Лекція Практичне заняття №1

Тема лекції: «Вступ. Англійська мова – мова міжнародного спілкування»

План лекції

1. Who speaks the best English?
2. How does the English language benefit you?
   2.1. Professional growth
   2.2. International networking
   2.3. Study abroad
   2.4. Expat life

Література:

1. https://www.expat.com/en/expat-mag/840-the-english-language-an-international-communication-tool.html
2.https://www.researchgate.net/publication/311068862_The_English_Language_for_Global_Communication_Perspective_of_Youth
3. https://ru.scribd.com/document/150511925/English-as-a-Language-of-Global-Communication
4. https://studopedia.info/2-111397.html

Зміст лекції

1. Who speaks the best English?

EF has ranked 72 countries from Europe, Asia, Latin America, and the Middle East and North Africa according to their level of English language proficiency. Nine out of the top ten countries that master English language are in Europe (Netherlands, Denmark, Sweden, Norway, Finland, Luxembourg, Austria, Germany, Poland) showing that the continent's education system totally promotes multilingualism and cultural exchange.

Asian countries, such as Cambodia, China, Indonesia, Japan, South Korea, and Vietnam where manufacturing, trade, and international business is crucial for their presence in the global picture, value English language, but more as an academic and employment tool. For example, in South Korea — a country that seriously invests in promoting English as a foreign language — everyday life activities and interactions in English are almost non-existent, and if any, are characterised by shyness and reservation.

Latin America has its own lingua franca, and of course, this is no other than Spanish. Thus it comes as no surprise that countries, such as Mexico, Brazil, Colombia, Guatemala, Venezuela, and Chile are ranking low or very low on the EP Index. Argentina is the only Latin American country that thanks to the government's efforts does well in English language education.

The MENA region is the least proficient in English in the world, even though there's a high mobility of U.A.E. and Arab students to English-speaking universities in the UK and the USA. Indifference towards the English language is partly explained through the labour

market system in the region — a vast sustainable public sector and a weak and inefficient private sector. The MENA region's big young population competes for a restricted number of positions, and soon motivation for higher education (or any other type of learning) is seen as an effort in vain.

2. How does the English language benefit you?

We cannot deny that the English language brings us closer to distant communities, and opens doors to education, work, and life opportunities that we wouldn't be able to reach otherwise. Here's how English can bring real changes to our personal and working lives.

2.1. Professional growth: A resume with one or more foreign languages is more likely to attract the attention of employers, and to straight away bring you further up on the candidates' list. Companies are becoming international, remote or office staff is sharing a common goal, but not necessarily a common language and culture, and trips abroad for business, as well as relocation to another country, are quite often essential.

2.2. International networking: English is the most popular language on the Internet and the number one language for electronic communication. If you are therefore keen on keeping up with the happenings in the international community, it's essential to speak and understand English. But we aren't only building virtual relationships — a look around you will tell that our everyday environments are multicultural and there are people out there who are waiting to establish long lasting relationships with us (as long as we find a common language to communicate in).

2.3. Study abroad: The UK, US, Canada, and Australia remain the top destinations for first class education, offering highly valued university degrees. If you want to be considered for such education opportunities and to enter the employment market with a world recognised certificate, then excelling in your English should become a priority.

2.4. Expat life: The English language has eased movement around the world offering a communication safety net. Whether you want to move abroad for work, education, or a personal project, English will allow you to build up your new life and integrate with the society that hosts you. From asking for directions to finding accommodation, and making friends, life abroad is much more comfortable when you are understood.

Лекція №2

Тема лекції: «Застосування іноземної мови у професійній діяльності»

План лекції

1. The introduction
2. Efficiency in business transactions
3. Bridging cultural differences
4. Communicating your point faster
5. Convince people with your fluency
6. How can English help me professionally?

Література:

1. https://www.gradjobs.co.uk/news-and-advice/why-fluent-english-is-important-for-your-future-career
2. https://www.slideshare.net/InnaSalamova/english-language-in-my-future-profession
3. https://www.roseofyork.com/is-english-important-for-your-career/
4. https://multiurok.ru/files/english-in-my-future-profession-3.html

Зміст лекції

1. The introduction

Communication is a paramount component of human relations. Understanding what the other person wants or needs through mutual language is important. Globalisation has in the recent past been very dominant to the point where you can almost work anywhere in the world, and has had a huge rise in multinational corporations. Expansion of these businesses to different parts of the world has been enhanced by the use of English as the de facto language of business. It has come in handy in ensuring that there is proper understanding within the business world. The cohesiveness brought by the use of the English language, as the language of business, has been remarkable, to be understated.

2. Efficiency in business transactions

Adoption of English as the universal business language by the foreign companies has proved very effective in accessing the global trade and commerce. You will require fluent English and credible skills in English to ensure efficiency in business transactions. You are required to communicate with other business people through emails and reading through contracts, most of which will be written in English, you have to be fluent in English to be able to understand what the contract says, failure to which you will miss out in conceptualising very pertinent clauses of the contract that will affect you as a business owner.

3. Bridging cultural differences

Penetration of international market could not be possible without the use of fluent English or another language when working abroad. In order to effectively bridge this gap of cultural disparity, you must make yourself completely understandable in English. Cultural differences have been effectively bridged in the business world, as there is a common ground or language. It has become an effective tool that has very much helped deal with political differences in the volatile parts of the world. The use of fluent English will allow you to have collective understanding between business people, such that they will be able to solve their particular differences.

4. Communicating your point faster

Do you have or planning to have a business that you would like to expand to the international market? Then you have to learn good English concepts to be able to communicate your point faster. English language has been categorised as the default mode of communication in the current business world. The importance of the language has been invaluable to the business world. Fluent English has been the focal point in penetrating through the international local markets. For example, the multinational companies such as General Motors have effectively penetrated the African market due to the use of English.

5. Convince people with your fluency

Do you require entering the online market and selling your products through the online platform? Then first, you have to have fluent English to succeed in this area. You will need to make people understand you clearly by ensuring that you use English in delivering your point of view.

The current digital age has seen a lot of transactions being undertaken online through the Internet. There is a massive following of the Internet. It has been a component of the current trading system and modes of doing business. The use of fluent English has been the main component in the use of the Internet. There is a huge number of Internet users in the world. These users have been able to interact effectively due to the use of English as the main kind of communication.

Online business has been effectively conducted by the use of English. Take an example of an online market such as eBay; it has enabled the selling of products throughout the world. How this has been possible is mainly due to the use of English as the main mode of communication. It is a form of global culture where the new market, the Internet, has a great deal of people using it. Many companies have to reach out to this huge number of users through the use of Internet advertisements. How they have communicated and reached out in these advertisements has been through the use of English. It simply shows just how much fluent English is imperative to the business world.

6. How can English help me professionally?

- Many countries around the world speak English. Additionally, it is often the nominated language to use in many industries such as aviation. Therefore, learning English gives you the skills necessary to advance a career in an industry where English is a required language.
- If you work in an international industry, having English language skills could benefit you. You could have the opportunity to travel or even live in different countries. It is important in many different industries such as retail, sales, administration, marketing, transportation, tourism, banking, law and many more.
- You could get ahead of other candidates when you are applying for a new job or a promotion by being proficient in English. Speaking English opens up a wide range of new opportunities both in your career and in your personal life.
- Showing you've learned a foreign language like English will show employers that you're dedicated and have a work/study ethic. It also shows you are a dedicated and hard-working person. Employers look for these skills.
- Lastly, when you learn English at a **London language school** you get many chances to put your new skills into practice. You can talk with native speakers, and, perhaps you could even practise in your workplace environment.

Лекція №3

Тема лекції: «Вибір професії. Кар'єра»

План лекції

1. Steps of choosing a career
   1.1. Assess Yourself
1.2. Make a List of Occupations to Explore
   1.3.Explore the Occupations on Your List
1.4. Create a "Short List"
1.5. Conduct Informational Interviews
1.6. Make Your Career Choice
1.7. Identify Your Goals
1.8. Write a Career Action Plan
2. Welding keeps our world together
3. There's a bright future in welding

Література:

1. https://www.careersinwelding.com/why-welding/
2. https://www.thebalancecareers.com/steps-to-choosing-career-525506
3. https://studopedia.org/13-117554.html
4. http://www.litra.ru/composition/get/coid/00384821220701006880/woid/00046901184773070655/

Зміст лекції

1. Steps of choosing a career

1.1. Assess Yourself

Before you can choose the right career, you must learn about yourself. Your values, interests, soft skills, and aptitudes, in combination with your personality type, make some occupations a good fit for you and others completely inappropriate.

Use self-assessment tools, often called career tests, to gather information about your traits and, subsequently generate a list of occupations that are a good fit based on them. Some people choose to work with a career counselor or other career development professionals who can help them navigate this process.

1.2. Make a List of Occupations to Explore

You probably have multiple lists of occupations in front of you at this point—one generated by each of the self-assessment tools you used. To keep yourself organized, you should combine them into one master list.

First, look for careers that appear on multiple lists and copy them onto a blank page. Title it "Occupations to Explore." Your self-assessment indicated they are a good fit for you based on several of your traits, so definitely consider them.

Next, find any occupations on your lists that appeal to you. They may be careers you know a bit about and want to explore further. Also, include professions about which you don't know much. You might learn something unexpected. Add those to your master list.

1.3.Explore the Occupations on Your List

Now get some basic information about each of the occupations on your list. You will be thrilled you managed to narrow your list down to only 10 to 20 options!

Find job descriptions and educational, training and licensing requirements in published sources. Learn about advancement opportunities. Use government-produced labor market information to get data about earnings and job outlook.

1.4. Create a "Short List"

At this point, start to narrow down your list even more. Based on what you learned from your research so far, begin eliminating the careers you don't want to pursue any further. You should end up with fewer than two to five occupations on your "short list."

If your reasons for finding a career unacceptable are non-negotiable, cross it off your list. Remove everything with duties that don't appeal to you. Eliminate careers that have weak job outlooks. Get rid of any occupation if you are unable to or unwilling to fulfill the educational or other requirements, or if you lack some of the soft skills necessary to succeed in it.

1.5. Conduct Informational Interviews

When you have only a few occupations left on your list, start doing more in-depth research. Arrange to meet with people who work in the occupations in which you are interested. They can provide firsthand knowledge about the careers on your short list. Access your network, including LinkedIn, to find people with whom to have these informational interviews.

1.6. Make Your Career Choice

Finally, after doing all your research, you are probably ready to make your choice. Pick the occupation that you think will bring you the most satisfaction based on all the information you have gathered. Realize that you are allowed do-overs if you change your mind about your choice at any point in your life. Many people change their careers at least a few times.

1.7. Identify Your Goals

Once you make a decision, identify your long- and short-term goals. Doing this will allow you to eventually work in your chosen field. Long-term goals typically take about three to five years to reach, while you can usually fulfill a short-term goal in six months to three years.

Let the research you did about required education and training be your guide. If you don't have all the details, do some more research. Once you have all the information you need, set your goals. An example of a long-term goal would be completing your education and training. Short-term goals include applying to college, apprenticeships, or other training programs, and doing internships.

1.8. Write a Career Action Plan

Put together a career action plan, a written document that lays out all the steps you will have to take to reach your goals. Think of it as a roadmap that will take you from point A to B, and then to C and D. Write down all your short- and long-term goals and the steps you will have to take to reach each one. Include any anticipated barriers that could get in the way of achieving your goals and the ways you can overcome them.

2. Welding keeps our world together

If it's made of metal – it can be welded. From cars to planes and bridges to buildings, welding keeps our economy moving. It's the backbone of our world.

While we don't always notice every weld under the hood or behind the walls, welding plays an integral role in keeping people safe and advancing our quality of life. Every industry depends on it.

3. There's a bright future in welding

If you like to work with your hands and are seeking a unique sense of community, then welding may be for you. It's both an art and a science. From basic fabrication to advanced robotics, modern welders blend trade skills with technology to work smarter, not just harder.

The skills you'll learn as a welder are also portable and recession-resistant. There are countless opportunities in a variety of industries that lead to lucrative and rewarding careers.

Because welding is an essential component in so many industries and art forms, the demand for welders is at an all-time high. This means that the choice to specialize is yours.

The skills you develop as a welder can lead you down several paths. Are you ready to take your first step?

Why you should become a welder

Start your career in an industry that's on the move

Training & Certification

Welding lets you get trained and start earning quickly. You can break into the industry through education, apprenticeships or on-the-job training virtually everywhere. There are also plenty of scholarship opportunities that can help.

Get ahead without the debt

A college degree isn't required for a career in welding. In fact, some facets of the welding industry prefer you start your career as an apprentice or through on-the-job training programs.

High earning potential

Demand for qualified welders is at an all-time high. This means that many careers in welding come with excellent compensation and benefits packages. In addition, opportunities for advancement abound.

Get paid to see the world

Many careers in welding enable you to travel for work giving you exposure to new people and cities. If travel isn't your thing, there are plenty of opportunities close to home as well. The choice is yours.

Unlimited opportunities

The skills you learn as a welder offer seemingly unlimited possibilities for further specialization. From engineering to pipe fitting and everywhere in between, there are careers available built for your lifestyle.

Welding is in demand

For every four Baby Boomers leaving the skilled trades only one Millennial enters. This means that the demand for hard-working, qualified welders is growing daily.

Лекція Практичне заняття №4

Тема лекції: «Розповідь про професію. Лексика для складання твору про обрану професію»

План лекції

1. Загальні правила
2. Вирази для опису професії
3. Переваги професії
4. Приклад тексту

Література:

1.http://poradu24.com/english/rozpovid-pro-profesi%D1%97-anglijskoyu-leksika-dlya-skladannya-tvoru.html
2. https://greenforest.com.ua/journal/read/top-10-profession-that-need-english
3. http://gvpl.at.ua/news/profesija_elektrogazozvarnik_moja_gordist/2012-03-15-281
4. https://www.youtube.com/watch?v=acB9nXa5Vpg

Зміст лекції

1. Загальні правила

Розповідь про професії англійською мовою повинен не тільки включати опис ваших уподобань, але і містити кілька пропозицій про те, чому ви обрали дану спеціальність, що вам в ній подобається, які переваги ви бачите зараз. Отже, давайте розглянемо, як може будуватися таку розповідь.

До речі, професія по-англійськи буде profession, а рід занять або вид діяльності – occupation. Слова work і job позначають поняття «робота». Слово career більше це асоціюється з успіхом у діяльності, кар'єрою.

Зверніть увагу на наступні нюанси вживання.

- По-російськи ми говоримо, він працює продавцем, вона працює лікарем. Англійською нам треба сказати – he works as a seller, she works as a doctor.

- Щоб сказати «з професії» необхідно додати by – i'm a lawyer by profession, she is an accountant by profession.

Професії англійською

2. Вирази для опису професії

У кожній історії повинна бути вступна частина, якщо ви ще вчитеся, то, починаючи писати твір англійською про професію, можна вжити наступні вирази:

- To become – ставати.
- I'm going/want to – я збираюся/хочу.
- To make up someone's mind – визначатися, вирішувати.
- To choose a profession – вибирати професію.
- To make a choice – зробити вибір.
- To be interested in – бути зацікавленим ст.

Давайте подивимося, як ці вирази можуть виглядати в пропозиціях.

I want to become a teacher. – Я хочу стати вчителем.

I'm going to become a doctor. – Я збираюся стати лікарем.

Зверніть увагу: використовуючи going to, висловлюєте більш впевнене намір у своїх планах і діях.

I'm interested in travellingand I want to become a tour guide. – Мене цікавлять подорожі і я хочу стати гідом.

