design and design of machine tools», «International technical expertise of technological machines and systems» for future specialists in the design of machine tools;

- «Computer shaping technology and design of tools,» «High technologies» for future engineers of tool production;

Students can use in their study:

- a powerful computer preparation with the development of new application software packages;

- a full range of production practices on the leading enterprises of Ukraine, including the target individual preparation programs;

- integrated program of preparation «4 + 1», which combines the theoretical preparation with practice directly on the future workplace; - full-time and correspondence forms of preparation for master's degree;

- the possibility to continue education in post-graduate and doctoral faculty. Among the scientific activities of the Department are the following:

- development of scientific bases of design, operation and maintenance of mechanical equipment of engineering and mining enterprises;

- improving of constructions and methods of calculation of executive mechanisms of excavators, special lifting machinery, cranes, construction machines;

- scientific bases of operation, repair and restoration of efficiency of cranes and their components;

- the scientific study and development of modern pneumatic units.

The department of lifting-transport machines has classrooms, a special laboratory equipped with models, and existing mechanisms for all vocational-oriented subjects, a computer classroom and office space. It allows to make qualitatively the practical and laboratory works and to hold lectures using modern technology.

I like my future speciality. I'm sure that the professionals in the sphere of lifting-transport machinery and equipment will help to keep our industry vital and dynamic in Ukraine.

Words and word-combinations to be learnt:

lifting	– поднимание, подъём, поднятие;
transport	– перевозить; везти, перемещать, переносить; транспортировать; перевозка, транспортирование, транспортировка;
machinery	– машинное оборудование; машины;
equipment	– оборудование;
staff	– штат служащих; служебный персонал; личный состав; кадры;
challenge	– сложная задача, проблема;
maintenance	– содержание и техническое обслуживание, уход; текущий ремонт;
handling	– уход; обработка; перемещение; транспортировка;
internship	– стажировка, учебная практика;
collaborate	– работать совместно, сотрудничать;
computer-aided design	– автоматизированное проектирование;
computer technology	– компьютерные технологии;
shaping	– придание формы; формирование;
application	– применение, использование, употребление; приложение; применимость;

software package	– система программного обеспечения; пакет программ;
target	– цель; целевой показатель; плановый показатель;
integrated	– всеобъемлющий; объединенный; комплексный; единый;
restoration	– восстановление, реконструкция, реставрация;
pneumatic unit	– пневмоагрегат; пневматическое устройство, пневмоустройство;
vital	– (жизненно) важный, насущный, существенный; необходимый.

1. Answer the following questions:

1) Where does the speciality «Lifting-Transport Machinery and Equipment» corresponds to?
2) What does it provide?
3) What can the specialists of this sphere meet?
4) What do the teachers of this department do to improve their level?
5) What specializations are offered to the students of this department to master?
6) What can students use in their study?
7) What does the department of lifting-transport machines have?
8) What does it allow to make?
9) What does it allow to hold?
10) What will help to keep our industry vital and dynamic in Ukraine?

2. Make your own list of specific terms from the text.
3. Retell the text using the words and word-combinations from the text.

Metal-Cutting Machines and Systems, Tools (МС, ИП)

I study at the Donbass State Engineering Academy. My future speciality deals with mechanical engineering technology, metal-cutting machines and tools. It is one of the universal specialities of an engineer. The engineer of this kind can work at any plant, the production of which is connected with machining operations.

The machining of metals has been forming for centuries. It is known that in the 10^{th} century Russian craftsmen have been already making various types of arms, different domestic appliances etc. We remember Russian inventors and mechanics Nartov A. K., Lomonosov M. V., who invented grinding machine, Polosov I. I., who invented cylinder-boring machine, Kulibin I. P., who invented different types of machines for watch and clock making and other things.

In order to be a good engineer I should learn properly all types of machine-tools and their functions. Besides that we study the following subjects:

- physical and chemical properties of metals, steels and alloys;
- production of ferrous and non-ferrous metals;

- the fundamentals of foundry;
- the fundamentals of metal forging operations;
- the fundamentals of welding;
- the fundamentals of mechanical engineering and metal-cutting machines.

The general term «machine-tool» is applied to various classes of power driven metal-cutting machines employed in the machine shop for the purpose of shaping many commercial products from raw materials, such as plates, sheets, bars and rods or from castings, forgings and other hot-formed and cold-formed parts.

The machine-tool is the principal manufacturing equipment in the machine-shop. It is the only machine which can create other machines. The function of machine-tools such as lathes, planers, milling-machines, drilling-presses is to hold both the work and the cutting-tools and move them relative to each other to obtain the proper cutting action.

The students of our faculty have at their disposal all kinds of laboratories with modern equipment. Many of our students are engaged in research work. Some of them make their research work in English.

I like my future speciality and I'll do my best in order to master it.

Words and word-combinations to be learnt:

craftsman	– ремесленник;
arms	– оружие;
domestic appliances	– предметы домашнего обихода;
inventor	– изобретатель;
foundry	– литейное производство;
metal forging operation	– обработка металла давлением;
welding	– сварочное производство;
plate	– плита, пластина;
sheet	– лист, тонколистовой металл;
casting	– отливка, болванка;
forging	– ковка;
hot-formed	– горячая формовка;
cold-formed	– холодная формовка.

1. Answer the following questions:

1) What does your future speciality deal with?
2) Where can the engineer of this kind work?
3) When was machining of metals known in Russia?
4) What subjects do you study in order to be a qualified specialist in this field?
5) Where can we apply the general term «machine-tool»?
6) What machine can create other machines?
7) What machine tools do you know?

8) What do the students of our faculty have at their disposal?
9) Is the any opportunity to do research work at the Academy?
10) What do you do to master your speciality?

2. Make your own list of specific terms from the text
3. Retell the text using the words and word-combinations from the text

Machine-Building Engineering (Маш)

High-technological machine-building is one of the key directions of the Ukrainian industrial development, and the state gives a new impulse to its development, having this sphere of industry in priority; its index makes up 30% of the total industrial output.

But one-third of employers in Ukraine and in the rest parts of the world experience personnel shortage. Highly qualified engineers and technical specialists are in great demand nowadays. That's why I have chosen the speciality of Machine-Building Engineering at the Donbass State Engineering Academy.

Engineering is a field of human intellectual activity, profession, the task of which is applying achievements of science, technology, use of laws and natural resources for solving specific problems, aims and tasks of humanity. Engineering is realized through application of both scientific knowledge and practical experience with the purpose of creating and first of all designing useful technological and technical processes and units which realize these processes.