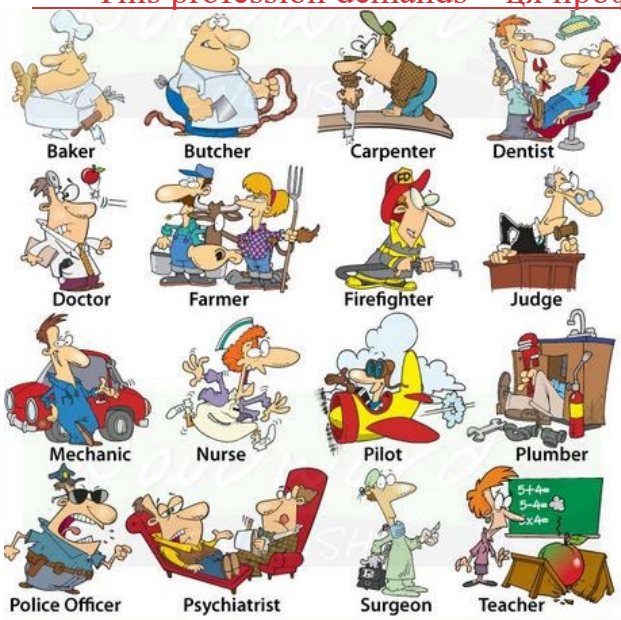
I want to choose my profession by myself. – Я хочу вибрати мою майбутню професію сам.

It is difficult to make a choice now, but I try. – Зараз важко зробити вибір, але я намагаюся.

3. Переваги професії

Тепер давайте спробуємо розповісти про те, чим приваблює той чи інший вид діяльності. Тема професії на англійській мові може включати наступні слова та словосполучення.

- Interesting – цікавий.
- Exciting – захоплюючий.
- Well-paid – добре оплачувана.
- Pay, salary – зарплата.
- Prestigious – престижний.
- It is according to my preferences/hobby – відповідає моїм уподобанням/хобі.
- It is important nowadays – є важливою в наші дні.
- Place of work – місце роботи.
- To help people – допомагати людям.
- To travel – подорожувати.
- To have a creative work – мати творчу роботу.
- To imply – розуміти.
- To devote – присвячувати.
- To succeed/to be successful – процвітати/бути успішним.
- This profession demands – ця професія вимагає.



Occupations

Давайте складемо кілька прикладів з перерахованими словами і фразами.

I like to travel and that's why I want to become a tour guide. — Мені подобається подорожувати і тому я хочу стати гідом.

I want to help people and that's why I want to work as a doctor. — Мені подобається допомагати людям і тому я хочу працювати лікарем.

I'm going to have a creative work. I will become an artist or a designer. — У мене буде творча робота. Я буду художником або дизайнером.

I want my work to be well-paid and interesting. — Я хочу, щоб моя робота була добре оплачуваної та цікавою.

I want to have a prestigious profession — I will become a lawyer. — Я хочу мати престижну професію — я стану юристом.

4. Приклад тексту

Подивіться приклад тексту майбутньої роботи з використанням перерахованих вище виразів.

English is my favorite subject. I want to become an English teacher. I'm going to devote my time to work with children. I made this choice long time ago. I'm interested in teaching. I think that my future profession is one of the most important nowadays. I want to help children not only to learn English language but also to become kind and clever people. This job demands to be a very well-educated. Also I think that teaching implies great responsibility. I want to succeed in my future profession.

Мій улюблений предмет – англійська. Я хочу стати вчителем англійської мови. Я збираюся присвятити свій час роботі з дітьми. Я зробила цей вибір давно. Мені подобається викладати. Я думаю, що моя майбутня професія є однією з найважливіших на сьогоднішній день. Я хочу допомагати дітям не тільки вчити англійську мову, але і ставати добрими і розумними людьми. Ця робота вимагає хорошого рівня освіти. Також я думаю, що викладання передбачає велику відповідальність. Я хочу досягти успіху у своїй майбутній професії.

Лекція №5

Тема лекції: «Опис роботи зварювальника»

План лекції

1. How to become a welder?
2. Job Description of a Welder
3. Welder Career Video Transcript
4. The 6 Things You Need to Know to Start Welding

Література:

2. https://www.yourfreecareertest.com/welder/
3. https://makezine.com/2014/11/04/the-6-things-you-need-to-know-to-start-welding/
4. https://www.millerwelds.com/resources/article-library/top-10-things-to-teach-novice-welders

Зміст лекції

1. How to Become a Welder

Most welders have a high school diploma or equivalent and a professional certification. Certifications can be gained at vocational schools, community colleges, or private programs. On-the-job training is often included in these training programs. Courses usually included are blueprint reading, shop mathematics, mechanical drawing, physics, chemistry, and metallurgy classes. A welder can also gain certification through the American Welding Society.

2. Job Description of a Welder

Welders primary duty is joining metal parts together. They work on metal components of a various of building or construction industries. Examples include but are not limited to pipelines, bridges, power-plants, or refineries. They may also work in manufacturing cars or ships. Welders maintain the machinery and equipment they work with. Because of the wide variety of work and industries welders work in there are more than 100 different welding processes they can use, the most common is arc welding.

Welders work full-time and often must work overtime. They can work up to 10 hours a day if needed. They primarily work outdoors and are exposed to hazardous situations on a daily basis. Some examples include confined spaces, on scaffolding, or inclement weather. Welders with the highest skill levels and a willingness to relocate have the greatest advantage for solid employment.

3. Welder Career Video Transcript

Welders, cutters, solderers, and brazers use hand-held or remotely controlled equipment to join or cut metal parts, or to smooth surfaces. These workers study sketches and specifications to understand the full picture of the structure and materials before they start their work. Welders' and cutters' tools use high heat to soften the material.

Welders use these tools to join metal in a wide variety of industries, from car racing and manufacturing to steel beam construction. Cutters cut and trim metal objects, or dismantle large objects such as ships and railroad cars. Work may be outdoors on a scaffold or high platform, or indoors in confined areas. Bending, stooping, and heavy lifting are common. Soldering and brazing workers use molten metal to join two pieces of metal. Soldering involves precision

tasks such as forming joins in electronic circuit boards, while brazing uses metals at higher temperatures to, for example, apply coatings to parts for protection against wear and corrosion. Other workers in this field manage machines or robots that perform welding, brazing, soldering, or heat treating tasks. These workers may also operate laser cutters or laser-beam machines.

Hazards include very hot materials and the intense light created by the arc. While employers are required to provide safely ventilated areas, these workers typically wear safety equipment to prevent injuries. Most positions are full-time; evenings, weekends, and overtime hours are common. High school education, along with technical and on-the-job training, is typically required to enter these fields. A certification or other skill credential is attractive to employers.

4. The 6 Things You Need to Know to Start Welding

1. Safety: Absolutely NOT optional.

Before you even think about welding, make sure you have the right gear, including fire resistant jacket, safety glasses, welding gloves and an approved welding helmet. Helmets have come a long way in recent years. To make things easier, look for an auto darkening helmet like these Viking helmets from Lincoln Electric. Make sure you have adequate ventilation or make use of a fume extraction system. Also, don't weld on or near flammable materials; choose a location that will give you plenty of room to let sparks fly.

2. Weld Processes: MIG, Stick Flux-Cored and TIG.

Don't get buffaloed by these terms. They are explained below, from the easiest to get started with, to the ones that will take more skill and experience to master.

Wire welding uses spools of wire fed through a gun, and the constant feed of wire minimizes starts and stops making it easy for relatively inexperienced welders to create good looking joints. It's also faster, more economical, and better suited to welding thin sheet metal.

There are two types of wire welding: MIG (metal inert gas) and flux-cored. MIG welding relies on a constant stream of shielding gas to protect the weld from contamination. The gas is plumbed into the welding gun from a gas bottle. The limitations to MIG welding are that it can be difficult to use outdoors (wind can blow away your shielding gas), and you have to cart around the gas bottle. Flux-cored welding uses wire that is specifically designed for use with or without shielding gas depending upon the wire being used. Those designed for use without gas (self-shielded) are often recommended for outdoor work.

Stick (also called SMAW) Stick welding is frequently the best choice for quick repairs and is often the first process that most beginners learn. It's easy to set up and as the name suggests, it uses a stick electrode like Excalibur 7018, so you don't need a wire feeder. Stick is

slower than MIG welding, but often more forgiving when working with dirty or rusty metal. Stick is not recommended for this sheet metal welding.

TIG (tungsten inert gas) welding is preferred for architectural work or automotive work where the weld has to look good. It's also a good way to weld thin metal and sheet metal and achieve a seamless look. On the difficulty scale, TIG is usually considered the hardest to learn, but it's not out of your grasp if you put the effort into it.

3. Input Voltage: Really just two choices here—110v or 230v—both available in most homes or garages.

In general, the lower input voltages are sufficient for thinner materials; higher input voltage will allow you to penetrate thicker materials. Most beginner welders would benefit from a machine that offers dual voltage (both 110v and 230v) that they can "grow into" so that as they get more confident, they won't be limited.

4. User Interface: Look for one that is intuitive and easy to use.

It can be tricky for a novice to "dial in" welding settings, so look for a machine that does this for you with a logical progression that allows you to select your process, the thickness and material type you're going to weld and the type of consumable (wire or electrode) that you're going to weld with. Good machines will automatically know what input voltage you're plugged into and will adjust settings accordingly (or tell you that your selections are out of range).

5. Material: Some processes and consumables are better for welding certain materials, andvsometimes can require additional tools.

For example, you can weld aluminum with the MIG process, but you will get better results using a spool gun to feed the consumable (aluminum doesn't feed well through a wire feeder and a long cable). Look for guidance from the manufacturer of the welder you're considering purchasing and think about the projects you have in mind. Can you weld a variety of materials like aluminum, mild steel and stainless in a variety of thicknesses? If so, you can be pretty sure that you're getting a machine that will grow with you.

6. Consumables: "Consumable" is the industry term for the wire, electrode or filler material used in welding.

You need to match your consumable with the welding process (see above) as well as the material you're welding on. As you get more proficient, you'll begin to recognize the nuances among consumables and will likely gravitate towards a particular brand. Lincoln Electric offers consumables for just about every material or alloy, so they are always a great place to start.

Лекція №6

Тема лекції: «Великобританія. Географічне положення»

План лекції

1. Nature
2. Coasts
3. Climate
4. Economy

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
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Зміст лекції

The United Kingdom of Great Britain and Northern Ireland is situated on the British Isles — a large group of islands lying off the north-western coast of Europe and separated from the continent by the English Channel and the Strait of Dover in the south and the North Sea in the east.

The British Isles consist of two large islands — Great Britain and Ireland — separated by the Irish Sea, and a lot of small islands, the main of which are the Isle of Wight in the English Channel, Anglesea and the Isle of Man in the Irish Sea, the Hebrides — a group of islands off the north-western coast of Scotland, and two groups of islands lying to the north of Scotland: the Orkney Islands and the Shetland Islands.

Historically the territory of the United Kingdom is divided into four parts: England, Scotland, Wales and Northern Ireland.

The total area of the United Kingdom is 244 square kilometres.

1. Nature

Great Britain is situated in the temperate zone of Europe. The nature of Great Britain is greatly affected by the sea: there is no place situated more than 100-120 km from the seashore, in the northern parts only 40-60 km.

The territory of Great Britain can be divided into three natural regions:

1) Scotland with highland and upland relief and coniferous and mixed forests;

2) Wales and mountainous England with upland considerably cut by ravines and valleys and covered with meadows, moorland and cultivated farmland, with patches of broadleaf forest;

3) South-east England with plain landscape, fertile soils, the predominance of cultivated farmland, with patches of broadleaf forest.

2. Coasts

The coastline of Great Britain is greatly indented, especially in the west and north-west where the mountains come close to the coast. The coasts of Scotland, as well as the coasts of the Hebrides, the Orkney Islands and the Shetland Islands, are cut by numerous fiords. In the south and east the land gradually slopes down towards the sea, and the coasts are sandy aid gentle, here and there interrupted by the ends of hiil-ranges, which form low cliffs.

3. Climate

Great Britain enjoys the humid and mild marine West-Coast climate with warm winters and cool summers and a lot of rainfall throughout the year.

The prevailing winds blow from the south-west. As these winds blow from the ocean, they are mild in winter and cool in summer, and are heavily charged with moisture at all times. As they approach the mountainous areas near the west coasts, they rise up the mountain slopes. Their temperature drops, which causes condensation of moisture in the form of rain. Therefore the wettest parts of Britain are those areas where high mountains lie near the west coast: the western Highlands of Scotland, the Lake District and North Wales. The eastern part of Britain is said to be in the rain-shadow, as the winds lose most of their moisture in their passage over the highlands of the west.

All parts of the British Isles receive rain at any time of the year. Still autumn and winter are the wettest seasons, except in the Thames District, where most rain falls in the summer half of the year. Oxford, for example, has 29 per cent of its rain in summer and only 22 per cent in winter.

As to temperature, Great Britain has warmer winters than any other district in the same latitude. It is due in large measure to the prevalence of mild southwest winds. Another factor is the Gulf Stream1, which flows from the Gulf of Mexico and brings much warmth from the equatorial regions to north-western Europe.

4. Economy

The United Kingdom was the first country in the world which became highly industrialized. During the rapid industrialization of the 19th century, one of the most important factors was that coal deposits were situated near the ground surface, which made mining easy. Coal mining is one of the most developed industries in Great Britain. The biggest coal and iron mines are in the north-east of England, near Newcastle, in Lancashire and Yorkshire; in Scotland near Glasgow; in Wales near Cardiff and Bristol.

Until recent times, Britain's heavy industry was mainly concentrated in the centre of England and in the London region. Such towns as Birmingham, Coventry and Sheffield produced heavy machines, railway carriages and motor-cars. In the 20th century new branches of industry have appeared: electronics, radio, chemical industry and others.

Of great importance for Britain is ship-building industry. It is concentrated in London, Glasgow, Newcastle, Liverpool and Belfast.

Great Britain produces a lot of wool, and woollen industry is developed in Yorkshire. British woollen products are exported to many countries.

Sea-ports play a great role in the life of the country. London, Liverpool and Glasgow are the biggest English ports, from which big liners go to all parts of the world. Great Britain exports industrial products to other countries and imports food and some other products. Sheep-farming, cattle-farming and dairy-farming are also important branches of Great

Britain's economy. Chicken farms produce a great number of chickens and eggs for the population.

The south of England is often called the "Garden of England", because there are many gardens and orchards there. In the orchards people grow apples, pears, cherries, plums and other fruits, and there are also large plantations of different berries.

Лекція №7

Тема лекції: «Економіка Великобританії»

План лекції

1. Agriculture
2. Forestry and fishing
3. Resources and power

3.1. Minerals
3.2. Energy
3.3. Manufacturing
3.4. Finance

Література:

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Зміст лекції

1. Agriculture

The United Kingdom is unusual, even among western European countries, in the small proportion of its employed population (about 2 percent) engaged in agriculture. With commercial intensification of yields and a high level of mechanization, supported initially by national policy and subsequently by the Common Agricultural Policy (CAP) of the EU, the output of some agricultural products has exceeded demand. Employment in agriculture has declined gradually, and, with the introduction of policies to achieve reduction of surpluses, the trend is likely to continue. Efforts have been made to create alternative employment opportunities in rural areas, some of which are remote from towns. The land area used for agriculture (about three-quarters of the total) has also declined, and the arable share has fallen in favour of pasture.

Official agricultural policy conforms to the CAP and has aimed to improve productivity, to ensure stable markets, to provide producers a fair standard of living, and to guarantee consumers regular food supplies at reasonable prices. To achieve these aims, the CAP provides a system of minimum prices for domestic goods and levies on imports to support domestic prices. Exports are encouraged by subsidies that make up the difference between the world market price and the EU price. For a few products, particularly beef and sheep, there are additional payments made directly to producers. More recent policies have included milk quotas, land set-asides (to compensate farmers for taking land out of agricultural use), and reliance on the price mechanism as a regulator.

The most important farm crops are wheat, barley, oats, sugar beets, potatoes, and rapeseed. While significant proportions of wheat, barley, and rapeseed provide animal feed, much of the remainder is processed for human consumption through flour milling (wheat), malting and distilling (barley), and the production of vegetable oil (rapeseed). The main

livestock products derive from cattle and calves, sheep and lambs, pigs, and poultry. The United Kingdom has achieved a high level of self-sufficiency in the main agricultural products except for sugar and cheese.

2. Forestry and fishing

About one-tenth of the United Kingdom's land area is devoted to productive forestry. The government-supported Forestry Commission manages almost half of these woodlands, and the rest are in private hands. Domestic timber production supplies less than one-fifth of the United Kingdom's demand. The majority of new plantings are of conifers in upland areas, but the commission encourages planting broad-leaved trees where appropriate.