Machines occupy a special place among outstanding man-made inventions. It can be said that without machines a human being would have never become the master of nature. And the principle purpose of machine-building engineering is to master the processes of machine manufacturing. It is known that the range of problems in mechanical engineering is very wide. Modern machines, that is machine tools with numerical program control, automobiles, aircrafts etc. are so complicated that it is not always easy to come to know their principle design. But mechanical engineer's task is not only to understand but also to perfect the machine structural arrangement.

Machine-building industry supplies equipment to all industries and effects the level of the development of modern society.

The life of modern society is impossible without machines. They are being improved constantly raising the quality standards of machine parts, which make researchers and engineers invent some new ways of their utilization and manufacture. But it is common knowledge that perfection has no limits and, therefore, human experts will be always required to master not only know-how of any mechanisms usage, but also to make a new one showing even more perfect performance. Thus, the department of Engineering is authorized to train specialists of that kind.

To become highly-skilled specialists we are taught a number of general subjects, such as Mathematics, Physics, Philosophy, Psychology, English, and special subjects: Descriptive Geometry, Welding Processes, Metal-Working Processes, Machine Construction and many others. We also study different kinds of machine-

tools, for example: lathes, grinding machines, drilling machines, boring machines, milling machines and so on.

Our laboratories are equipped with machine-tools with numerical program control, industrial robots, personal computers etc. Students of my speciality acquire the habits of a researcher, publish their first scientific articles, receive patents for inventions. We design, then make pilot samples and operate engineering models.

Our graduates can work in different spheres of human activity (management, designing and research development). The level of their knowledge is high enough to work at almost any enterprises.

Knowledge of fundamental and applied sciences combined with the art of mastering the newest technologies (first of all IT- technologies) is the key to further success at the start of a young specialist.

I'm proud of my future speciality and will do my best to become a good specialist in the field chosen by me. I'm sure that the professionals of engineering will provide the innovations in the nearest future that will keep our industry vital and dynamic in Ukraine.

Words and word-combinations to be learnt:

machine-building engineering	– машиностроение;
key direction	– основное (ключевое) направление;
impulse	– толчок, импульс, стимул;
index	– показатель;
total industrial output	– общий объем промышленного производства;
to experience	– испытывать (знать по опыту);
personnel shortage	– кадровый дефицит;
be in (great) demand	– пользоваться (большим) спросом;
field	– область;
to apply	– применять;
achievement	– достижение, успех;
to solve problems	– решать задачи, проблемы;
aim, purpose	– цель;
humanity	– человечество;
to realize through	– осуществлять; выполнять что-либо при помощи;
designing	– проектирование;
unit	– объект;
to occupy	– занимать;
outstanding	– выдающийся, знаменитый;
man-made invention	– изобретение, созданное руками человека;
to master	– овладевать, усваивать;
machine manufacturing	– производство машин, станков;
mechanical engineering	– машиностроение;

machine tool	– станок;
numerical program control	– числовое программное управление;
complicated	– сложный;
to come to know	– узнать что-либо;
to perfect	– совершенствовать; развивать, улучшать;
structural arrangement	– конструктивное построение, структура;
to supply	– снабжать, поставлять;
equipment	– оборудование;
to improve	– улучшать; совершенствовать;
therefore	– следовательно;
to require	– требовать;
to be authorized to do smth	– иметь право делать что-либо;
descriptive geometry	– начертательная геометрия;
welding processes	– способы (процессы) сварки;
metal-working processes	– способы металлообработки;
machine construction	– машиностроение;
lathe	– токарный станок;
grinding machine	– шлифовальный станок;
drilling machine	– сверлильный станок;
boring machine	– расточный станок;
milling machine	– фрезерный станок;
to acquire	– получать, приобретать; овладевать;
pilot sample	– опытный образец;
to operate	– запускать, управлять;
applied sciences	– прикладные науки.

1. Answer the following questions:

1) Why have you chosen the speciality of Machine-Building Engineering?
2) What is the task of engineering?
3) What is engineering realized through?
4) What is the principle purpose of machine-building engineering and mechanical engineer's task?
5) Why will human experts in the field of engineering be always required?
6) What special subjects are the students taught to become highly-skilled specialists?
7) What are your laboratories equipped with?
8) Where can the graduates of your department work?
9) What is the key to further success at the start of a young specialist?
10) Are you proud of your future profession?

2. Make your own list of specific terms from the text.

3. Retell the text using words and word-combinations from the text.

Department of Integrated Technologies and Equipment

Metal Forming (ОМД)

I am a student of the Donbass State Engineering Academy.

My speciality deals with the metal forging operations. It is well-known that these operations are very important processes in industry.

The shaping of metal by mechanical means in either hot or cold state is called mechanical working. Mechanical working processes include rolling, drawing, extrusion, die forging and press working.

The initial materials for the mechanical working of metal are ingots or rolled billets of various cross sections and weights.

Forging processes are extremely important in the machine-building industry. No machine can be built without use of forgings. In our country from 15 to 20 per cent of all metals produced are subjected to forging and about one-third of all the steel melted in our country is subjected to forging and stamping.

Hammer forging and stamping are particularly widespread in the tractor, automobile, agricultural machinery, ship building, locomotive building and other industries. Not only parts of machines, but also many tools are manufactured by forging.

Depending on the method of the production of forgings forging processes are classified as hammer forging and die forging.

In hammer forging the shape of the metal is changed by pressing it between the dies of a hammer or a press. The flow of the metal is controlled with the aid of various tools.

In die forging the flow of the metal is limited by the die walls and the metal takes its predetermined shape and dimensions.

Die forging processes may be subdivided into open-die forging, hot closed-die forging and cold die forging.

The forging are mainly done on hydraulic and pneumatic hammers and presses. Our country produces hydraulic presses with capacities ranging up 75 000 teas. The Novokramatorsk Engineering Plant is well-known far away from our country for its presses and other machines.

Automatization of forging and stamping operations especially in automobile plants is being widely introduced in our country. Automatic presses find wide application for hot and half-hot upset of various fastening parts and other parts of complex configuration. And this greatly increases the labour productivity.

The students of our faculty have at their disposal all kinds of laboratories with up-to-date equipment. Practically all students of our faculty are engaged in research work. We have a number of students whose works are well-known not only at our Academy.

After graduating from the Academy we shall work as engineers at different plants, factories or research institutes of our country.