Although the United Kingdom is one of Europe's leading fishing countries, the industry has been in long-term decline. Fishing limits were extended to 200 nautical miles (370 km) offshore in the mid-1970s, and, because a significant part of the area fished by other EU members lies within British waters, it has been necessary to regulate catches on a community-wide basis. Meanwhile, the United Kingdom has lost opportunities to fish in some more-distant waters (e.g., those off Iceland), and this has reduced its total catch more than those of other countries of the EU. The United Kingdom's fishing industry now supplies only half the country's total demand. The most important fish landed are cod, haddock, mackerel, whiting, and plaice, as well as shellfish, including *Nephrops* (Norway lobsters), lobsters, crabs, and oysters. Estuarine fish farming—mainly of trout and salmon—has expanded considerably.

3. Resources and power

3.1. Minerals

The United Kingdom has relatively limited supplies of economically valuable mineral resources. The once-important extraction of iron ore has dwindled to almost nothing. Other important metals that are mined include tin, which supplies about half the domestic demand, and zinc. There are adequate supplies of nonmetallic minerals, including sand and gravel, limestone, dolomite, chalk, slate, barite, talc, clay and clay shale, kaolin (china clay), ball clay, fuller's earth, celestine, and gypsum. Sand, gravel, limestone, and other crushed rocks are quarried for use in construction.

3.2. Energy

By contrast, the United Kingdom has larger energy resources—including oil, natural gas, and coal—than any other EU member. Coal, the fuel once vital to the British economy, has

continued to decrease in importance. Compared with its peak year of 1913, when more than one million workers produced more than 300 million tons, current output has fallen by more than four-fifths, with an even greater reduction in the labour force. Power stations are the major customers for coal, but, with growth in the use of other fuels and the increasing closing of pits that have become uneconomical to operate, the industry remains under considerable pressure.

The discovery of oil in the North Sea and the apportionment of its area to surrounding countries led to the rapid development of oil exploitation. Since the start of production in 1975, the quantities brought ashore have grown each year, and the United Kingdom has become virtually self-sufficient in oil and even an exporter. With an average output of nearly three million barrels per day at the beginning of the 21st century, the country was one of the world's largest producers. The balance of payments has benefited considerably from oil revenues, and a substantial proportion has been invested abroad to offset diminishing oil income in the future. Proven reserves were estimated at around 700 million tons in the late 1990s.

Since offshore natural gas supplies from the North Sea began to be available in quantity in 1967, they have replaced the previously coal-based supplies of town gas. A national network of distribution pipelines has been created. Proven reserves of natural gas were estimated at 26.8 trillion cubic feet (760 billion cubic metres) in the late 1990s.

Self-sufficiency in oil and natural gas and the decline of coal mining has transformed Britain'senergy sector. Nuclear fuel has slightly expanded its contribution to electricity generation, and hydroelectric power contributes a small proportion (mainly in Scotland), but conventional steam power stations provide most of the country's electricity.

3.3. Manufacturing

The manufacturing sector as a whole has continued to shrink both in employment and in its contribution (now around one-fifth) to the GDP. The decline in manufacturing largely accounted for the rapid rise in unemployment in the early 1980s. Once economic growth returned, however, there was great improvement in productivity and profits in British manufacturing.

In terms of their relative importance to the GDP, the most important manufacturing industries are engineering; food, beverages (including alcoholic beverages), and tobacco; chemicals; paper, printing, and publishing; metals and minerals; and textiles, clothing, footwear, and leather. The fastest-growing sectors have been chemicals and electrical engineering. Within the chemical industry, pharmaceuticals and specialty products have shown the largest increases. Within the engineering industry, electrical and instrument engineering and transport engineering—including motor vehicles and aerospace equipment—have grown faster than mechanical engineering and metal goods, and electronic products have shown the fastest growth. On the other hand, the growth in motor vehicle production has occurred among foreign-owned, especially Japanese, companies investing in the United Kingdom. British automobile manufacturers have been in decline since the 1970s. After a period of restructuring during the 1980s, the British steel industry substantially increased its productivity, output, and exports during the 1990s. However, food, beverages, tobacco, leather, and engineering as a whole have had below-average growth. Textiles, clothing, and footwear have been in absolute decline because British companies have faced increasing difficulty competing with imports, especially from Asia.

During the 1980s imports of manufactured products increased dramatically, and, although exports of finished manufactured products increased in value, the surplus in

the balance of tradedisappeared and was transformed into a large deficit. Nevertheless, after a period of restructuring in the 1980s, Britain's manufacturing sector increased its productivity and competitiveness, and the trade balance improved and stabilized during the 1990s.

Construction in Britain stagnated during the 1990s because of a decline in prices and in demand for new housing and because of decreased government investment in infrastructure during the first half of the decade. About half the labour force in construction is self-employed. More than half of all construction work is on new projects, the remainder on repair and maintenance. There has been a marked switch from housing funded and owned by public authorities toward private development. Considerable efforts have also been made to encourage tenants of publicly owned rented houses to become owner-occupiers, with the result that the proportion of owner-occupied homes has grown considerably since the early 1970s. The supply of privately rented accommodations became scarcer because of statutory rent controls that discouraged new construction, but changes during the 1980s both in the economic climate and in official policy began to stimulate the supply. The average price of a new house, particularly in London and the South East, has generally continued to increase more rapidly than the prevailing rate of inflation, although prices have fluctuated considerably. In turn, the rising price of new homes has created considerable pressure on the land available for housing, which has been relatively tightly controlled. Here, too, public policy has been changing in favour of greater permissiveness.

Private industrial and commercial construction and public projects account for the remainder of construction. During the 1980s and '90s the United Kingdom embarked on a series of major infrastructure projects, including the Channel Tunnel between Britain and France, the rebuilding of large parts of London's traditional Docklands as a new commercial centre, and extensions to London's rail and Underground systems.

3.4. Finance

The United Kingdom, particularly London, has traditionally been a world financial centre. Restructuring and deregulation transformed the sector during the 1980s and '90s, with important changes in banking, insurance, the London Stock Exchange, shipping, and commodity markets. Some long-standing distinctions between financial institutions have become less clear-cut. For example, housing loans used to be primarily the responsibility of building societies, but increasingly banks and insurance companies have entered this area of lending. Two related developments have occurred: the transformation of building-society branch offices into virtual banks with personal cashing facilities and the diversification of all three of these types of institutions into real estate services. Building societies also participate to a limited extent in investment services, insurance, trusteeship, executorship, and land services.

At the end of the 20th century, the financial services industry employed more than one million people and contributed about one-twelfth of the GDP. Although financial services have grown rapidly in some medium-sized cities, notably Leeds and Edinburgh, London has continued to dominate the industry and has grown in size and influence as a centre of international financial operations. Capital flows have increased, as have foreign exchange and securities trading. Consequently, London has more foreign banks than any other city in the world. Increased competition and technological developments have accelerated change. The International Stock Exchange was reorganized, and the historical two-tier structure of brokers, who executed investors' instructions to buy and sell stocks and shares, and jobbers, who

"made" markets in these securities, was abolished. As a result, new companies link British and foreign banks with former brokers and jobbers. The Financial Services Act of 1986, the Building Societies Act of 1987, and the Banking Act of 1987 regulate these new financial organizations.

In 1997 the government established the Financial Services Authority (FSA) to regulate the financial services industry; it replaced a series of separate supervisory organizations, some of them based on self-regulation. Among other tasks, the FSA took over the supervision of the United Kingdom's commercial banks from the Bank of England. The FSA was widely criticized for its response to the financial crisis that erupted in 2008 and led to a government bailout for a number of prominent British banks. As a result, the Financial Services Act of 2012 abolished the FSA, and the "tripartite" system of financial regulation (the FSA, the Bank of England, and the Treasury) was replaced in 2013 with three new bodies—the Financial Conduct Authority (FCA), mandated with regulating financial service firms and protecting consumers, the Financial Policy Committee (FPC), and the Prudential Regulation Authority (PRA)—the last two of which were embedded in the Bank of England, to which the supervision and regulation of banks were returned.

The Bank of England retains the sole right to issue banknotes in England and Wales (banks in Scotland and Northern Ireland have limited rights to do this in their own areas). In 1997 the Bank of England was given the power to set the "repo," or benchmark, interest rate, which influences the general structure of interest rates. The bank's standing instruction from the government is to set an interest rate that will meet a target inflation rate of 2.5 percent per annum. The bank also intervenes actively in foreign exchange markets and acts as the government's banker. The pound sterling is a major internationally traded currency.

A variety of institutions, including insurance companies, pension funds, and investment and unit trusts, channel individual savings into investments. Finance houses are the primary providers of home mortgages and corporate lending and leasing. There are also companies that finance the leasing of business equipment; factoring companies that provide immediate cash to creditors and subsequently collect the corporate debts owed; and finance corporations that provide venture capital funding for innovations or high-risk companies and that supplement the medium- and long-term capital markets, otherwise supplied by the banks or the Stock Market.

The United Kingdom has a number of organized financial markets. The securities markets comprise the International Stock Exchange, which deals in officially listed stocks and shares (including government issues, traded options, stock index options, and currency options); the Unlisted Securities Market, for smaller companies; and the Third Market, for small unlisted companies. Money market activities include the trading of bills, certificates of deposit, short-term deposits, and, increasingly, sterling commercial paper. Other markets are those dealing in Eurocurrency, Eurobonds, foreign exchange, financial futures, gold, ship brokerage, freight futures, and agricultural and other commodity futures.

The share of invisible trade (receipts and payments from financial services; interest, profits, and dividends; and transfers between the United Kingdom and other countries) has been rising steadily since the 1960s—from about one-third to one-half of the country's total foreign earnings. Within this area, service transactions have grown rapidly, and financial services have grown the fastest.

Лекція №7

Тема лекції: «Політичний устрій Великобританії»

План лекції

1. A Very, Very Short History
2. How History Has Shaped The Political System
3. The Three Arms Of The State
4. The UK Parliament
   4.1. The House of Commons
   4.2. The House of Lords
5. Political Parties
6. The UK Government
   6.1. The Prime Minister
   6.2. Government Departments
   6.3. Government Ministers
   6.4. The Cabinet Committee System
   6.5. The civil service

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
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3. https://www.expatica.com/uk/about/gov-law-admin/the-political-system-of-the-united-kingdom-103179/
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Зміст лекції

1. A VERY, VERY SHORT HISTORY

To understand fully any country's political system, one needs to understand something of its history. This is especially true of the United Kingdom because its history has been very different from most other nations and, as a result, its political system is very different from most other nations too.

Like its (unwritten) constitution, the British state evolved over time. We probably need to start in 1066 when William the Conqueror from Normandy invaded what we now call England, defeated the Anglo-Saxon King Harold and established a Norman dynasty. The Normans were not satisfied with conquering England and, over the next few centuries, tried to conquer Ireland, Wales and Scotland. They succeeded with the first two and failed with the last despite several wars over the centuries.

By one of those ironical twists of history, when Queen Elizabeth of England died in 1603, she was succeeded by her cousin James VI, King of Scots who promptly decamped from Edinburgh and settled in London as King James I of England while keeping his Scots title and running Scotland by remote control. Regal pickings were more lucrative in his southern capital.

A century later the Scottish economic and political elite bankrupted themselves on the Darien Scheme and agreed to a scheme of Union between England and Scotland to make themselves solvent again and so Great Britain with one Parliament based in London came into being. The Irish parliament was abolished in 1801 with Ireland returning members to Westminster and the new political entity was the United Kingdom of Great Britain and Ireland. The southern (Catholic) Irish never reconciled themselves to being ruled by the English and rebelled in 1916 and gained independence in 1922. The northern (Protestant) Irish did not want independence and so the United Kingdom of Great Britain and Northern Ireland arrived. Not a snappy name.

Meanwhile, although the Normans were the last to mount a successful invasion of the country, there were plenty of other plans to conquer the nation, notably the Spanish under King Philip II in 1588, the French under Napoleon in 1803-1805, and the Germans under Hitler in 1940. None succeeeded.

Furthermore, in recent centuries, Britain has not had a revolution of the kind experienced by so many other countries. Some might argue that the English Civil War (1642-1651) was the nation's revolution and - athough it was three and a half centuries ago - it did bring about a major shift in power, but the main constitutional consequence - the abolition of the monarchy - only lasted 11 years and the Restoration of the Monarchy has so far lasted 350 years (although it is now, of course, a very different monarchy). There was a time in British history which we call the Glorious Revolution (1688) but it was a very English revolution, in the sense that nobody died, if a rather Dutch revolution in that it saw William of Orange take the throne.

So the British have never had anything equivalent to the American Revolution or the French Revolution, they have not been colonised in a millennium but rather been the greatest colonisers in history, and in neither of the two world wars were they invaded or occupied.

2. HOW HISTORY HAS SHAPED THE POLITICAL SYSTEM

The single most important fact in understanding the nature of the British political system is the fundamental continuity of that system. For almost 1,000 years, Britain has not been invaded or occupied for any length of time or over any substantial territory as the last successful invasion of England was in 1066 by the Normans. Is this true of any other country in the world? I can only think of Sweden.

This explains why:

- almost uniquely in the world, Britain has no written constitution (the only other such nations are Israel, New Zealand and Saudi Arabia)
- the political system is not neat or logical or always fully democratic or particularly efficient
- change has been very gradual and pragmatic and built on consensus
- British attitudes towards the rest of Europe have been insular, not just geographically but culturally, which was a major factor behind the Brexit decision of 23 June 2016.

To simplify British political history very much, it has essentially been a struggle to shift political power and accountability from the all-powerful king - who claimed that he obtained his right to rule from God - to a national parliament that was increasingly representative of ordinary people and accountable to ordinary people. There have been many milestones along this long and troubled road to full democracy.

A key date in this evolution was 1215 when King John was forced to sign the Magna Carta which involved him sharing power with the barons. This is regarded as the first

statement of citizen rights in the world - although Hungarians are proud of the Golden Bull of just seven years later.

The so-called Model Parliament was summoned by King Edward I in 1295 and is regarded as the first representative assembly. Unlike the absolute monarchs of other parts of Europe, the King of England required the approval of Parliament to tax his subjects and so, then as now, central to the exercise of power was the ability to raise funds.

The bicameral nature of the British Parliament - Commons and Lords - emerged in 1341 and the two-chamber model of the legislature has served as a template in very many other parliamentary systems.

The Bill of Rights of 1689 - which is still in effect - lays down limits on the powers of the crown and sets out the rights of Parliament and rules for freedom of speech in Parliament, the requirement for regular elections to Parliament, and the right to petition the monarch without fear of retribution.

It was the 19th century before the franchise was seriously extended and each extension was the subject of conflict and opposition. The great Reform Act of 1832 abolished 60 'rotten', or largely unpopulated, boroughs and extended the vote from 400,000 citizens to 600,000, but this legislation - promoted by the Whigs (forerunners of the Liberals) - was only carried after being opposed three times by the Tories (forerunners of the Conservatives). Further Reform Acts followed in 1867 and 1884. It was 1918 before the country achieved a near universal franchise and 1970 before the last extension of the franchise (to 18-21 year olds).

Another important feature of British political history is that three parts of the United Kingdom - Scotland, Wales and Northern Ireland - have a special status and have local administrations with a wide range of responsibilities. However, England - which represents about 84% of the total UK population of around 65 million - does not have a clear and strong sense of regionalism. So the British political system does not have anything equivalent to the federal system of the 50 states in the USA. The nature of this (dis)United Kingdom took on a new form in the General Election of May 2015 when the Scottish National Party won 56 out of 59 seats in Scotland.

The final important part of British political history is that, since 1973, the UK has been a member of what is now called the European Union (EU). This now has 28 Member States covering most of the continent of Europe. Therefore the UK Government and Parliament are limited in some respects by what they can do because certain areas of policy or decision-making are a matter for the EU which operates through a European Commission appointed by the member governments and a European Parliament elected by the citizens of the member states [for a guide to the working of the EU click here]. However, in a referendum held on 23 June 2016, the British people narrowly voted that the country should leave the European Union (a decsion dubbed Brexit), a process that was activated in March 2017 but will take two years and be very complex.

The year 2015 was a special year for the British Parliament as it was the 750th anniversary of the de Montfort Parliament (the first gathering in England that can be called a parliament in the dictionary sense of the word), along with the 800th anniversary of the Magna Carta, the document that set the scene for the later 1265 de Montfort Parliament.

3. THREE ARMS OF THE STATE

The British political system is headed by a monarchy but essentially the powers of the monarch as head of state - currently Queen Elizabeth II - are ceremonial. The most important

practical power is the choice of the Member of Parliament to form a government, but the monarch follows the convention that this opportunity is granted to the leader of the political party with the most seats in the House of Commons or who stands the best chance of commanding a majority in a vote of confidence in the Commons.

Although any remaining powers of the monarchy are largely ceremonial, the Royal Family does have some subtle and hidden influence on the legislative process because of a little-known provision that senior royals - notably the Queen and her eldest son the Prince of Wales - have to be consulted about legislation that might affect their private interests and given the opportunity to have such legislation amended.

Traditionally the choice of monarch has been determined on the hereditary and primogeniture principles which means that the oldest male child of a monarch was the next in line to the throne. Under the terms of the Act of Settlement of 1701, the monarch and the monarch's spouse could not be Catholics because the UK monarch is also the Head of the Church of England. In 2015, the primogeniture principle was abolished, so that the next in line can now be a female eldest child, and the monarch can marry a Catholic but not himself or herself be one.

In classical political theory, there are three arms of the state:

1. The executive - the Ministers who run the country and propose new laws
2. The legislature - the elected body that passes new laws
3. The judiciary - the judges and the courts who ensure that everyone obeys the laws.

In the political system of the United States, the constitution provides that there must be a strict division of powers of these three arms of the state, so that no individual can be a member of more than one. So, for example, the President is not and cannot be a member of the Congress. This concept is called 'separation of powers', a term coined by the French political, enlightenment thinker Montesquieu. This is not the case in the UK where all Ministers in the government are members of the legislature and one individual, the Lord Chancellor, is actually a member of all three arms.

4. THE U.K. PARLIAMENT

The British Parliament - like that of most larger countries - is bicameral, that is there are two houses or chambers. One tends to find unicameral legislatures in smaller nations such as Denmark, Sweden, Finland, Greece, Israel and New Zealand, although China and Iran are two larger nations with a single legislative chamber (but neither of these countries is a democracy).

The British Parliament is often called Westminster because it is housed in a distinguished building in central London called the Palace of Westminster which stands out because of the clock tower at the south end (this is the Elizabeth Tower and it houses Big Ben) and the tower with a flag at the other end (this is the Victoria Tower). Although this is a grand building, it is in an appalling state of repair and it is planned that in 2025 Parliament will move out of the building for a £3.5 billion refurbishment programme lasting an estinated six years. The House of Commons will move to Richmond House and the House of Lords will relocate to the Queen Elizabeth II conference centre.

4.1. The House of Commons

This is the lower chamber but the one with the most authority. I worked there as a Research Assistant to Merlyn Rees MP, then Labour's Opposition spokesperson on Northern Ireland, from 1972-1974.

- The House of Commons sits each week day for about half of the weeks of the year. The precise hours of sitting are:
  - Monday 2.30 - 10.30 pm
  - Tuesday 2.30 - 10.30 pm
  - Wednesday 11.30 am - 7.30 pm
  - Thursday 10.30 am - 6.30 pm
  - Friday 9.30 am - 3 pm
- The Commons is chaired by the Speaker. Unlike the Speaker in the US House of Representatives, the post is non-political and indeed, by convention, the political parties do not contest the Parliamentary constituency held by the Speaker.
- The House of Commons currently comprises 650 Members of Parliament or MPs (the number varies slightly from time to time to reflect population change). This is a large legislature by international standards. For instance, the House of Representatives in the USA has 435 seats but, of course, each of the 50 US states has its own legislature. Before the General Election of 2010, the Conservative Party said that it wished to reduce the number of Commons seats by around 10% (65 seats) and the Liberal Democrats said that the Commons should be reduced by 150 MPs. The Coalition Government of 2010-2015 passed legislation to reduce the number from 650 to 600, as part of a wider change to the number and size of constituencies, but Parliament blocked the process of redrawing boundaries that is necessary before an General Election can be held with fewer seats.
- Rather oddly (but deliberately), there is insufficient seating capacity in the chamber of the House of Commons for all the MPs. Members do not sit at desks (like most legislatures) but on long, green-covered benches and there is only seating capacity for 437 MPs out of the total of 650. The origin of this strange arrangement is that the Commons first home was the medieval St Stephen's Chapel in the Palace of Westminster which could only fit around 400 Members.
- Equally odd is that Members vote (votes are called 'divisions') by physically walking through one of the two lobbies which run along the side of the Commons chamber. These lobbies are the 'aye' lobby and the 'nay' lobby. This archaic procedure means that votes take a long time to conduct and it is not unknown for a member accidentally to walk into the wrong lobby. The votes are counted by 'tellers' who then return to the chamber to announce the numbers to the Speaker.
- Each member in the House of Commons represents a geographical constituency. Typically a constituency would have around 60,000-80,000 voters, depending mainly on whether it is an urban or rural constituency. The largest constituency in the country is the Isle of Wight with around 110,000 electors, while the smallest is Na h-Eileanan an Iar (formerly known as the Western Isles) with an electorate of only arouind 22,000. The Coalition Government of 2010-2015 intended to make the size of constituencies more equal in terms of electors, but so far the legislation has not been implemented.
- Every citizen aged 18 or over can vote once in the constituency in which they live. Voting is not compulsory (as it is in Australia). In the last General Election of May 2015, 66.1% of the electorate actually voted. Most democratic countries use a method of election called proportional representation (PR) which means that there is a reasonable correlation between the percentage of votes cast for a particular political party and the number of seats or representatives won by that party. However, much of

the Anglo-Saxon world - the USA, Canada, and the UK but not Australia or New Zealand - uses a method of election called the simple majority system or 'first past the post' (FPTP). In this system, the country is divided into a number of constituencies each with a single member and the party that wins the largest number of votes in each constituency wins that constituency regardless of the proportion of the vote secured. The simple majority system of election tends to under-represent less successful political parties and to maximise the chance of the most popular political party winning a majority of seats nationwide even if it does not win a majority of the votes nationwide.

- Until recently, in the UK (unlike many countries), there was not fixed term parliaments. A General Election - that is, a nationwide election for all 650 seats - was held when the Prime Minister called it, but the election could not be more than five years after the last one and it was usually around four years after the last one. I fought the General Elections of February 1974 and October 1974 as the Labour candidate for the north-east London constituency of Wanstead & Woodford. The Coalition Government of 2010-2015 passed legislation to provide for fixed five-year parliaments which meant that the next General Election was scheduled for May 2020. However, the Prime Minister Theresa May was able to call a snap General Election for 8 June 2017 by winning a Commons vote of more than two-thirds to activate provision for an early election in the Fixed Term Parliaments Act.

The result of the last General Election was as follows:

- Conservative Party: 318 seats (down 13) with 42.45% of the vote
- Labour Party: 262 seats (up 32) with 39.99% of the vote
- Scottish National Party: 35 seats (down 19) with 3.04% of the vote
- Liberal Democrat Party: 12 seats (up 4) with 7.4% of the vote
- Other parties: 22 seats (down 1) with 7.1% of the vote
- Total turnout nationwide was 69% - the highest since the election of 1997

Note 1: In practice, the Speaker is not counted against any political party because he or she is required to be neutral and therefore traditionally he or she is not opposed by other parties in the election.

Note 2: In Northern Ireland, Sinn Fein - which won 7 constituencies in 2017 - does not take its seats.

4.2. **The House of Lords**

This is the upper chamber but the one with less authority. Its main roles are to revise legislation and keep a check on government by scrutinising its activities. Since 1911, its power to block "money bills" is limited to one month and its power to block other bills is limited to one session, so ultimately it cannot block the will of the House of Commons. Furthermore, since 1945, there has been the Salisbury Convention that the House of Lords will not oppose a measure that was specifically mentioned in the last election manifesto of the political party forming the Government.

The House of Lords is an utterly bizarre institution that has no parallel anywhere in the democratic world. The explanation for the unusual nature of the Lords goes back to the beginning of this essay: the British political system has evolved very slowly and peacefully and it is not totally logical or democratic.

- There is no fixed number of members in the House of Lords and the number fluctuates because of deaths, retirements and new appointments, but currently there are almost

800 members - many more than in the House of Commons, more than the combined houses of the American Congress or the Indian Parliament (although both of these nations have a federal system), and the second biggest legislative body in the world (after the Chinese National People's Congress which is effectively a rubber-stamping body). The number was actually halved to 666 in the reforms of 1999 but, since then, succesive Prime Ministers (especially David Cameron) have been adding new life peers much faster than members are dying. Indeed the last (Coalition) Government added over 100. Ironically the size of the House of Lords continues to rise at the same time as the House of Commons has legislated to reduce its size (although the legislation has not been implemented).

- Historically most members of the House of Lords have been what we called hereditary peers. This meant that years ago a king or queen nominated a member of the aristocracy to be a member of the House and, since then, the right to sit in the House has passed through the family from generation to generation. Clearly this is totally undemocratic and the last Labour Government abolished the right of all but 92 of these hereditary peers to sit in the House.
- Almost all the other members of today's House of Lords are what we call life peers. This means that they have been chosen by the Queen, on the advice of the Government, to sit in the House for as long as they live, but afterwards no member of their family has the right to sit in the House. Almost 200 are former Members of Parliament. Others are distinguished figures in fields such as education, health and social policy.
- A small number of other members - 26 - are archbishops and bishops of the Church of England. The archbishops of Canterbury and York and the bishops of London, Durham and Winchester automatically take seats in the Lords, while the further 21 seats are allocated on the basis of length of service. Iran is the only other country in the world that provides automatic seats for senior religious figures in its legislature.
- There is no retirement age for peers and the average age is an incredible 69.
- Since the House of Lords is composed in a totally different manner from the House of Commons, the Government of the day - which usually has a majority in the Commons does not have a majority in the Lords. So, currently there is a Conservative Government in power, but only around 250 of the 800 members of the Lords (most appointed but some hereditary) take the Conservative whip. There are approaching 200 Labour Lords and about 100 Liberal Democrats.
- There is nowhere near sufficient seating capacity in the chamber of the House of Lords for all the peers. Members do not sit at desks (like most legislatures) but on long, red-covered benches and there is only seating capacity for 230 peers out of the total of Aroind 800. Even on a 'whipped' vote, a couple of hundred peers will not turn up.
- House of Lords reform is unfinished business. The Parliament Act of 1911 first raised the prospect of an elected upper house but it has still not happened. There is a cross-party consensus that it should become a mainly elected body, although there is as yet no agreement on the details of the next stage of reform.

5. POLITICAL PARTIES

The idea of political parties first took form in Britain and the Conservative Party claims to be the oldest political party in the world. Political parties began to form during the English civil

wars of the 1640s and 1650s. First, there were Royalists and Parliamentarians; then Tories and Whigs. Whereas the Whigs wanted to curtail the power of the monarch, the Tories - today the Conservatives - were seen as the patriotic party.

Today there are four major political parties in the British parliamentary system:

- The Conservative Party (frequently called the Tories) - the centre-Right party, currently led by Theresa May, which since 2010 has been in Government either in coalition (2010-2015) or alone (since 2015)
- The Labour Party - the centre-Left party, led by Jeremy Corbyn, which was last in Government from 1997 to 2010
- The Scottish National Party - the party supporting Scottish independence, which is led by Nicola Sturgeon
- The Liberal Democrat Party (known as the Lib Dems) - the centrist, libertarian party, led by Vince Cable, which was the junior member of the Coalition Government of 2010-2015

In recent years, Britain has seen the rise of the UK Independence Party (UKIP) led by Nigel Farage until May 2015, which was formed in 1993 but achieved some spectacular performances in local and European elections in May 2014. In the general election of May 2015, it won 12.6% of the vote but, in the general election of June 2017, its vote collapsed to a mere 1.8%.

In addition to these five parties, there are some much smaller UK parties (notably the Green Party) and some parties which operate specifically in Wales (Plaid Cymru) or Northern Ireland (such as the Democratic Unionist Party for the loyalistsand Sinn Fein for the nationalists).

Each political party chooses its leader in a different way, but all involve all the Members of Parliament of the party and all the individual members of that party. By convention, the leader of the political party with the largest number of members in the House of Commons becomes the Prime Minster (formally at the invitation of the Queen).

Political parties are an all-important feature of the British political system because:

- The three main UK political parties in the UK have existed for a century or more and have a strong and stable 'brand image'.
- It is virtually impossible for someone to be elected to the House of Commons without being a member of an established political party.
- All political parties strongly 'whip' their elected members which means that, on the vast majority of issues, Members of Parliament of the same party vote as a 'block'.

Having said this, at least until the 2017 general election, the influence of the three main UK political parties was not as dominant as it was in the 1940s and 1950s because:

- The three parties have smaller memberships than they did, since voters are much less inclined to join a political party.
- The three parties secure a lower overall percentage of the total vote, since smaller parties between them now take a growing share of the vote.
- Voters are much less 'tribal', not supporting the same party at every election, and much more likely to 'float', voting for different parties at successive elections.
- The ideological differences between the parties are less than they were, with the parties adopting more 'pragmatic' positions on many issues.

For decades, therefore, the combined share of the vote taken by Conservatives and Labour diminished as the two-party model fractured. The last election dramatically reversed this trend as the two parties took 82.4% of the votes. The Liberal Democrats, the Greens and

especially the UK Independence Party all did badly and now only have a mere 13 seats between them.

In the past, class was a major determinant of voting intention in British politics, with most working class electors voting Labour and most middle class electors voting Conservative. These days, class is much less important because:

- Working class numbers have shrunk and now represent only 43% of the electorate.
- Except at the extremes of wealth, lifestyles are more similar.
- Class does not determine voting intention so much as values, trust, competence and (in Scotland) nationalism).

In the British political system, there is a broad consensus between the major parties on:

- the rule of law
- the free market economy
- the National Health Service (NHS)
- membership of NATO and possession of a nuclear deterrent

The main differences between the political parties concern:

- how to tackle poverty and inequality
- the levels and forms of taxation
- the extent of state intervention in the economy
- the balance between collective rights and individual rights
- the terms of the UK's departure from the European Union

6. THE U.K. GOVERNMENT

All Government Ministers have to be a member of either the House of Commons (most of them) or the House of Lords (the remainder of them) and every Government Department will have at least one Minister in the Lords, so that the Department can speak in either House as necessary. The number of Ministers varies from administration to administration, but typically there will be around 120, the 20 or so most senior being Cabinet Ministers. The Ministerial and Other Salaries Act, passed in 1975, limits prime ministers to 109 ministerial salaries being paid at any one time with a maximum of 95 ministers in the House of Commons. All Ministers are subject to the Ministerial Code which sets out they should behave in fulfilment of their duties.

Historically most British governments have been composed of ministers from a single political party which had an overall majority of seats in the House of Commons and the 'first-past-the-post' (FPTP) electoral system greatly facilitates and indeed promotes this outcome. However, occasionally there have been minority governments or coalition governments, especially in recent years.

There was a minority Labour Government from February-October 1974 (when I was a Special Adviser in the Northern Ireland Office and fought the two General Elections of that year). Then there was Liberal-Labour (Lib-Lab) Pact of 1977-1978 (when I was a Special Adviser in the Home Office) during which time the Labour Government lost its majority but had the general support of the Liberals who did not actually join the government.

For five years, the UK had its first coalition government in 65 years when, in May 2010, the Conservatives went into coalition with the Liberal Democrats because in the General Election they did not secure a majority of the seats. In this coalition, the Lib Dems had 17 ministers led by the Deputy Prime Minister Nick Clegg.

Then, at the General Election of May 2015, the Conservative Party won an overall majority and the normal arrangement resumed of all Ministers coming from the same party.