Words and word combinations to be learnt:

to deal with	– иметь дело с;
shaping	– придание формы; формирование;
either…or...	– или ... или;
rolling	– прокатка;
drawing	– волочение;
extrusion	– выдавливание;
die forging	– горячая штамповка;
hammer forging	– ковка на молоте;
ingot	– слиток;
billet	– заготовка;
cross section	– поперечное сечение;
forging	– ковка, поковка;
to subject	– подвергать(ся);
open-die forging	– открытая штамповка;
hot closed-die forging	– горячая штамповка в закрытых штампах;
cold die forging	– холодная штамповка;
capacity	– производительность;
tool	– инструмент;
to be engaged in	– быть занятым в;
hot upset	– горячая высадка;
fastening parts	– крепежные детали.

1. Answer the following questions:

1) What does your speciality deal with?
2) What is mechanical working?
3) What do mechanical working processes include?
4) Are forging processes extremely important in the machine-building industry?
5) How are forging processes classified?
6) Are the forgings mainly done on hydraulic and pneumatic hammers and presses?
7) What automatization is being widely introduced in our country?
8) What do automatic presses find wide application for?
9) What do the students of our faculty have at their disposal?
10) Where do the students of our faculty work after graduating from the Academy?

2. Make your own list of specific terms from the text

3. Retell the text using the words and word-combinations from the text

Machines and Technologies of Metal Forming (MTO)

I am a student of the Donbass State Engineering Academy. My speciality deals with machines and technology of metal forming. Metal forming is one of the basic technologies in the modern mechanical engineering, metallurgy and many other industries. Application of processes of metal forming is a necessary condition of reception the products of the difficult form with the minimum admission of machining with a combination of high mechanical properties. The methods of metal forming make both the smallest details of clockworks and huge cases of nuclear reactors.

The education of experts in the field of designing the technological processes and the equipment for processing of metal forming is conducted by the oldest department of the Donbass State Engineering Academy – «Machines and technology of metal forming». Their training is carried out in close cooperation and interaction with the leader of mechanical engineering in Ukraine and in CIS the «Novokramatorsk Machine Engineering Plant». Many graduates of this speciality became the outstanding heads and engineers of modern enterprises both in Ukraine and behind its limits. The postgraduate study and the defence of a candidate's and a doctor's dissertations are organized here.

At the creation of new technologies and equipment and at the modernizations of existing ones the graduates of this speciality widely use computer modeling and skills of research work. There more than 80 new technical processes and machines are developed, more than 300 patents for inventions are received in the department. A part of them is introduced in manufacture. The department has the great practical experience in the research work and in the introduction of shock stands for the test of products on the machine-building enterprises. It developed the press hammers possessing properties of two machines: the press (deformation by pressing) and the hammer (deformation by blow), copras for the deformation of sheet materials, including with heating in cylindrical containers with the elastic environment and in rectangular containers with the sizes 2 × 4 m. There research works on the equipment of excavators and cranes special hinged shock to devices for crushing of monoliths are held.

The students of our faculty have at their disposal all kinds of laboratories with up-to-date equipment. Practically all students of our faculty are engaged in research work. We have a number of students whose works are well-known not only at our Academy.

After graduating from the Academy we shall work as engineers at different plants, factories or research institutes of our country.

Words and word combinations to be learnt:

forming – формовка, отливка;
application – применение, использование, употребление; приложение; применимость;
reception – приём, получение, принятие;

admission – допущение, принятие;
clockwork – часовой механизм;
case – случай; обстоятельство, положение; коробка, ящик; контейнер;
interaction – взаимодействие;
computer modeling – компьютерное моделирование; машинное моделирование; моделирование на ЭВМ;
skill – искусство, мастерство; умение; навык;
shock – удар, толчок; сотрясение; производить сильное впечатление, поражать, потрясать;
stand – стоять; подставка; этажерка; консоль, подпора, стойка;
press – надавливание, нажатие;
hammer – (кузнечный) молот, кувалда; молоток; бить, ударять (молотом, кувалдой);
possess – владеть, иметь, обладать, располагать;
deformation – деформация, деформирование, изменение формы, искажение;
blow – продувка; бессемерование;
copra – копра;
sheet material – листовой материал, тонколистовой материал;
rectangular – прямоугольный;
hinged – шарнирный, соединённый шарнирно, шарнирно сочленённый;
crush – дробление, раздавливание;
monolith – пустотелый массив-гигант с перегородками; монолит; секция, блок бетонирования плотины.

1. Answer the following questions:

1) What does your speciality deal with?
2) What is metal forming?
3) What is the application of processes of metal forming?
4) What do the methods of metal forming make?
5) How is the training of the students on the speciality «Machines and technology of metal forming» carried out?
6) Whom did many graduates of this speciality become?
7) What do the graduates of this speciality widely use?
8) Is a part of inventions received in the department introduced in manufacture?
9) What did the department develop?
10) What research works are held?

2. Make your own list of specific terms from the text.
3. Retell the text using the words and word-combinations from the text.

Technology and the Equipment in the Foundry Production (ЛП)

I am a student of the Donbass State Engineering Academy. My speciality deals with technology and the equipment in the foundry production.

Depending on the requirements and specifics of enterprise our department can carry out individual preparation and retraining, professional development of experts and personnel on the following specializations (directions):

- computer design and modeling of foundry processes, the foundry equipment and equipment with application of modern CAD-CAM-CAE of systems and the applied software;
- automatic's repair and service of complex in the mechanized lines and modern high-efficiency foundry metallurgical and other industrial equipment;
- modern, special methods of melting and extra oven processing of metals and alloys;
- modern ways of manufacturing forms and cores;
- new resource and energy saving technologies of receiving forms from steel, cast iron and non-ferrous metals and alloys;
- modern and perspective methods of thermal forms processing;
- art, jeweler molding and dentist molding and orthopedic artificial limbs.

After graduation of above listed specializations (directions) diplomas and certificates are given to all graduates.

Besides, the graduates of this speciality are ready to solve specific production objectives of enterprises, and also provide the latest scientific developments which can find application and introduction at enterprises.

The students of this speciality study:

- the transformations in the conditions of continuous and isothermal forms of cooling;
- the development of thermal processing steel technology with cooling application in loose graphite;
- the thermodynamic properties of phases and phase equally in component metal systems as the basis of new functional materials;
- the development of technological process towards the improvement of a surface quality iron, at the expense of structures of forming mixes.

Also the department has a possibility for the organization and carrying out seminars, conferences, congresses, round tables on an exchange of experience and the solution of various questions between specialists of the enterprises in the foundry, metallurgical and allied industries.