However, at the General Election of June 2017, the Conservatives failed to win an overall majority resulting in what is called a 'hung parliament' and so the party is governing with the support of the Democratic Unionist Party (DUP) of Northern Ireland. This is not a formal coalition but a 'confidence and supply' agreement in which the DUP has undertaken - in return for a comprehensive package of measures and funding - to support the government on key votes.

6.1. **The Prime Minister**

The UK does not have a President. Constitutionally the head of state is the monarch who is a hereditary member of the Royal Family. However, the monarch has very few formal powers and stays above party politics. He or she receives a weekly oral report from the Prime Minister, a tradition which began with King George I in 1714 because this German had struggled to follow the English deliberations of his Cabinet.

Therefore, in practice, the most important person in the British political system is the Prime Minister. The first modern Prime Minister was Sir Robert Walpole who served from 1721-1742, so the current PM Theresa May is the 54th (and only the second woman to hold the post). In theory, the Prime Minister simply choses the ministers who run Government departments and chairs the Cabinet - the collection of the most senior of those Ministers. In practice, however, the Prime Minister is a very powerful figure and increasingly has been behaving much like a president in other political systems, especially in the area of foreign policy.

I have personally met four British Prime Ministers: Harold Wilson, Jim Callaghan, Tony Blair and Gordon Brown.

The official residence of the Prime Minister is at 10 Downing Street in central London - a location I have visited about a dozen times - and the country residence of the Prime Minister is at Chequers in Buckinghamshire.

One British Prime Minister has been assassinated: Spencer Perceval was shot dead in the House of Commons in 1812.

6.2. **Government Departments**

The most important political departments are called:

- The Treasury - In most countries, this would be called the Ministry of Finance. It is responsible for the raising of all taxes and the control of all government expenditure plus the general management of the economy. The head of the Treasury is called the Chancellor of the Exchequer and is currently Philip Hammond.
  Link: Treasury site click here
- The Home Office - In most countries, this would be called the Ministry of the Interior. It is responsible for criminal matters, policing, and immigration. The Head of the Home Office is called the Home Secretary and is currently Sajid Javid.
  Link: Home Office site click here
- The Foreign and Commonwealth Office - In most countries, this would be called the Ministry of Foreign Affairs. It is responsible for all international relationships, especially membership of the European Union. The head of the Foreign Office is called the Foreign Secretary and is currently Jeremy Hunt.
  Link: Foreign Office site click here

Many other UK Government Departments are similar to those in other countries and cover subjects such as education, health, transport, industry, and justice. However, there are also small departments for Scotland, Wales and Northern Ireland.
When talking about the British Government, the media will often use the term Whitehall because a number of Government Departments are located along a central London street very close to Parliament called Whitehall.

6.3. Government Ministers

All Government Departments are run by Ministers who are either Members of the House of Commons or Members of the House of Lords. There are three classes of Minister:

- Secretary of State - This is usually the head of a Department.
- Minister of State - This is a middle-ranking minister.
- Parliamentary Under-Secretary of State - This is the most junior class of minister.

The Prime Minster and all the Secretaries of State together comprise an executive body of government called the Cabinet. The Cabinet meets usually once a week on Tuesday morning. Cabinet meetings are confidential and all members are bound by any decision that it takes in a practice called collective responsibility. An extensive system of Cabinet Committees considers matters either before they go to Cabinet or (more usually) instead of them going to Cabinet.
Although all Ministers are appointed by the Prime Minster and report to him, ultimately all Ministers are accountable to Parliament:

- About once a month, they have to face questions in the House of Commons about the work of the Department.
- Each government department has a special committee of the House of Commons which watches the work of that Department.
- Any government initiative or important statement concerning a Department must be the subject of an appearance in the House of Commons by a minister from that Department.

Link: full list of current ministers click here

6.4. The Cabinet Committee System

The business of modern government is complex and multi-dimensional, so most Governmental decisions are made by a system of Cabinet Committees which bring together (typically) around ten Ministers from all the Departments relevant to that policy area who meet (again typically) every few weeks. Only the most important decisions go before the full Cabinet which meets weekly.
In cases of emergency, a body with an ad hoc membership, (usually) chaired by the Prime Minister or the Home Secretary, is convened in the Cabinet Office in a location which is equivalent to the Situation Room in the White House. It has the exciting acronym COBRA but this simpy stands for Cabinet Office Board Room A.

6.5. The civil service

Each Secretary of State is able to appoint a couple of political advisers ☐- formally known as Special Advisers (or SpAds) - ☐ to serve him or her. I was a Special Adviser to Merlyn Rees in the Northern Ireland Office from 1974-1976 and in the Home Office from 1976-1978, while my son Richard was a Special Adviser to Ruth Kelly in the Department for Education & Skills in 2005 and a Special Adviser to Douglas Alexander at the Department

for International Development in 2009-2010. But Special Advisers are simply advisers. They have no line management responsibilities in respect of the staff of the Department.

Besides these tiny number of Special Advisers, Government Departments are run by civil servants who are recruited in a totally open manner and serve governments of any political party. The independence and professionalism of the British civil service are fundamental features of the British political system. My son Richard once worked as a civil servant in what was then the Department of Trade & Industry and my half-brother Chris was an official in the Treasury for five years.

At the time that Margaret Thatcher became Conservative Prime Minister in 1979, the British civil service numbered almost 800,000, but successive governments have cut the service and it is now 427,000 which is 1.3% of the country's workforce. All civil servants are subject to the Civil Service Code, which states how they should behave, and have to sign the Official Secrets Act, which requires them to keep information confidential.

Лекція №8

Тема лекції: «Видатні люди Великобританії»

План лекції

1. Joanne Rowling
2. Sean Connery
3. David Beckham
4. Robbie Williams
5. Andrew Lloyd Webber
6. Margaret Thatcher

Література:

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Зміст лекції

1. Joanne Rowling

Joanne Rowling is one of the most famous English writers in the world. Her Harry Potter series has been translated into many languages. Joanne Kathleen Rowling was born on the 31st of July in 1965, in Bristol, England. In her childhood she dreamt of becoming a writer. At the age of six Joanne wrote her first book about a rabbit. Like Hermione Granger, one of the characters of Harry Potter books, she was a know-it-all and a bookworm and her favourite subjects at school were English and foreign languages. After graduating from Exeter University, she worked as a secretary and then went to Portugal to teach English. Rowling had busy afternoons and evenings, but free mornings when she could write. In Portugal she married a TV-journalist, but the marriage wasn't successful, so she returned to Britain with her 4-month-old daughter. Joanne settled in Edinburgh, Scotland. The idea of a book about a young magician occurred to her in 1990, when she was going by train from Manchester to London. She quickly invented the main plot and some of the characters and in July 1997, Harry Potter and the Sorcerer's Stone was published. It became an immediate success and was published in eight countries. There are seven Harry Potter books, five films based on the novels, Harry Potter computer games and a lot of goods with the Harry Potter trademark.

2.Sean Connery

Sir Thomas Sean Connery is an Academy Award-, Golden Globe-winning Scottish actor and producer who is best known as the first actor to have played James Bond in cinema, starring in seven Bond films. Sean Connery was born on August 25, 1930 in Fountainbridge, Edinburgh, to the family of a cleaning lady and a factory worker and truck driver. Connery's first job was as a milkman in Edinburgh, then he joined the Royal Navy, but was later discharged on medical grounds. Afterwards, he worked as a lorry driver, labourer, artist's model for the Edinburgh College of Art, coffin polisher, and bodybuilder. According to Connery's official website, he placed third in the 1953 Mr. Universe bodybuilding contest which led Connery to stage, television, and film work. Connery's breakthrough came with the role of secret agent

James Bond. He acted in seven Bond films including Dr. No, From Russia with Love, Goldfinger, Thunderball, You Only Live Twice, Diamonds Are Forever and Never Say Never Again. In 1987, he won the Academy Award for the Best Supporting Actor for his role in The Untouchables. Sir Sean Connery was knighted by Queen Elizabeth II in July 2000. Connery is known for keeping his Scottish accent in films, regardless of the nationality of the character played. Despite being older than most contemporary actors, he has repeatedly been named as one of the most attractive men alive by various magazines due to his good looks.

3.David Beckham

David Robert Joseph Beckham is an English footballer, who is playing for and is the captain of Major League Soccer's Los Angeles Galaxy. Beckham was born on May 2, 1975 in England. His career began when he signed a professional contract with Manchester United, making his first-team debut in 1992 aged 17. He left Manchester United to sign for Real Madrid in 2003, where he remained for four seasons. While at Madrid, Beckham became the first British footballer to play 100 Champions League matches. In January 2007, it was announced that Beckham would leave Real Madrid and sign a five-year contract with the Los Angeles Galaxy. Beckham's new contract with the Galaxy, effective on July 1, 2007, gave him the highest salary of any Major League Soccer player in history. He has twice been runner-up for FIFA World Player of the Year, and in 2004 was the world's highest-paid footballer. Beckham was captain of England National Team from November 15, 2000 to July 2, 2006. Alongside with his career as a footballer, Beckham has become famous through his marriage to former Spice Girls member, Victoria Beckham, leading to various sponsorship deals and advertising campaigns and an estimated joint wealth of £112 million. The couple has 3 sons and 1 daughter and currently live in California, USA.

4.Robbie Williams

Robbie Williams, born on February 13, 1974 in Stock-on-Trent, England, is a Grammy Award-nominated, 15-time British Record Industry Trust Awardwinning English singer and songwriter. His career started as a member of the pop band Take That in 1990. He left the band in 1995 to start his solo career, after selling 25 million records with the group. His album sales stand at over 55 million, with singles sales over 17 million. Williams entered the Guinness Book of World Records when in just one day he sold more than 1.6 million tickets for his 2006 world tour. He has been the recipient of many awards, including fifteen BRIT and six ECHO awards. In 2004, he officially became a member of the UK Music Hall of Fame, after being voted as the greatest artist of the 1990s. Robbie Williams is the artist who is currently featured the most in the UK Now That's What I Call Music! TV-show.

5.Andrew Lloyd Webber

Andrew Lloyd Webber is a highly successful British composer of musical theatre. Webber started composing at the age of 6 and published his first piece at the age of 9. Lloyd Webber has received great popular success, with several musicals that have run for more than a decade both in the West End and on Broadway. He has composed 13 musicals, a song cycle, a set of variations and two film scores. He has also gained a number of honours, including a knighthood in 1992 followed by a peerage, three Grammy Awards, an Oscar, an International Emmy, a Golden Globe and many others. Several of his songs, notably Don't Cry for Me, Argentina from the musical Euita, Memory from Cats, and The Music of the Night from The Phantom of the Opera have been widely recorded and were hits outside of their parent

musicals. His company, the Really Useful Group, is one of the largest theatre operators in London.

6.Margaret Thatcher

Margaret Thatcher is a British politician, who used to be Prime Minister of the United Kingdom from 1979 to 1990 and Leader of the Conservative Party from 1975 to 1990. She is the first and only woman to hold either post. Thatcher's term as Prime Minister was the longest continuous period in office since the tenure of Lord Liverpool who was Prime Minister in the early 19th century. She was the first woman to lead a major political party in the UK, and the first of only three women to have held any of the four great offices of state. Among other things, she defiantly opposed the Soviet Union, and her tough-talking rhetoric gained her the nickname t|he "Iron Lady". She currently has a life peerage as Baroness Thatcher, of Kesteven in the County of Lincolnshire, which entitles her to sit in the House of Lords. Not long ago a film was shot about Thatcher's life and career (The Iron Lady).

Практичне заняття №9

Тема лекції: «Театри Великобританії»

План лекції

1. National Theatre, London
2. Royal Exchange Theatre, Manchester
3. Festival Theatre Edinburgh, Edinburgh
4. Wales Millennium Centre, Cardiff
5. The Old Vic, London
6. Citizen's Theatre, Glasgow
7. Royal Shakespeare Company, Stratford-upon-Avon
8. Theatre Royal, Bath
9. Crucible Theatre, Sheffield
10. The Globe, London

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Зміст лекції

The performing arts have an incredibly long-standing tradition in the United Kingdom, and over the centuries, the country has prided itself on the quality of its theatre. From London's West End to the regional theatres of Scotland, England, and Wales, a plethora of theatrical excursions are on offer, which showcase the best of classic and modern theatre.

1. National Theatre, London

Situated on the South Bank of the River Thames, the National Theatre has a reputation for producing some of the best theatre the UK has to offer. Housing the Olivier, Lyttelton and Cottesloe theatres under one roof, the varied programme offers a myriad of classic drama and new plays by contemporary playwrights, alongside a wonderful selection of bars and restaurants, exhibitions and a book shop. Since June 2009, the theatre has also begun a programme of live-production broadcasts to local cinemas, as well as to those further afield. National Theatre Live screens performances to over 1,000 venues in 35 countries, so those unable to make it to London have the opportunity to experience the best of British performing arts wherever they are.

2. Royal Exchange Theatre, Manchester

The Royal Exchange Theatre has been hosting theatre productions since 1976 and is housed in one of Manchester's most-beautiful buildings in the heart of the city centre. The theatre itself sports a stage 'in-the-round' and can seat an audience of up to 700, making it the largest theatre of its kind in Britain. Annually, the Royal Exchange gives an average of 350 performances and puts on a programme that intertwines the classic performance arts, revivals and contemporary writing. In addition, the adjoining studio also offers music concerts, readings and literary events that engage both children and adults alike.

3. Festival Theatre Edinburgh, Edinburgh

Situated in the heart of Edinburgh's Old Town, the Festival Theatre Edinburgh stands on the site of the old Empire Theatre, dating back from 1830. The current location was opened in 1994 and today, the venue has one of the largest performance areas in Scotland, and is one of the UK's most reputable arts centres. Used primarily for ballet and opera, as well as large-scale music events, it is also one of the major venues of the annual Edinburgh International Festival. Interestingly, the theatre is said to be haunted by a dark stranger, the famous illusionist Sigmund Neuberger, burnt to death at the Empire in a fire in 1911.

4. Wales Millennium Centre, Cardiff

The Wales Millennium Centre is one of Wales' top attractions, which stages a myriad of musicals, opera, ballet and contemporary dance performances. The venue boasts a 1,900 seat theatre, as well as a studio theatre, a dance house and orchestral hall. Since its opening, over 14 million visitors have graced the national arts centre – it comes as no surprise that it is repeatedly considered as one of the best theatres built in the last few decades. Those visiting Wales should pay a visit to a building that expresses the intrinsic 'Welshness' of the area; indeed, the building is designed with local materials dominating the nation's history – slate, metal, wood and glass.

5. The Old Vic, London

Just outside Waterloo Station in London, the foundations of The Old Vic date back to 1818 when it was known as the Royal Coburg Theatre. Over the centuries, the venue's name has been changed repeatedly, and the building was heavily damaged in the 1940 air raids. Since its new formation in 1976 under Laurence Olivier, the theatre has made up the core of the National Theatre of Great Britain. Since 2003, Kevin Spacey was appointed as the artistic director, and the company continues to awe audiences with its selection of classics and modern masterpieces.

6. Citizen's Theatre, Glasgow

The Citizen's Theatre first opened as a performing arts center in 1878 and has been permanently established as a theatre since 1945. As the second-oldest operational theatre in the UK, it has a fascinating history and remains one of Scotland's most important theatre venues. The building holds up to 500 visitors and has retained many of its Victorian architectural features. It offers a distinguished range of contemporary plays, classic drama and new Scottish writing. For those visiting Glasgow, the Citizen's Theatre is an iconic attraction that is not to be missed.

7. Royal Shakespeare Company, Stratford-upon-Avon

The Royal Shakespeare Company is arguably one of the most-famous theatre companies in the world. The ensemble connects audiences all over the world with the works of William Shakespeare, as well as with a wide-ranging selection of contemporary playwrights and actors. The company is mostly located in Stratford-upon-Avon, the place of Shakespeare's birth, where performances are often accompanied by workshops and educational programmes. Each year, the RSC attracts over one million visitors to the heart of the Midlands, but also tours – performing the best of British theatre throughout the UK and across the world.