The speciality «Technology and the Equipment in the Foundry Production» is one of the oldest and leading specialities of the Donbass State Engineering Academy and at the region. Our department is recognized in Donetsk region and Ukraine as one of the best centers scientific and study on foundry production.

Throughout more than 60 years the department carries out the preparation of highly skilled experts in specialties «Foundry production of ferrous and non-ferrous metals and alloys» and «The equipment of foundry production». During the existence of the department more than 5000 young specialists have been

working not only in Ukraine but also abroad. Among graduates there are 30 candidates of science, directors of industrial enterprises, the chief and leading experts of productions.

The department has rather qualified staff including 3 doctors of science, the professor, 8 candidates of science, assistant professors.

The theoretical and practical preparation of the students of this speciality is carried out in educational audiences and laboratories equipped with modern computer equipment, multimedia and other means, modern stands, devices and laboratory installations.

Training of specialists is annually improved taking into account the main tendencies of technological development and the equipment in the field of foundry production with the use of the latest training technologies also in computer technologies.

The staff of lectors closely cooperates with leading scientific Ukrainian centers, the countries of the near and far abroad. Among them the National Technical University of Ukraine «Kiev Polytechnic Institute», the Kiev National University of Ukraine of T. Shevchenko, Institute of Problems of Materials Science and Metaphysics of the National Academy of Sciences of Ukraine, Kiev, the National Research Technological University, Moscow, (Russian Federation), the International Center of Chemistry of Substances, Stuttgart (Germany).

The participation of teachers and students testify of the high scientific capacity of the department in the international and republican conferences, competitions of scientific works and as the scientific projects carried out in close cooperation with leading scientific centers of Ukraine, CIS countries and foreign countries. Repeatedly the scientists and students of the department were awarded by medals, diplomas and diplomas for high achievements.

Words and word combinations to be learnt:

foundry	– литьё (процесс); отливки; литейный цех; литейный завод; литейное производство;
retraining	– переподготовка;
computer design	– конструирование компьютеров (вычислительных машин); проектирование вычислительной машины;
modeling	– исполнение по модели; моделирование; воспроизведение; имитация;
application	– применение, использование, употребление; приложение; применимость;
CAD	– (Computer-Aided Design) система автоматизированного проектирования;
CAM (Computer-Aided	– автоматизированная система управления

Manufacturing)	производством, технологическими процессами;
CAE (Computer-Aided Engineering)	– автоматизированное конструирование;
applied software	– прикладное программное обеспечение;
extra	– добавочный, дополнительный; отдельно, дополнительно;
oven	– печь;
core	– центр; сердцевина; основной, центральный;
perspective	– перспектива, ракурс, проекция; перспективный;
isothermal	– изотермический, изотермичный, равнотемпературный;
cooling	– охлаждение;
mix	– перемешивание, смешивание; = mix up – мешать, смешивать, перемешивать;
metaphysics	– метафизика (философское учение о недоступных опыту принципах бытия); противоположный диалектике; философский метод, рассматривающий явления в их неизменности;
testify	– свидетельствовать, показывать;
capacity	– вместимость, ёмкость; объём;
republican	– республиканский;
CIS (Commonwealth of Independent States)	– СНГ, Содружество Независимых Государств;
achievement	– достижение, успех.

1. Answer the following questions:

1) What does your speciality deal with?
2) What specializations can our department carry out?
3) What is CAD-CAM-CAE?
4) Are diplomas and certificates given to all graduates?
5) What are the graduates of this speciality ready to solve?
6) What do the students of this speciality study?
7) What possibility does the department have?
8) Where is the theoretical and practical preparation of the students of this speciality carried out?
9) What does annually improved training of specialists take into account?
10) What do the participation of teachers and students of the department testify?

2. Make your own list of specific terms from the text.

3. Retell the text using the words and word-combinations from the text.

Engineering Technology (TM)

«…engineers are trained in Kramatorsk, not Kiev!!!», said G. M. Skudar, president of NKMZ, deputy of the Verkhovna Rada of Ukraine, doctor of Economics.

My dream has come true – I'm a student of the Donbass State Engineering Academy and study at the Department of Technology and Production Management. My speciality is Engineering Technology.

Engineering Technology is the most versatile speciality in the field of mechanical engineering. It covers all stages of the process of manufacture of machines, machine units, mechanisms and other products.

The versatility of this speciality means that the graduate can work as:

- production manager including top management;
- design engineer;
- process engineer;
- research engineer;
- expert in the management of various divisions of an engineering company;
- lecturer at an institution of higher education, teacher at a technical school, vocational school.

In today's market environment**,** the experts on engineering technology are capable of solving comprehensively problems of producing competitive products including production using resource-saving technologies and nanotechnologies. Profound training, using modern information technologies, including computer-aided design systems (CADS), special training in economics and mathematical disciplines, as well as training in modern methods and tools for production management is implemented according to the needs of companies, future employers of our graduates.

Studying in the field of «Engineering Technology», you will be able to develop the best processes for the manufacture of unique products using modern information technologies, get special economic and mathematical training in modern methods and tools for production management.

The department implements individual target training of students according to employers' needs:

- information systems and technologies, organization and economics;
- application of progressive mechanical assembly processes;
- technology of computer-aided manufacture, CADS NC;
- process quality control;
- efficient operation of technological systems;
- flexible system and robotized production technologies;
- repair technologies.

The department has its own postgraduate course, courses for master's and doctor's degree. The scientific school of the department is formed on the basis of a powerful laboratory base, new trends in science, and new ideas which are based on leading scientific achievements of recognized scientific departments.

The teaching process and direction of students' creative scientific work are performed by a qualified staff of lecturers of the main department, among them there are doctors of engineering sciences, professors, associate professors, candidates of engineering sciences. Students confirm their high level of training by winning high places in all-Ukrainian competitions in engineering technology.

Studying at the main department of technology and production management, you will always feel attention and kind attitude from the lecturers, find understanding and support, get a good advice. You will form yourself as a man of knowledge and builder of new Ukraine.

Words and word-combinations to be learnt:

Department of Technology and Production Management	– кафедра технологии и управления производством;
engineering technology	– технология машиностроения;
versatile speciality	– универсальная специальность;
to cover	– охватывать;
process engineer	– инженер-технолог;
vocational school	– ПТУ;
to be capable of	– быть способным сделать что-либо;
comprehensively	– в полном объеме, комплексно;
profound training	– углубленная подготовка;
computer-aided design systems (CADS)	– системы автоматизированного проектирования (САПР);
tools for production management	– средства управления производством;
to implement	– осуществлять, обеспечивать;
target training	– целевая подготовка;
application	– применение;
process	– технологический процесс;
mechanical assembly	– механосборочное производство;
NC (numerical control)	– ЧПУ (числовое программное управление);
efficient operation	– рациональная эксплуатация;
main department	– профилирующая кафедра;
engineering sciences	– технические науки;
associate professor	– доцент;
man of knowledge	– специалист.