8. Theatre Royal, Bath

At over 200 years old, the Theatre Royal in Bath is one of England's most reputable theatres with a seating capacity of over 900. The building itself dates from 1720 but the premises only became a theatre in 1805 and the venue remains a wonderful example of Georgian architecture. Alongside an extensive programme performed by touring troupes, the theatre also hosts several events each year, such as the Shakespeare Unplugged festival. As many productions begin their season at the Theatre Royal before their stints in London, it is well worth a visit. Yet be warned, the building itself is allegedly haunted by The Grey Lady, a former actress who watched productions from the stalls, leaving behind a distinctive scent of jasmine.

9. Crucible Theatre, Sheffield

The Crucible Theatre opened in 1971 and is situated in the Sheffield city centre. Since its beginnings, it has adapted to be a renowned dance and musical performance stage, as well as a platform for classical and modern theatre. The layout of this particular theatre makes it one of the most interesting in England – the audience sits on three sides and each member is situated at most 20 metres from a performer. As a result, the 980-seater auditorium evokes an intimate relationship between the spectator and the stage, providing a particularly memorable experience. Interestingly, when it's not hosting touring theatre productions, the theatre is a venue for the World Snooker Championship.

10. The Globe, London

The Globe Theatre is perhaps one of England's most famous theatres due to its close associations with the great William Shakespeare. The original theatre was built in 1588 by his theatre company, the Lord Chamberlain's Men, but was tragically destroyed in a fire in 1613. Today, a modern reconstruction of the three-story open-air amphitheater stands approximately 230 metres from the original site. Today, the theatre is built entirely of English Oak and the attention to detail of the timber-framed building is incredibly striking. For lovers of Shakespeare, this is the place to go to experience the dramatic talent of one of the nation's most famous playwrights.

Лекція Практичне заняття №10-11

Тема лекції: «Професійна освіта Великобританії»

План лекції

1. PRIMARY EDUCATION
2. KINDERGARTEN
3. ELEMENTARY SCHOOL
4. SECONDARY EDUCATION
5. GRAMMAR SCHOOLS IN THE UNITED KINGDOM
6. HIGHER EDUCATION
7. DEGREES AND GRADUATION
8. COSTS
9. PUBLIC SCHOOLS IN THE UK

Література:

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2. https://www.learnenglish.de/culture/educationculture.html
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Зміст лекції

1. PRIMARY EDUCATION

Primary or elementary education is the first years of formal, structured education that occurs during childhood. In most Western countries, it is compulsory for children to receive primary education (though in many jurisdictions it is permissible for parents to provide it).

Primary education generally begins when children are four to seven years of age. The division between primary and secondary education is somewhat arbitrary, but it generally occurs at about twelve years of age (adolescence); some educational systems have separate middle schools for that period. Primary and secondary education together are sometimes (in particular, in Canada and the United States) referred to as " K-12 " education, (K is for kindergarten, 12 is for twelfth grade).

Typically, primary education is provided in schools , where (in the absence of parental movement or other intervening factors) the child will stay, in steadily advancing classes, until they complete it and move on to secondary schooling. Children are usually placed in classes with one teacher who will be primarily responsible for their education and welfare for that year. This teacher may be assisted to varying degrees by specialist teachers in certain subject areas, often music or physical education. The continuity with a single teacher and the opportunity to build up a close relationship with the class is a notable feature of the primary education system. Over the past few decades, schools have been testing various arrangements which break from the one-teacher, one-class mold.

The major goals of primary education are achieving basic literacy and numeracy amongst all their students, as well as establishing foundations in science, geography, history

and other social sciences . The relative priority of various areas, and the methods used to teach them, are an area of considerable political debate.

Traditionally, various forms of corporal punishment were an integral part of early education in the UK. This practice has now been outlawed in the UK.

2. KINDERGARTEN

The German expression kindergarten usually refers to the first level of official education , according to the K-12 educational system. Kindergarten is usually administered in an elementary school .

The equivalent in England and Wales is reception . The Australian equivalent of this is the preparatory grade (commonly called 'grade prep' or 'prep'), which is the year before the first grade. In the state of New South Wales , however, it is called kindergarten. At least in Victoria , kindergarten (distinct from grade prep) is a form of, and used interchangeably with, pre-school .

The first kindergarten was opened in 1837 in Bad Blankenburg , Germany by Friedrich Wilhelm August Fröbel .

The first kindergarten in the United States was established by Margarethe (Margaretta) Meyer Schurz (wife of activist/statesman Carl Schurz), in Watertown, Dodge County, Wisconsin .

Youngsters , usually aged 4-6 attend kindergarten to learn the finer points of meeting friends (and enemies), professional authority (in the form of a teacher), playtime , naptime , drawing , music , sometimes the basics of reading and writing , and various other activities. For children who previously have spent most of their time at home, kindergarten often serves the purpose of training them to be apart from their parents without anxiety.

The youngster continues to Grade 1 after kindergarten.

The actual word "kindergarten", as one may guess, translates to "children's garden". Many private businesses in the USA name their day-care businesses 'Kindergarten' or 'Kindergarden'. Kindergarten establishment (day-care) in Germany are for pre-school children of all ages and are often run by churches, city or town administrations. Kindergartens (German plural Kindergärten) in Germany are not a part of the actual school system, such as in the USA.

Kindergartens often last only for half a day (morning or afternoon), though in many locations there are full-day kindergartens.

3. ELEMENTARY SCHOOL

The elementary school consists of the first seven years of school, that is, grades 1 through 5 or 6, as well as kindergarten , a preliminary year of school before grade 1 (known in England and Wales as ' Reception '). Originally, however, it was studied after primary school in the 19th century, (some schools that have only the youngest students are called primary schools to this day). Also known as grammar school in the United States it is a major segment of compulsory education. Until the latter third of the 20th century, however, grammar school (or elementary school) was grades 1 through 8. After grammar school, one usually attends high school . (In many districts, grades 5-8 or 5-9 were called " middle school ", or further separated into " intermediate school ", "middle school", and/or " junior high school ".)

4. SECONDARY EDUCATION

Secondary education , or secondary school , is a period of education which follows directly after primary education (such as intermediate school or elementary school), and which may be followed by tertiary or "post-secondary" education. The purpose of a secondary education can be to prepare for either higher education or vocational training . The exact boundary between primary and secondary education varies from country to country and even within them, but is generally around the seventh to the tenth year of education, with middle school covering any gaps. Secondary education occurs mainly during the teenage years. Primary and secondary education together are sometimes (in particular, in Canada and the United States) referred to as " K-12 " education, (K is for kindergarten , 12 is for twelfth grade).

5. GRAMMAR SCHOOLS IN THE UNITED KINGDOM

In education in the United Kingdom , a grammar school is a secondary school attended by pupils aged 11 to 18 to which entry is controlled by means of an academically selective process consisting, largely or exclusively, of a written examination . After leaving a grammar school, as with any other secondary school, a student may go into further education at a college or university .

The examination is called the eleven plus . Partly due to the failure to fully implement the tri-partite system prescribed by the 1944 Education Act, the examination came to be seen as delivering a pass/fail result with the academically selected pupils passing and attending grammar schools and the remaining pupils being deemed to have failed and being consigned to the poorly funded schools euphemistically designated Secondary Modern Schools .

This arrangement proved politically unsustainable, and, over the period 1960 to 1975, non-selective ("comprehensive") education was instituted across a substantial majority of the country. The eleven plus examination had been championed by the educational psychologist Cyril Burt and the uncovering of his fraudulent research played a minor part in accelerating this process.

To understand grammar schools in the UK, some history is needed. After World War II , the government reorganised the secondary schools into two basic types. Secondary moderns were intended for children who would be going into a trade and concentrated on the basics plus practical skills; grammar schools were intended for children who would be going on to higher education and concentrated on the classics, science, etc. This system lasted until the 1960s, at which point changes in the political climate led to the general acceptance that this was a discriminatory system which was not getting the best out of all children. This was partly because some authorities tended to prioritise their budgets on the grammar schools, damaging the education prospects of children attending secondary moderns.

The decision was taken to switch to a single type of school designed to give every child a complete education. That is why this new type of school is called a comprehensive school. However the timetable of the changeover was left to the local authorities, some of whom were very resistant to the whole idea and thus dragged their feet for as long as possible. The result is that there is now a mixture. Most authorities run a proper comprehensive system, a few run essentially the old system of secondary moderns and grammar schools (except the secondary moderns are now called "comprehensives"). Some run comprehensive schools along side one or two remaining grammar schools.

The Labour government that came to power in 1997 instituted measures that allowed parents to force a local referendum on whether to abolish grammar schools in their area. The

form of this referendum depends on whether there is still a full two-tier system running, in which case all parents with children at primary schools in the area are eligible to vote, or whether there are only a few grammar schools in the area, in which case only those parents with children at primaries that regularly send children to the grammar school are eligible. By 2003, only a few referenda had taken place and none of these had delivered the requisite majority for conversion.

The debate over selective education has been widened by other measures introduced by the Labour government, allowing schools to select a portion of their intake by "aptitude" for a specific subject. There are many who think that selection allows children to receive the form of education best suited for their abilities, while "one-size-fits-all" comprehensives fail everybody equally. One of the greatest attacks on the comprehensive system is that it leads, in essence, to selection on the grounds of wealth as the good schools are generally located in areas with expensive housing, so children from poor areas are denied the possibility of attending them. Conversely, there are many who think that the selection of children at 11 divides them into "successes" and "failures" at that age, and is therefore wrong. The current Labour government, from the party that originally championed comprehensive education, appears to favour the first of these groups, and their introduction of local referenda on grammar schools has been attacked by opponents of selective education as an unworkable system designed to give the semblance of choice while maintaining the status quo.

Private schools generally give the same sort of education as grammar schools, but there are exceptions; Gordonstoun for one. In areas where the local authority provides a comprehensive education – which some parents don't like for various reasons – independent schools are particularly common.

6. HIGHER EDUCATION

Higher education is education provided by universities and other institutions that award academic degrees, such as university colleges, and liberal arts colleges .

Higher education includes both the teaching and the research activities of universities, and within the realm of teaching, it includes both the undergraduate level (sometimes referred to as tertiary education) and the graduate (or postgraduate) level (sometimes referred to as quaternary education). Higher education differs from other forms of post-secondary education such as vocational education . However, most professional education is included within higher education, and many postgraduate qualifications are strongly vocationally or professionally oriented, for example in disciplines such as law and medicine.

7. DEGREES AND GRADUATION

There is a three-level hierarchy of degrees (Bachelor , Master , Doctor) currently used in the United Kingdom.

A graduate student (also, grad student or grad in American English , postgraduate student or postgrad in British English) is an individual who has completed a bachelor's degree (B.A., B.S./B.Sc., or another flavor) and is pursuing further higher education , with the goal of achieving a master's degree (M.A., M.S./M.Sc., M.Ed., etc.) or doctorate (Ph.D., Ed.D., D.A., D.Sc., D.M.A., Th.D., etc.) In the United States, graduate education can also refer to those pursuing a post-master's Educational Specialist degree or post-master's Certificate of Advanced Study. The term usually does not refer to one in medical school and only occasionally refers to someone in law school or business school .

ADMISSION

Admission to do a research degree in the UK typically requires the sponsorship of a professor. Admission to do a master's degree (based on coursework) depends upon having an undergraduate degree, generally in a related subject.

LIFE

Postgraduate work at universities in the UK is very intense.

FUNDING

It is very difficult to obtain funding for postgraduate study in the UK. There are a few scholarships for master's courses, but these are rare and dependent on the course and class of undergraduate degree obtained. Most master's students are self-funded.

Funding is available for some Ph.D. courses. There is more funding available to those in the sciences than in other disciplines

8. COSTS

The costs for a normal education in the United Kingdom are as follows:

- Primary: No Charge
- Secondary: No Charge
- Further (Secondary) Education in either a sixth form or college: No Charge if under 19 in that particular academic year or on a low income.
- Higher / Tertiary Education (University): A tuition fee per year (varies from £1,000 to £9,000).

Primary and Secondary education can also be charged for, if a fee-paying (public) school is attended by the child in question.

9. PUBLIC SCHOOLS IN THE UK

A public school, in common British usage, is a school usually prestigious and historic, which charges fees, does not restrict admissions, and is financed by bodies other than the state, commonly as a private charitable trust. Often but not always they are boarding schools. Confusingly to a non-native English speaker a public school is actually a private school! In British usage, a government-run school (which would be called a 'public school' in other areas, such as the United States) is called a state school in the UK.

Many of the independent schools in the UK do not refer to themselves as public schools . Many choose to use the term independent school. In part this is due to a sense that some 'minor' public schools have many of the social associations and traditions of public schools but without the quality of teaching and extracurricular activities.

The term 'public' (first adopted by Eton) historically refers to the fact that the school was open to the paying public, as opposed to, a religious school that was only open to members of a certain church, and in contrast to private education at home (usually only practical for the very wealthy who could afford tutors).

Public schools played an important role in the development of the Victorian social elite. Under a number of forward-looking headmasters leading public schools developed a curriculum based heavily on classics and physical activity for boys and young men of the upper and upper middle classes. They were schools for the gentlemanly elite of Victorian politics, armed forces and colonial government. Often successful businessmen would send their sons to public school as a mark of participation in the elite (it was Martin Wiener's opposition to this tendency which inspired his 1981 polemic "English Culture and the

Decline of the Industrial Spirit: 1850-1980", which became a huge influence on the Thatcher government's opposition to old-school gentlemanly Toryism and, by default, a key reason for the recent upsurge of privately-educated pop singers in the UK).

Public schools often relied heavily on the maintenance of discipline by older boys, both to reduce staffing costs and as preparation for military or public service.

While under the best circumstances the Victorian public schools were superb examples of education, the reliance on corporal punishment and the prefect system could also make them awful. The classics-based curriculum was criticised for not providing skills in sciences or engineering.

The public school system influenced the school systems of the British empire to an extent. Recognisably 'public' schools can be found in many Commonwealth countries.

Today most public schools are highly selective on academic grounds, as well as financial grounds (ability to pay high fees) and social grounds (often a family connection to the school is very desirable in admissions).

Here are some of the web sites available for public schools in the UK.

- Bedford School
- Bradfield College
- Charterhouse
- Cheltenham College
- Clifton College
- Dover College
- Dulwich College
- Eton College
- Harrow School
- Lancing College
- Malvern College
- Oswestry School
- Radley College
- Repton School
- Rossall School
- Rugby School
- Shrewsbury School
- Tonbridge School
- Wellington College
- Westminster School

The Independent Schools Council (ISC) has a searchable list of independent/public schools in Britain. However, the head teachers of major British independent schools usually belong to the Headmasters' and Headmistresses' Conference (HMC), as distinct from the Secondary Heads' Association, and it is generally considered that any school that is a member of HMC is entitled to call itself a Public School.