1. Answer the following questions:

1) What department do you study at?
2) What is your speciality?
3) Why is Engineering Technology the most versatile speciality in the field of mechanical engineering?
4) What does the versatility of this speciality mean for the graduate?

5) How do the experts on engineering technology solve problems of producing competitive products in today's market environment?

6) What kind of training in this field is implemented according to the needs of companies, future employers of our graduates?

7) What can studying in the field of «Engineering Technology» give you?

8) What individual target training of students does the department implement according to employers' needs?

9) Who performs the teaching process and direction of students' creative scientific work at your department?

10) Why have u chosen this speciality?

2. Make your own list of specific terms from the text.

3. Retell the text using words and word-combinations from the text.

Technologies and Welding Equipment (CII)

My speciality is **welding engineer**. Welding may be defined as a group of processes in which metals are joined.

As a welding engineer I have to know welding arts, methods of welding, welding technique and welding equipment. I shall have to design welding constructions and welding equipment.

Welding engineers work in welding laboratories and welderies of machine-building plants, on construction sites, in research institutes. They solve problems of design and development of welding.

Welding is comparatively young branch of science and technique, but from years it gains ground and exerts an increasing influence on industrial production. Today welding has become part and parcel of modern industries. It may well be assumed that millions of men are engaged in welding in all parts of the world. Every day millions of welders help to provide for the needs of mankind on an increasing scale. Many thousands of people take up this occupation, increasing the number of welders every year.

This shows that more than ever, special attention should be given to the training of welders. It is only natural that the quality of the work done by a welder will be higher, the better he is informed of the art of welding in general and the special process of welding in which he is engaged. Welding according to the rules of good workmanship requires a welder to know them thoroughly and observe them strictly.

At present all branches of machine-building production are connected with welding. It is believed that future of technique, rates of technical progress are connected with development of welding technique.

Metal parts are welded while the surfaces to be joined are in plastic or molten state. Fusion of two masses of metal may be brought about by different processes generating heat. Methods of heat generation may be: blacksmith fire, gas,

electric arc, gas plus electric arc, chemical reaction, electrical resistance, electron beam and friction.

There are more than 84 distinct welding processes in use today. They are classified into two main groups:

1. **Fusion welding** processes, i.e. welding without pressure (oxyacetylene welding, arc welding, atomic hydrogen welding, thermal welding, electron beam welding, electro slag welding).
2. **Forge welding** processes i.e. welding under pressure (blacksmith welding, water-gas welding, resistance welding, cold pressure welding, friction welding, ultrasonic welding).

It is very interesting and useful to know all the processes and utilize them in industrial production. I like my speciality and I'll do my best in mastering it.

Words and word-combinations to be learnt:

weld	– сваривать;
welder	– сварщик;
welder	– цех сварки ;
welding	– сварка;
join	– соединять;
joint	– место соединения;
technique	– техника;
design	– проект, дизайн;
construction site	– строительный участок;
compare	– сравнивать;
to gain ground	– укрепляться;
part and parcel	– неотъемлемая часть;
assume	– принимать;
to be engaged	– быть занятым;
observe	– рассматривать;
strictly	– строго;
molten state	– в расплавленном состоянии;
cause	– вызывать;
fusion	– плавка;
blacksmith fire	– кузнечный горн;
arc	– дуга;
resistance	– сопротивление;
beam	– луч;
friction	– трение.

1. Answer the following questions:

1) What is your speciality?
2) What is welding?

3) What has a welding engineer know?
4) Where do welding engineers work?
5) Is welding an old branch of technique?
6) Does it exert any influence on industrial production?
7) What do millions of welders do every day?
8) What special attention should be given to?
9) What does the quality of work done by a welder depend on?
10) Are all the branches of machine-building connected with welding?
11) In what state are the metal parts joined together?
12) In what way do we get fusion of two masses of metal?
13) How many distinct welding processes are there now?
14) Do you know all of them?
15) Into what two main groups are they classified?
16) Do you like your speciality?

2. Make your own list of specific terms from the text.

3. Retell the text using words and word-combinations from the text.

Engineering Mechanics (ИМ)

I am a student of the Donbass State Engineering Academy. My speciality deals with engineering mechanics.

Engineering is a field of human intellectual activity, profession, the task of which is applying achievements of science, technology, use of laws and natural resources for solving specific problems, aims and tasks of humanity. Engineering is realized through application of both scientific knowledge and practical experience with the purpose of creating and first of all designing useful technological and technical processes and units which realize these processes.

Machines occupy a special place among outstanding man-made inventions. It can be said that without machines a human being would have never become the master of nature. And the principle purpose of engineering mechanics is to master the processes of machine manufacturing. It is known that the range of problems in engineering mechanics is very wide. Modern machines, that is machine tools with numerical program control, automobiles, aircrafts etc. are so complicated that it is not always easy to come to know their principle design. But mechanical engineer's task is not only to understand but also to perfect the machine structural arrangement.

Engineering industry supplies equipment to all industries and effects the level of the development of modern society.

The life of modern society is impossible without machines. They are being improved constantly raising the quality standards of machine parts, which make researchers and engineers invent some new ways of their utilization and manufacture.

But it is common knowledge that perfection has no limits and, therefore, human experts will be always required to master not only know-how of any mechanisms usage, but also to make a new one showing even more perfect performance. Thus, the department of Integrated Technologies and Equipment is authorized to train specialists of that kind.

To become highly-skilled specialists we are taught a number of general subjects, such as Mathematics, Physics, Philosophy, Psychology, English, and special subjects: Descriptive Geometry, Welding Processes, Metal-Working Processes, Machine Construction and many others. We also study different kinds of machine-tools, for example: lathes, grinding machines, drilling machines, boring machines, milling machines and so on.

Our laboratories are equipped with machine-tools with numerical program control, industrial robots, personal computers etc. Students of my speciality acquire the habits of a researcher, publish their first scientific articles, receive patents for inventions. We design, then make pilot samples and operate engineering models.

Our graduates can work in different spheres of human activity (management, designing and research development). The level of their knowledge is high enough to work at almost any enterprises.

Knowledge of fundamental and applied sciences combined with the art of mastering the newest technologies (first of all IT- technologies) is the key to further success at the start of a young specialist.

I'm proud of my future speciality and will do my best to become a good specialist in the field chosen by me. I'm sure that the professionals of engineering will provide the innovations in the nearest future that will keep our industry vital and dynamic in Ukraine.

Words and word-combinations to be learnt:

engineering mechanics	– инженерная механика;
field	– область;
to apply	– применять;
achievement	– достижение, успех;
to solve problems	– решать задачи, проблемы;
aim, purpose	– цель;
humanity	– человечество;
to realize through	– осуществлять; выполнять что-либо при помощи;
designing	– проектирование;
unit	– объект;
to occupy	– занимать;
outstanding	– выдающийся, знаменитый;
man-made invention	– изобретение, созданное руками человека;
to master	– овладевать, усваивать;
machine manufacturing	– производство машин, станков;

machine tool – станок;
numerical program control – числовое программное управление;
complicated – сложный;
to come to know – узнать что-либо;
to perfect – совершенствовать; развивать, улучшать;
structural arrangement – конструктивное построение, структура;
to supply – снабжать, поставлять;
equipment – оборудование;
to improve – улучшать; совершенствовать;
therefore – следовательно;
to require – требовать;
to be authorized to do smth – иметь право делать что-либо;
Descriptive Geometry – начертательная геометрия;
Welding Processes – способы (процессы) сварки;
Metal-Working Processes – способы металлообработки;
Machine Construction – машиностроение;
lathe – токарный станок;
grinding machine – шлифовальный станок;
drilling machine – сверлильный станок;
boring machine – расточный станок;
milling machine – фрезерный станок;
to acquire – получать, приобретать; овладевать;
pilot sample – опытный образец;
to operate – запускать, управлять;
applied sciences – прикладные науки.

1. Answer the following questions:

1) Why have you chosen the speciality of Engineering Mechanics?
2) What is the task of engineering?
3) What is engineering realized through?
4) What is the principle purpose of engineering mechanics and mechanical engineer's task?
5) Why will human experts in the field of engineering be always required?
6) What special subjects are the students taught to become highly-skilled specialists?
7) What are your laboratories equipped with?
8) Where can the graduates of your department work?
9) What is the key to further success at the start of a young specialist?
10) Are you proud of your future profession?

2. Make your own list of specific terms from the text.
3. Retell the text using words and word-combinations from the text.

Department of Computer-Aided Manufacturing and Information Technologies

Systems and Methods of Taking Decisions (CM)

I study at the Donbass State Engineering Academy at the department of Systems and Methods of Taking Decisions. My future occupation is a system analyst.

We live in the time of deep social and economic changes.

Modern economy is characterized by the global character of markets /the work of transnational and international companies and corporations/, appearance of new regions of business activity, easiness of capital transfer, increasing the role of high-tech technologies.

Under these changing conditions business firms as well as industrial enterprises become more and more dependent on information technologies, supplying information on new developments and innovations.

Information technologies are used now in engineering, economy, industrial management, communication /including the international system «Internet»/, planning, simulation of production and economic processes .

Information technologies or computer technologies imply wide application of computer sciences, creation of data base on new technologies and methods of production, use by specialists of new generation software which allows to make decisions in different spheres of economy and production.

Specialists who deal with computer technologies are in great demand in Ukraine and Donbass.

Taking into account the demands of our society, the Donbass State Engineering Academy provides educations in systems and methods of taking decisions on the basis of computer sciences and information technologies for the purpose of efficient management in machine-building production.

The course of education includes the most up-to-date subjects, such as «Macro-« and «Microeconomic simulation», «Econometry», »The theory of complex economic system», »Systems of processing economic information» and some others.

The Academy has highly qualified professors and teachers; a powerful material and technical base : numerous computer classes with computers of the 5^{th} generation, profession- oriented class-rooms , a library with a rich fund of books on Economics of production processes.

All these guarantee high quality education and training for students.

The Donbass State Engineering Academy has scientific and production ties with all machine-building enterprises in the Donbass region, as well as research centers of Donbass, Ukraine, Russia, Byelorussia, the USA.

The graduates can work as:

- heads and specialists of planning and economic departments in industrial enterprises, different organizations and firms;

- heads and specialists of information departments;
- heads and specialists in the departments of automated systems of production management;
- researchers in the field of strategic control of economic systems;
- consultants in the field of economic analysis and prognosis /prediction/

The graduates of the Donbass State Engineering Academy are able to solve production problems on the base of the strategic goals of infrastructural developments of Ukraine and the Donbass region.

Words and word combinations to be learnt:

systems and methods of taking decisions	– системы и методы принятия решений;
global character	– глобальный характер;
capital transfer	– перевод (трансфер) капитала;
information technology	– информационная технология;
innovation	– инновация;
simulation	– моделирование;
to imply	– подразумевать, означать;
data base	– база данных;
software	– программное обеспечение;
efficient management	– эффективное руководство;
machine-building enterprises	– машиностроительные предприятия;
head	– *здесь:* руководитель;
field of economic analysis and prognosis	– область экономического анализа и прогнозирования;
infrastructural development	– развитие инфраструктуры.

1. Answer the following questions:

1) What is modern economy characterized by?
2) What are business firms and industrial enterprises depended on?
3) What is the role of information technologies?
4) In what fields are information technologies used?
5) What do information technologies imply?
6) What speciality is taught on the base of information technologies in the Donbass State Engineering Academy?
7) What other subjects are taught in the course of «Systems and methods of taking decisions»?
8) What material and technical base helps to provide education in «Systems and methods of taking decisions»?
9) Where can graduates work?

2. Translate into Russian:

Deep social and economic changes; global character; transnational and international companies; capital transfer; high-tech technologies; innovation; industrial management; simulation of production and economic processes; wide application of computer sciences; data base; new generation software; to be in great demand; for the purpose; «Systems of Processing Economic Information»; numerous; head of planning department; automated systems; strategic goals of infrastructural development.

Computer-Aided Manufacturing (АПП)

I study at the Donbass State Engineering Academy. Our Academy trains different kinds of engineers for various branches of industry: metallurgical engineers, mechanical engineers, specialists in the field of computer numerical control, specialists in the fields of Finance and Economics and some others.

My speciality is **Computer-aided Manufacturing**. The three stages of training engineers in this branch are the following: Bachelor, Specialist and Master.

Computer industry comprises almost all spheres of professional life. Computer control of automated production opens new horizons for the cheap and quality production of goods.

Computer engineering is a general field. It deals with both electric and electronic industries.