Лекція №12

Тема лекції: «Досягнення Великобританії у галузі зварювання»

План лекції

1. Who speaks the best English?
2. How does the English language benefit you?
   2.1. Professional growth
   2.2. International networking
   2.3. Study abroad
   2.4. Expat life

Література:

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2. https://www.ranker.com/list/famous-male-welders/reference
3. https://en.wikipedia.org/wiki/The_Welding_Institute
4. https://www.premierwelding.co.uk/

Зміст лекції

Janko Peric

Janko Peric, is a former Canadian politician. Peric was the Liberal Party MP for the riding of Cambridge from 1993 to 2004. He was born Janko Perić in Orehovica near Bedekovčina, Croatia and was a welder Peric was defeated in the 2004 federal election by Gary Goodyear of the Conservative Party, with a margin of 224 votes. Peric tried to win his seat back in the 2006 federal election, but lost by almost 6000 votes.
Age: 70
Birthplace: Orehovica, Croatia, Croatia

2

Gordon Ramsay

Gordon James Ramsay Jr. OBE (born 8 November 1966) is a British chef, restaurateur, writer, television personality, food critic, and former footballer. Born in Johnstone, Scotland and raised in Stratford-upon-Avon, England, Ramsay's restaurants have been awarded 16 Michelin stars in total and currently hold a total of 7.[2][3][4] His signature restaurant, Restaurant Gordon Ramsay in Chelsea, London, has held three Michelin stars since 2001. First appearing on television in the UK in the late 1990s, by 2004 Ramsay had become one of the best-known and most influential chefs in British popular culture.[5][6]

As a reality television personality, Ramsay is known for his fiery temper, strict demeanour, and frequent use of expletives. He often makes blunt and controversial comments, including insults and wisecracks about contestants' cooking and restaurant facilities. He combines activities in the television, film, hospitality, and food industries and has promoted and hired various chefs who have apprenticed under his wing. Ramsay is known for presenting TV programmes about competitive cookery and food, such as the British series *Hell's Kitchen*, *The F Word*, and *Ramsay's Kitchen Nightmares*, the American series *MasterChef*, *MasterChef Junior*, and *Hotel Hell*, and the American versions of *Hell's Kitchen* and *Kitchen Nightmares*. In 2015, *Forbes* listed his

earnings at $60 million for the previous 12 months, and ranked him the 21st highest earning celebrity in the world.[7]

Ramsay was born on 8 November 1966[8] in Johnstone, Renfrewshire.[9] From the age of five, he was raised in Stratford-upon-Avon.[9] Ramsay is the second of four children. He has an older sister, Diane; a younger brother, Ronnie, who Ramsay revealed had been imprisoned for heroin possession as a juvenile;[10] and a younger sister, Yvonne. Ramsay's father, Gordon James Sr.,[11] was—at various times—a swimming pool manager, a welder, and a shopkeeper; his sister Yvonne and their mother, Helen (*née* Cosgrove),[11] have been nurses.[12]

Ramsay has described his early life as "hopelessly itinerant" and said his family moved constantly due to the aspirations and failures of his father, who was a sometimes violent alcoholic.[11] In 1976, they finally settled in Stratford-upon-Avon, where he grew up in the Bishopton area of the town.[10] In his autobiography, *Humble Pie*, he describes his early life as being marked by abuse and neglect from this "hard-drinking womaniser".[12][13] At the age of 16, Ramsay moved out of the family home and into a flat in Banbury.[14]

Age: 52

Birthplace: Johnstone, United Kingdom

Also Ranked

#3 on Celebrities Who Get A Way Worse Rep Than They Deserve

#86 on The Worst TV Talent Show Judges Of All Time

#1 on The Most Entertaining Celebrity Chefs

#1 on The Best Hot Ones Guests Ever

see more on Gordon Ramsay

3

Jan Marijnissen

Johannes Guillaume Christianus Andreas "Jan" Marijnissen (Jan Marijnissen (help·info)) (born 8 October 1952) is a retired Dutchpolitician of the Socialist Party (SP).

Marijnissen a welder by occupation, was selected as Leader of the Socialist Party after the death of Daan Monjé on 1 October 1986 and became Chairman of the Socialist Party on 20 May 1988. For the election of 1994 Marijnissen was the Lijsttrekker (top candidate) and won two seats in the House of Representatives, the first time the Socialist Party won representation in the States General of the Netherlands. Marijnissen was elected as a Member of the House of Representatives on 17 May 1994 and became the Parliamentary leader of the Socialist Party in the House of Representatives. For the elections of 1998 and 2002 Marijnissen again as Lijsttrekker won three and four seats respectively. For the election of 2006 Marijnissen for the fifth time as Lijsttrekker won sixteen seats and the Socialist Party became the third-largest party House of Representatives. On 20 June 2008 Marijnissen announced his retirement as Leader of the Socialist Party and Parliamentary leader of the Socialist Party in the House of Representatives citing health reasons. Marijnissen remained a Member of the House of Representatives until after the 2010 general election. Marijnissen stood down as Chairman of the Socialist Party on 28 November 2015.

He is the father of Lilian Marijnissen, the current Leader of the Socialist Party.

Age: 66

Birthplace: Oss, Netherlands

see more on Jan Marijnissen

The *Real Historical Villains* collectionThe Women Behind the Worst Men in History

4

Herbert Mayfield

Herbert Earl Mayfield was a bluegrass musician and a member of the Mayfield Brothers band of West Texas. Playing the mandolin and the guitar, Mayfield played alongside his brothers, Thomas Edd Mayfield and Arlie V. "Smokey" Mayfield. In the late 1940s, the Mayfield Brothers were warmup musicians in Lubbock and Amarillo for Tennessee Ernie Ford, Maddox Brothers and Rose, Hank Snow, and other Country groups. After World War II, the trio went on the circuit playing Bluegrass until Edd left the band to join Bill Monroe and the Bluegrass Boys. For much of his adult life, Mayfield was a welder for cattle feedlots. He and his wife supported student scholarships for those pursuing the study of Bluegrass music at South Plains College in Levelland west of Lubbock. South Plains honored Herbert and Smokey Mayfield in a special ceremony in 1989 as pioneers of Bluegrass music.[1] Susan Dailey, the recipient of a Mayfield scholarship in 1993, recalled Mayfield as "an inspiration to me as a mandolin student.... The stories of his early musical years on the [Green Valley] ranch also fascinated me as a musician and as a visual artist.... I feel fortunate to have been acquainted with Herb. He was a wonderful man.... "[

Age: Dec. at 88 (1920-2008)
Birthplace: Erick, Oklahoma, United States of America

5

Leonard Oldman

Leonard Oldman was a welder, sailor and the father of Gary Oldman. *...more on Wikipedia*
Age: Dec. at 64 (1921-1985)
The *Real Historical Villains* collectionPhotos Of Horrible People From History Being Their Horrible Selves

6

Esai Morales

Esai Morales, Sr. is a welder. *...more on Wikipedia*

7

Barry Arterton

Barry Arterton is the father of Gemma Arterton. *...more on Wikipedia*

Лекція Практичне заняття №13-14

Тема лекції: «Лондон – столиця Великобританії. Історія та сучасність»

План лекції

1. London – the capital of Great Britain.
2. The Romans.
3. William the conqueror
4. The grate fire of London
5. The places to visit
6. Some interesting facts

Література:

1. https://docbaza.ru/topic/britain/108.html
2. http://www.learnenglishbest.com/london-is-the-capital-great-britain.html
3. https://www.denverlibrary.org/blog/england-great-britain-united-kingdom-whats-difference

Зміст лекції

1. LONDON - THE CAPITAL OF GREAT BRITAIN.

London is the biggest city in Britain and one of the biggest in the world. More than eight million people live and work there. London is one of the most important cities in the world. It is the centre for business and for tourism.

In London you can find some of the best theatres, cinemas and museums. There are many beautiful old churches in London.

There are about 10 thousand streets in London. Most of the streets are not very wide. There are a lot of shops in London. The main shopping centre is Oxford Street. You can buy nearly everything here. People from all over the world do shopping in Oxford Street.

You can find many old and new beautiful parks in the city. The largest park in London is Hyde Park. It is one of the most popular places of Londoners on hot summer days. There are many other pleasant parks and green squares there too.

2. THE ROMANS.

The Romans came to the island Great Britain long, long time ago. They built a town on the River Thames. The called the town Londinium. The place for the town was very good. Soon the Romans built a bridge over the River Thames.

Londinium got bigger and bigger. The Romans built houses, palaces, roads, bridges. But in 410 the Roman legions were withdrawn from Great Britain, as the Goths were at the gates of Rome and the Romans rushed to defend their Empire. After them, Anglo-Saxon tribes came to Great Britain.

The river Thames has always been part of London's history. In Roman times Londinium was a small town with the Thames in the centre. Now London is a very large city but the river Thames is still in the centre of London as the city has grown in both sides of it.

Until 1749, there was only one bridge over the river: London Bridge. The old London Bridge looked very strange. There were houses and shops on it.

Unfortunately, we cannot see old London Bridge in London now: in the hard times, when it was clear that London needed new bridges but there was no money, government decided:to sell the Old Bridge to some rich American. Now it is in America but there is no river under it - only a street.

In the 19-th century there were already many new bridges in London. Now there are twenty seven bridges over the Thames.

London is in fact three cities: the City of London, the East End and the West End.

There are 27 bridges over the Thames in London and 8 tunnels under the river.

London is 46 kilometres from north to south and 58 kilometres from east to west.

London has got more than 8 million people and that's 13% of Britain's population.

3. WILLIAM THE CONQUEROR.

At the beginning of the 11-th century England was already a big country and London was a very important city.

In 1066 William from Normandy came with his people to England. They were French. William thought that he had right to become King of England. After the battle at Hastings he got the name of William the Conqueror and became King of England. The King lived in London. A lot of his people lived in London too. But William was afraid of the English, of Londoners and he built the White Tower to live in it. It was the beginning of the Tower of London and now it is one of the most important and beautiful buildings in it.

All Kings and Queens of England lived in London. It became the biggest city in the country. By 1600 there were more than 200,000 people in London.

4. THE GRATE FIRE OF LONDON.

In those days people usually built houses of wood, and they were very close to one another. Sometimes there were fires in the city, but they were usually very small. Then came 1666, the year of the Great Fire of London.

On Saturday, on the second of September 1666 there was a strong wind *from the river* and a big fire began. You should know that the summer of that year was unusually dry and hot in London, and wooden houses became very dry too, and the wind was very strong and blew from the river. All these caused a very big fire. It started in the house of the king's baker, near London Bridge.

The baker's wife woke up in the middle of the night because the house was on fire. Soon the next house started burning and than the next and the next: Houses burnt like matches:

London's burning, London's burning.
Fetch the engines. Fetch the engines.
Fire, fire! Fire, fire!
Pour on water, pour on water.

The fire burnt until Thursday. The fire burnt for four days and destroyed 80% of the city. More than 250,000 people didn't have home any more. But, in spite of everything, not anybody died in that fire!

One more very important thing. In 1665 plague broke in England. It was called the Great Plague. It covered all the country. The Plague crawled from town to town, from village to village, killing people and not knowing any mercy. People were in terror. They left their

houses trying to run away from Black Death. It came into London. 75,000 Londoners died from the plague. The Great Fire ruined crooked streets, but The Great Fire put the end to The Great Plague.

After the Great Fire people built a new city. The city was becoming larger and larger. By 1830 there were more than one and a half million people in London. The railways came and London was becoming richer and richer. New houses of stone or brick, not wood, were built. Streets became wider and straight. But the city was still rather dirty.

5. THE PLACES TO VISIT.

London is the capital of England. It is its political, business and cultural centre. The heart of London is the City. It is the oldest part of London. Many people work in the City but very few live here. There are many banks and offices here. You can visit some interesting places in the City or near it.

One of them is the Tower of London. In different times of the history of London the Tower was a fortress, a palace, a prison and even the King's Zoo. A lot of people lost their heads here.

Now it is the museum. You can see a lot of interesting things in the halls of the White Tower. The Crown Jewels are kept at it. Its square walls are white and very tall.

William the Conqueror built it in the 11-th century. There are always black ravens in the Tower of London. They appeared there when the Tower was the King's prison - those who were its prisoners never got freedom: they were executed or died themselves, and their bodies were thrown down the walls of the Tower. They became food for ravens. Still then ravens have lived there.

One of the old English legends says that London can be the capital of the country, rich and great until 12 black ravens live in the Tower. Each has its name and some special people, the keepers of ravens, carefully look after them. If one of the birds dies, another younger raven takes its place. Londoners believe this legend and every time they come to the Tower they count the ravens and never forget to bring food for them. The keepers cut the birds' wings as they are afraid that they may fly away.

One of the greatest English churches, St. Paul's Cathedral, is not far from the Tower of London. Old St. Paul's Cathedral was made of wood and burnt in the Great Fire of London. The famous architect Sir Christopher Wren rebuilt it in the 17-th century. He started in 1675. It took him 35 years. It is a very beautiful building with many tall columns and towers. In ne of its towers there is one of the largest bells in the world.

The centre of London is Trafalgar Square. Some people say that it is the most beautiful place in London. Tastes differ! In the middle of the square stands a tall column. It is a monument to Admiral Nelson. Four bronze lions look at the square from the monument. There are 2 splendid fountains in the square. They are in front of the National Gallery which is one of the best picture galleries in the world.

The political centre of London is Westminster. It is the part of London where there are a lot of offices. If you go down Whitehall from Trafalgar Square on the right you will see a small street - Downing Street. Here at number 10 the British Prime Minister lives. Whitehall is a wide street leading to Parliament Square. This square is very large.

On the left there is a long grey building with towers which are the Houses of Parliament. This building is really Westminster Palace. The large clock in one of the towers is Big Ben - the clock and the bell of the clock tower of the Houses of Parliament. You can hear the sound of Big Ben every hour in London. The clock and the bell got their names after

Sir Benjamin Hall who was in charge of building it. He was a tall man, whose nickname was Big Ben. So people know the clock as Big Ben.

The Thames is behind the Houses of Parliament and the bridge across it is Westminster Bridge.

On the other side of Parliament Square is Westminster Abbey. It is very beautiful and very famous. It is also very old. It is more than 900 years old. It is built in gothic style. There are a lot of monuments and statues there. Many English kings and queens are buried here. Westminster Abbey is famous for the Poet's Corner where great English poets and writers are also buried.

The Queen of England lives in Buckingham Palace. It is a wonderful large building with a golden monument in front of it. It is the Queen Victoria Memorial.

All these interesting places are quite near one another. It takes only 20 minutes to get from Buckingham Palace to Trafalgar Square.

Of course, there are so many other places of interest to see and visit in London.

6. SOME INTERESTING FACTS.

Bloomsbury Square is one of the oldest in London. It is more than 300 years old. It is the literary part of the city. A lot of writers and critics live there.

The British Museum is not far from Bloomsbury Square and the square is famous for the Museum. The British Museum is very old. It was founded in 1753. It is in Great Russell Street. The British Museum has a large Reading Hall. A lot of famous people worked there. The Library of the Museum has one of the best collections of books and manuscripts in the world.

One of the best and famous London cinemas is the "Odeon".

One of the oldest churches in London is St. Paul's Cathedral.

One of the most famous London theatres, the Royal Opera House or Covent Garden, is : in the centre of the vegetable market.

Piccadilly Circus is the centre of night life in the West End. This is one of the most popular meeting places of London.

London buses are of 2 kinds: the double-decker and the single-decker. But London buses are always red. Double-deckers have seats for 65 people. Only 5 people are allowed to stand when the seats are full.

London is growing and developing. Some modern buildings and interesting places appeared. The most remarkable are: the Cucumber of London and the London Eye.

Лекція Практичне заняття №15-16

Тема лекції: «Визначні пам'ятки Лондона»

План лекції

1. The best sightseeing
2. Where to Stay in London for Sightseeing
3. Tips and Tours: How to Make the Most of Your Visit to London

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
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Зміст лекції

1. **The best sightseeing**

Buckingham Palace and the Changing of the Guard

One of Britain's most iconic buildings, Buckingham Palace is also the scene of London's most popular display of pomp and circumstance, the Changing of the Guard. Drawing crowds at 11:30am in every season, this colorful and free display of precision marching and music also takes place at **St. James's Palace** where you can follow the band along The Mall as they march between sites.

Buckingham Palace was built in 1837 and has been the London residence of the Royal Family since Queen Victoria's accession. If you're wondering whether the Queen is in, look at the flagpole atop the building: if the royal standard is flying day and night, she's at home. On special state occasions, she and members of the Royal Family may even emerge on the central balcony.

When she's away at her summer palace in Scotland, visitors can purchase tickets for tours of the State Rooms, the Queen's Gallery, and the Royal Mews. One of the best ways to

tour the palace, see the Changing of the Guard, and experience a traditional afternoon tea, is on a 4.5-hour Buckingham Palace Tour Including Changing of the Guard Ceremony and Afternoon Tea. This tour is a very efficient way of seeing the highlights in a short period of time, and having a knowledgeable guide to explain the history makes the whole experience that much more enjoyable and relevant for first time visitors.

The Tower of London and Tower Bridge

From prison to palace, treasure vault to private zoo, the magnificent Tower of London has fulfilled many different roles down the centuries. One of Britain's most iconic structures, this spectacular World Heritage Site offers hours of fascination for visitors curious about the country's rich history - after all, so much of it happened here. Inside the massive White Tower, built in 1078 by William the Conqueror, is the 17th-century Line of Kings with its remarkable displays of royal armaments and armor. Other highlights include the famous **Crown Jewels** exhibition, the Beefeaters, the Royal Mint, and gruesome exhibits about the executions that took place on the grounds. The adjacent Tower Bridge, its two huge towers rising 200 feet above the River Thames, is one of London's best-known landmarks.