Electronic engineering deals with the research, design, integration, and application of circuits and devices used in the transmission and processing of information.

Future specialists are trained on the Computer-aided Manufacturing Chair on 29 subjects such as:

- special computer studying (10 subjects);
- electrotechnics, electronics and electrical driving;
- mechanics and hydraulics;
- theoretical questions of automatic control; mathematical modeling; identification; diagnostics; reliability; data ware and some others. These and other subjects provide fundamental background and professionalism needed while projecting and work in the field of automated control systems.

The Computer-aided manufacturing Chair was organized in 1973 and now they train specialists in the fields of automatization of computer – integral technologies.

At the disposal of teachers and students there are 8 laboratories with up–to–date equipment where they carry out their research work. The chair has a staff of very qualified doctors, candidates of technical sciences. Our chair has the links with some departments of the Russian Academy of Sciences, some other research institutions and some enterprises of our country.

The students wishing to continue their studying and their research work have every opportunity to go on with their studies at the post–graduate courses.

The graduates may take such vacancies as:

- foreman of complex automatization of production;
- foreman of repairing of control automated system;
- engineer of computer equipment;
- engineer – electromechanic;
- engineer – designer of computer systems controlling production;
- software engineer;
- engineer – electrician and other qualified specialists in this field.

I hope to take a proper place in the ranks of these specialists.

Words and word-combinations to be learnt:

computer numerical control	– числовое компьютерное управление;
bachelor	– бакалавр;
master	– магистр;
application	– применение ;
circuits	– схемы;
hydraulics	– гидравлика;
date ware	– информационное обеспечение;
computer-integral technologies	– компьютерные интегрированные;
at the disposal	– технологии;
up-to-date	– современный;
post-graduate	– аспирант;
foreman	– мастер.

1. Answer the following questions:

1) What kinds of engineers does the Academy train?
2) What is your speciality?
3) What are the three stages of training engineers in the branch of Automatization of Production processes?
4) What horizons does computer control of automated production open?
5) Does computer engineering deal with electric and electronic industries?
6) What is used in the transmission and processing of information?
7) How many subjects are taught at the Chair?
8) When was the Automatization of Production Processes (Computer-aided Manufacturing) Chair organized?
9) What is the material and educational base of the Chair?
10) Where can the graduates find job and what vacancies are at their disposal?
11) What is your attitude to this speciality?

2. Translate into Russian:

Various branches of industry; computer numerical control, Finance and Economics, Automatization of Production Processes, Bachelor, Master, to comprise, quality production, research, application of circuits, transmission, electrical driv-

ing, hydraulics, mathematical modeling, reliability, data ware, fundamental background, computer-integral technologies, at the disposal, up-to-date equipment, research institutions, post-graduate courses, foreman, repairing, software engineer, a proper place in the ranks.

3. Finish the following sentences; translate them into Russian:

Different specialists are trained at the Donbass State Engineering Academy: metallurgical engineers, mechanical engineers, … 2. The three stages of training engineers in this branch are the following: Bachelor, … 3. Computer engineering deals with both electric and electronic … 4. Electronic engineering deals with the …, design, integration and application of circuits and devices used in the transmission and … 5. future specialists are trained on the … Chair on 29 … 6. The Automatization of Production Processes was organized in … and now they train specialists in the fields of … 7. The Automatization of Production Processes has a staff of very qualified doctors, candidates of technical … 8. The students wishing to continue their studying and their research work have every opportunity to go on with their studies at … 9. The graduates may take such vacancies as: foreman of complex Automatization of production, foreman of repairing of control automated systems, … 10. I hope to take a proper place in the ranks … .

4. Make up dialogues, discussing your future speciality.

Information Technology of Planning (ИТ)

We are living in the age of hi-tech, advanced computer technologies, automation of information processes and all other spheres of industry. It's impossible to imagine our life without computer technologies nowadays.

I was very good at Mathematics and Computer Science at school. So I made up my mind to enter the department of «Computer Information Technology» at the Donbass State Engineering Academy and to become a specialist in the field of programming (information technologies). My speciality is information technology of planning (ITP). Now I would like to tell u about it.

Education in the specialty of ITP is realized to form graduate skills of formulating and solving problems of information in different spheres of human activity, development of corporate computer systems, decision support systems, and the creation of CAD in mechanical engineering.

ITP students learn modern software products during the educational process:

- languages and programming tools Assembler, Pascal, Delphi, enter the department of «Computer Information Technology Visual C + +, HTML, and XML, PHP, Perl, C #, Java, WEB-servers and CMS for Internet development;
- CAD Solid Works, Cosmos Works, Search, Delcam;

- operating systems Windows and Linux, an integrated suite of Microsoft Office.

The curriculum includes more than 40 specialty disciplines, including: Computer Graphics, Operating Systems, Object-Oriented Programming, Mathematical Methods of Operations Research, the theory of algorithms, Electrical Engineering and Electronics, the modern theory of management, Management of IT Projects, Information Security Technology, Design of Information Systems, Data Mining, the theory of decision-making, Methods and artificial intelligence systems, Networks, the organization of databases and knowledge, Technology of creating software, Technology of computer-aided design, Web-technology and design, etc.

Preparation is conducted on full-time and correspondence forms, students of the third year of ITP can get an extra education on the speciality «Economy of Enterprise» and therefore to have a second diploma simultaneously with the main one.

The department has postgraduate course, courses for master's degree. Students conduct their scientific work in the student scientific society, learn to use new software products, to develop applications for Internet, mobile communications, build and operate LAN, use the telecommunications network for distance learning.

The educational process is held in modern computer classrooms and laboratories of microprocessor technology using specialized equipment and stands.

On the basis of JSC «NKMZ» and «EMSS» branches of the Department are created for students' technological and undergraduate engineering practice.

The analysis of the labor market has shown a great demand for professionals in the field of computer technologies. It is connected with the development of information management services, computer-aided design and management. And this is:

- profitable employment;
- career prospects;
- the opportunity to create one's own business, get a job abroad;
- conducting research in the field of information technology.

After mastering my speciality, I can get an interesting and challenging work.

The use of information technology increases the quality of the development of modern society, automation and business management, economics and finance. Therefore, graduates of the speciality «Information technology of planning» (ITP) have a wide selection of jobs in enterprises of all forms of ownership.

Bachelors can perform the maintenance of computer systems, organizations and institutions, develop software and hardware systems, work in the following positions: technician-programmer in research institutes, enterprises and organizations, administrators of software systems and computer networks.

Specialists can work as managers and professionals of core business, services of information management, computer-aided design and management in organizations; software developers of database and systems; design engineers of computer-aided design and computer systems, applications or systems engineers-programmers, engineers of software development for computers, the directors of

their own companies to develop software for both domestic and foreign clients (6 firms are founded in Kramatorsk).

Masters can work as managers, engineers-researchers, scientists, systems analysts in the field of computing, programming, research and development of new computer-aided design of objects and processes, as teachers in colleges and universities.

The graduates of my speciality make a new modern information society.

Words and word-combinations to be learnt:

to make up one's mind	– решить (что-либо сделать);
automation of information processes	– автоматизация информационных работ;
information technology of planning	– информационные технологии проектирования;
business management	– управление предприятиями;
development	– разработка;
decision support systems	– системы поддержки принятия решений;
CAD (computer-aided design)	– САПР (система автоматизированного проектирования);
undergraduate engineering practice	– преддипломная практика;
correspondence form	– заочная форма обучения;
to conduct	– проводить;
get an extra education	– получить дополнительное образование;
LAN (local area network)	– ЛВС (локальная вычислительная сеть);
distance learning	– дистанционное обучение;
profitable employment	– выгодное трудоустройство;
to get a job abroad	– получить работу за рубежом;
in the field of	– в области;
electrical engineering	– электротехника;
information security technology	– технологии защиты информации;
data mining	– интеллектуальный анализ данных;
core business	– профильное производство;
software developer	– разработчик программного обеспечения.

1. Answer the following questions:

1) Why did u decide to enter the department of «Computer Information Technology»?

2) What is your speciality?

3) What skills do graduates of your speciality get?

4) What modern software products do ITP students learn during the educational process?

5) What main disciplines of this course does the curriculum include?

6) What activities are the students of master's degree involved in?

7) Why is there a great demand for professionals in the field of computer technologies?

8) What work will bachelors of your speciality be able to perform?

9) Are there a lot of opportunities in work for specialists of your speciality?

10) What can masters work as in the field you have chosen?

2. Make your own list of specific terms from the text.

3. Retell the text using words and word-combinations from the text.

Electromechanical Automation Systems and the Electric Drive (ЭСА)

I'm very happy to be a student of the Donbass State Engineering Academy. Let me tell you about my speciality and occupation-to-be. I've been always good at Physics and Mathematics and wanted to become an engineer. So my speciality is «Electromechanical Automation Systems and the Electric Drive». After graduating the Academy I'll be a highly qualified electrician engineer, a technician who can solve the problems of automation in production processes.

Well, let's clear up what the electric drive is.

The modern electric drive represents the complex electromechanical and cybernetic system including electric motors, power supply systems, automatic control systems.

The electric drive surrounds the modern person from the electrified children's toys to the hi-tech flying machines and space stations where the most kinds of movements are performed with its help.

Even in our apartment we are surrounded by the electrified devices (the refrigerator, the washing machine, the computer, the microwave oven, the shaver, the tape recorder).

Prospects of development of the electric drive are defined by the necessity of automation in production process at any enterprise.

After graduating the department of «Electromechanical Automation Systems» we'll be able:

• to program on the modern programming languages;

•to design the computer-aided manufacturing systems with application of computer technologies;

• to model new progressive systems of automation and to introduce them into manufacturing;

• to develop the microprocessor control systems of various kinds of drives;

•to make installation, adjustment, qualified maintenance and diagnostics of the electric equipment of drives;

• to develop electronic and microprocessor-based systems with the use of software tools;

• to carry out theoretical and experimental investigations in the systems development to improve their processing characteristics and their operating costs reduction.

Graduates can work:

• in companies dealing with computer-aided manufacturing ;

• as programmers of different levels;

• as power supply and energy saving personnel;

• as service engineers;

• as a lecturer at an institution of higher education, teacher at a technical school;

• as design engineers.

The department trains bachelors, specialists and masters, gives training in general technical and special disciplines: programming, theoretical foundations of electrical engineering, electronics and the microprocessor technics, electromechanics, the electric machineries and devices, the theory of automatic control of electric drives, discrete and neural control systems of electric drives, designing of electromechanical systems, etc.

Training carries out in six specialized laboratories and the computer class, equipped with the modern domestic and foreign equipment (of such firms as Siemens, Balluff, ABB, Moeller, Texas Instruments). There is an electrodiagnostics laboratory at the department.

The department closely cooperates with such higher schools, as: National Technical University of Ukraine «KPI», Kharkov National Technical University «HPI», Dneprodzerzhinsk State Technical University, Donetsk National Technical University, National Mining University (Dnepropetrovsk).

I’m proud of my future speciality and will do my best to become a good specialist in the field chosen by me. I’m sure that the professionals of engineering will provide the innovations in the nearest future that will keep our industry vital and dynamic in Ukraine.

Words and word-combinations to be learnt:

occupation-to-be	– будущая профессия;
electromechanical automation systems	– электромеханические системы автоматизации;
electric drive	– электропривод;
supply systems	– силовые системы питания;
automatic control systems	– системы автоматического регулирования и управления;
prospects of development	– перспективы развития;
to define	– определять;

electrician engineer	– инженер-электромеханик;
to solve the problems	– решать задачи;
to design	– проектировать;
computer-aided manufacturing systems	– системы автоматизации производственных процессов;
to introduce	– *здесь*: внедрять;
manufacturing	– производство;
to make installation	– производить монтаж;
software tools	– программные средства;
costs reduction	– снижение затрат;
design engineer	– конструктор;
electrical engineering	– электротехника;
neural control systems	– нейронные системы управления;
vital	– (жизненно) необходимый, существенный;
dynamic	– динамичный, функциональный.

1. Answer the following questions:

1) Why have you chosen the speciality of «Electromechanical Automation Systems and the Electric Drive»?

2) What is your occupation-to-be?

3) Where can we find the application of the electric drive in our everyday life?

4) What knowledge and skills will u get after graduating the department of «Electromechanical Automation Systems»?

5) Are there a lot of opportunities in work for specialists of your speciality?

6) What main disciplines of this course does the curriculum include?

7) What higher schools does the department closely cooperate with?

8) Are there any specialized laboratories at the disposal of the department to carry out research work?

9) Why does our industry need highly qualified specialists in your field?

10) Are you proud of your future speciality?

2. Make your own list of specific terms from the text.

3. Retell the text using words and word-combinations from the text.

Навчальне видання

АНГЛІЙСЬКА МОВА

Методичні вказівки щодо розмовних тем

для самостійної роботи студентів 1–3-го курсів і магістрів усіх спеціальностей ДДМА

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