For the best use of your time, especially during the busy summer season, purchase the Tower of London Entrance Ticket Including Crown Jewels and Beefeater Tour in advance, to bypass the ticket office lines. This ticket guarantees the lowest price, helps avoid the crowds, and saves time and hassle.

The British Museum

Displaying one of the world's finest collections of antiquities, the British Museum contains more than 13 million artifacts from the ancient world. With priceless objects from Assyria, Babylonia, China, Europe, and elsewhere, it's hard to know where to begin. But most tourists head first for the museum's most famous exhibits: the controversial **Elgin Marbles** from the Parthenon, the **Rosetta Stone**, the colossal bust of Ramesses II, the Egyptian mummies, and the spectacular hoard of 4th-century Roman silver known as the **Mildenhall Treasure**.

Big Ben and Parliament

Nothing says "London" more emphatically than the 318-foot tower housing the giant clock and its resounding bell known as Big Ben. It's as iconic a landmark as **Tower Bridge**. The tolling of Big Ben is known throughout the world as the time signal of BBC radio. Below it, stretching along the Thames, are the **Houses of Parliament**, seat of Britain's government for many centuries and once the site of the royal **Westminster Palace** occupied by William the Conqueror. Tours of the parliament buildings offer a unique chance to see real-time debates and lively political discussions. From Parliament Square, **Whitehall** is lined by so many government buildings that its name has become synonymous with the British government.

National Gallery

Ranking among the top art museums in the world, London's National Gallery represents an almost complete survey of European painting from 1260 until 1920. The museum's greatest strengths are in its collections of Dutch Masters and Italian Schools of the 15th and 16th centuries. Among its highlights are a cartoon (preliminary sketch) of the Madonna and Child by Leonardo da Vinci, Michelangelo's *The Entombment*, Botticelli's *Venus and Mars*, van Gogh's *Sunflowers*, and *The Water-Lily Pond* by Monet.

The Victoria and Albert Museum

The Victoria and Albert Museum (aka the V&A) is part of a South Kensington-based group of museums that includes the Natural History Museum and Science Museum. Founded in 1852, the V&A covers close to 13 acres and contains 145 galleries spanning some 5,000 years of art and related artifacts. Exhibits include ceramics and glass, textiles and costumes, silver and jewelry, ironwork, sculpture, prints, and photos.

Piccadilly Circus and Trafalgar Square

Two of London's best-known tourist spots, these famous squares lie not far apart and mark the gateways to **Soho**, London's lively theater and entertainment district. Trafalgar Square was built to commemorate Lord Horatio Nelson's victory over the French and Spanish at Trafalgar in 1805. **Nelson's Column**, a 183-foot granite monument, overlooks the square's fountains and bronze reliefs, which were cast from French cannons. Admiralty Arch, **St. Martin-in-the-Fields**, and the National Gallery surround the square. Piccadilly Circus marks the irregular intersection of several busy streets - Piccadilly, Regent, Haymarket, and Shaftesbury Avenue - and overlooking this somewhat untidy snarl of traffic stands London's best-known sculpture, the winged Eros delicately balanced on one foot, bow poised. "It's like Piccadilly Circus" is a common expression describing a busy and confusing scene.

The Two Tates: Tate Britain and Tate Modern

Once collectively known as the Tate Gallery, London's two Tate galleries - Tate Britain and Tate Modern - comprise one of the world's most important art collections. Opened in 1897 as the basis of a national collection of significant British art, the gallery continued to make acquisitions and needed more space to properly display its collections. The end result was the establishment of Tate Britain, in **Millbank** on the north side of the Thames, as home to its permanent collection of historic British paintings. A superbly transformed power station across the Thames became home to the modern art collections.

Art lovers can spend a whole day viewing both sites, conveniently connected by high-speed ferry.

Westminster Abbey

Another location with a long association with British royalty, Westminster Abbey stands on a site that's been associated with Christianity since the early 7th century. Officially known as the Collegiate Church of St. Peter in Westminster, Westminster Abbey was founded by Edward the Confessor in 1065 as his place of interment. From his burial in 1066 until that of George II almost 700 years later, most sovereigns were not only crowned here but they were buried here, too. More recently, it's become famous as the preferred location for Royal Weddings.

Churchill's War Rooms

Among the most fascinating and evocative of London's historic sites is the perfectly preserved nerve-center from which Prime Minister Winston Churchill directed the British military campaigns and the defense of his homeland throughout World War II. Their Spartan simplicity and cramped conditions underline the desperate position of England as the Nazi grip tightened across Europe. You'll see the tiny cubicle where Churchill slept and the improvised radio studio where he broadcast his famous wartime speeches. Simple details, such as Clementine Churchill's knitting wool marking the front lines on a map of Europe, bring the era to life as no museum could possibly do.

Hyde Park

Covering 350 acres, Hyde Park is London's largest open space and has been a destination for sightseers since 1635. One of the park's highlights is the Serpentine, an 18th-century man-made lake popular for boating and swimming. Hyde Park is also where you'll find **Speakers' Corner**, a traditional forum for free speech (and heckling). Another Hyde Park landmark is Apsley House, former home of the first Duke of Wellington and purchased after his famous victory at Waterloo. Now a museum, it houses Wellington's magnificent collections of paintings, including Velázquez's *The Waterseller of Seville*, along with gifts presented by grateful European kings and emperors. England's greatest hero is also commemorated at the Wellington Arch.

St. Paul's Cathedral

The largest and most famous of London's many churches - and undoubtedly one of the most spectacular cathedral's in the world - St. Paul's Cathedral sits atop the site of a Roman temple. The previous church structure was destroyed in the Great Fire of 1666, and Sir Christopher Wren designed the rebuild**.** Today, the twin Baroque towers and magnificent 365-foot dome of St. Paul's are a masterpiece of English architecture. If you're up to it, be sure to walk the stairs with their spectacular views of the dome's interior, including the Whispering Gallery.

Covent Garden

The market halls of Covent Garden are only the beginning of the neighborhood, which encompasses the shops and restaurants of Long Acre and other adjacent streets, those of Neal's Yard and Seven Dials, as well as the Central Square with its street performers. The halls and arcades of **Covent Garden Market** are lined with specialty shops and kiosks selling everything from fine handcrafts to tacky souvenirs. Housed in the former flower market, you'll find the **London Transport Museum**, filled with historic buses, trolleys, and trams. This area is also where you'll find the **Royal Opera House**.

The London Eye

Built to mark London's millennium celebrations in 2000, the London Eye is Europe's largest observation wheel. Its individual glass capsules offer the most spectacular views of the city as you embark on a circular tour rising 443 feet above the Thames. The journey lasts 30 minutes, often quicker than the time spent lining up for your turn. If you can, reserve your time in advance. The best option is to skip the line completely with a London Eye: Skip-the-Line Ticket. This advance ticket allows you to take a flight at any time on the day you plan to visit.

Hampton Court Palace

Another great Thames-side attraction, Hampton Court is one of Europe's most famous palaces. Its Great Hall dates from Henry VIII's time (two of his six wives supposedly haunt the palace), and it's where **Elizabeth I learned of the defeat of the Spanish Armada**. Other interesting features include the Clock Court with its fascinating astronomical clock dating from 1540, the State Apartments with their Haunted Gallery, the Chapel, the King's Apartments, and the Tudor tennis court. The gardens are also worth visiting - especially in mid-May when in full bloom - and include the Privy Garden, the Pond Garden, the Elizabethan Knot Garden, the Broad Walk, an area known as the Wilderness, and of course, the palace's famous **Maze**.

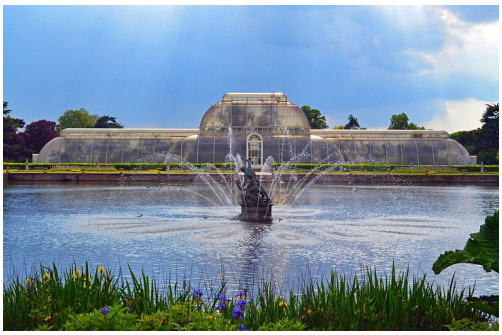
Greenwich and Docklands

For centuries the hub of Britain's naval power, Greenwich is best known to tourists as the home of **Cutty Sark**, the last of the 19th-century tea clippers that sailed between Britain and China. The ship is adjacent to the **Discover Greenwich Visitor Centre,**with its exhibits

showcasing more than 500 years of maritime history, and the Palladian mansion known as **Queen's House**. The impressive collections of the **National Maritime Museum**, the largest of its kind in the world, illustrate the history of the Royal Navy. One of the most unusual things to do in London is standing with one foot in each hemisphere, astride the **Meridian Line** in the Meridian Building in the Royal Observatory.

The revitalized Docklands across the river has been transformed into an international place of business and recreation, filled with some of London's smartest new restaurants. The excellent **Museum of London Docklands**, in the old Georgian warehouses, brings to life the river, port, and its people from Roman times to the present through hands-on displays that are especially interesting for children.

Kew Gardens



Kew Gardens - officially called the Royal Botanic Gardens - is situated in southwest London on the south bank of the Thames and is a wonderful place to spend time as you enjoy the numerous plants grown amidst its 300-acres. Laid out in 1759, the gardens became government property in 1841. In 1897 Queen Victoria added Queen's Cottage and the adjoining woodland. A variety of tours are available free with admission, and many musical and cultural events are held here throughout the year.

2. Where to Stay in London for Sightseeing

London's top tourist attractions are spread out over several different areas of the city. If you want to spend time sightseeing, it's a good idea to base yourself in a central location and use the city's excellent public transport system to travel between the sites. Here are some **highly-rated hotels in central London:**

- **Luxury Accommodation:** When it comes to posh hotels, the grande dames still grace the list of London's best. Pampering guests for more than a century are The Goring, a stone's throw from Buckingham Palace, while The Langham, in the heart of the West End, has played host to royals and celebrities for more than 150 years. A few steps from Trafalgar Square is the Corinthia Hotel London, with a rooftop terrace and luxurious afternoon teas. The Ritz London, also known for teas, is handy to the posh shops of Mayfair.
- **Mid-Range Accommodation:** The Fielding Hotel, a popular boutique property, places you right near Covent Garden, one of the city's most touristy areas. Handy for those arriving by train from Heathrow or Gatwick airports, The Grosvenor Hotel is right over Victoria Station. About a 15-minute stroll from Covent Garden, Bloomsbury was once London's literary hub and is now home to one of the city's top attractions, the British Museum, as well as highly-rated mid-range hotels such as The Montague on the Gardens and The Bloomsbury Hotel London. Both are also a short stroll from Oxford Street shopping.
- **Budget Accommodation:** If you're watching your wallet, the Premier Inn London Kensington is an affordable option minutes from museums and Earls Court tube

station. You can also head north and try The Alhambra Hotel or Jesmond Dene Hotel, both near busy King's Cross tube station, a major transport hub.

3. **Tips and Tours: How to Make the Most of Your Visit to London**

- **Seeing the Sights**. One of the best ways to see the sights of London is on a traditional, double-decker Hop-On Hop-Off London Sightseeing Tour. This has been the classic sightseeing tour for years, and it's popular for a reason: it's easy, convenient, informative, and ensures you see the most important attractions. Tickets are flexible, with open dates, and are valid for a 24-hour period. Even if you are in London for several days, this is a great way to spend a day getting oriented, especially for first-time visitors to the city.
- **Day Trips**. Beyond the city, there are some excellent sights that can be easily visited on a day trip tour from London. The Stonehenge, Windsor Castle, and Bath Day Trip from London is an 11-hour guided trip that takes visitors to these must-see destinations. It's a great way to see the surroundings without the hassle of driving, navigating, and parking.
- **Harry Potter Experience.** Fans of Harry Potter will definitely want to take the Warner Brother's Studio Tour - The Making of Harry Potter for a behind-the-scenes look at the creation of the movie and a walk through the incredible sets where the film was made. Visitors can explore the site on their own, see the costumes and props, wander through the Great Hall, and learn about the whole experience of filming. The tour includes transportation to and from the studios from central London and an entrance ticket

Лекція №17

Тема лекції: «Національні традиції Англії»

План лекції

1. Guy Fawkes Night
2. Tar Barrel Rolling, Ottery St Mary
3. The Lymm Duck Race
4. Morris dancing
5. Halloween
6. Cheese Rolling, Cooper's Hill, Gloucestershire
7. Egremont Crab Fair – Gurning Competition
8. The World Stone Skimming Championships, Scotland
9. Easter Egg hunts and the Easter Bunny
10. World Nettle Eating Championship
11. World Conker Championships
12. May Day in Oxford

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
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Зміст лекції

1. Guy Fawkes Night

Fireworks are a popular part of Guy Fawkes night celebrations.

"Remember, remember, the fifth of November,
Gunpowder, treason and plot;
I see no reason
Why gunpowder treason
Should ever be forgot."

This little ditty marks the night of the year that could be said to best encapsulate nationwide British eccentricity: Guy Fawkes Night. Celebrated on the 5th of November each year, Guy Fawkes Night is also known as Bonfire Night, and it commemorates the night in 1605 when Guy Fawkes and his co-conspirators planned to carry out the infamous Gunpowder Plot: a scheme to blow up the House of Lords. Fawkes was caught in the nick of time, and the country lit bonfires to celebrate the fact that King James had survived this dastardly assassination attempt. It became a national holiday enforced by law not long after, and one of the traditions that sprung up (nobody really knows when) was the burning of an

effigy – a ‘Guy’ – on the bonfire. Children would make them and then parade them around their villages asking for a ‘penny for the guy’ (a custom that has now largely died out), and the guy would then go up in flames with the lighting of the bonfire after nightfall. These days, Bonfire Night parties happen all over the country both on Guy Fawkes Night itself and on the weekends either side of it. Firework displays have become the most common way of celebrating this occasion, though bonfires also remain popular.

2. Tar Barrel Rolling, Ottery St Mary

A flaming tar barrel being carried through a crowd.

The town of Ottery St Mary in Devon has its own take on Guy Fawkes Night celebrations, and they’re pretty hazardous. The term ‘tar barrel rolling’ doesn’t really provide an adequate explanation of what it involves, and makes it sound tamer than it is. What really happens is that flaming tar barrels are carried through the streets on the shoulders of those brave enough to take part (they’re known as “Barrel Rollers”, many of whom have passed down the honour of taking part through many generations), and the residents of Ottery St Mary are the only people in the country to think that this is a good idea. It’s not known exactly when the custom started, but it’s thought to be hundreds of years old and probably started around the time of the Gunpowder Plot. It fits in with a wider West Country tradition of torchlit processions, and, as if seventeen flaming barrels wasn’t enough, they also have a huge bonfire – the guy for which has been made by the same family since 1958.

3. The Lymm Duck Race

The Duck Race is the highlight of the year in the village of Lymm (near Warrington, Cheshire): a thousand yellow rubber ducks are launched into the water of Lymm Dingle (we’re not quite sure why it has this unusual name), racing each other in a gripping battle for the title of Lymm Duck Race winner. It’s all for charity, but the three lucky people whose ducks pass the finish line first will win cash prizes of up to £100.

4. Morris dancing

The name ‘Morris dance’ derives from ‘Moorish dance’, suggesting it was seen as exotic.

If there’s one tradition in the UK that harks back to ‘the olden days’ more than any other, it’s definitely Morris dancing. No village show or folk festival in the UK is complete without the presence of a band of Morris dancers. Picture a group of men or women, dressed in old-fashioned clothes, with bells jingling on their legs, holding sticks or handkerchiefs, and dancing rhythmically to simple, traditional music played on a fiddle or accordion, and you get the idea. In fact, that description probably doesn’t do it justice, so view this YouTube video for an example. Though the earliest known written mention of Morris dancing dates to 1448 (the record of a payment of seven shillings made to a group of Morris dancers by the Goldsmith’s Company, in London), it may have started much earlier than this. These days, six main styles of Morris dancing survive, and they’re named after the regions in which they originate, such as Border Morris and Cotswold Morris. It’s English historical eccentricity at its finest.

5. Halloween

There has been so much exchange of British and US Halloween traditions that it’s hard to say which are original and which have been imported.

Although America now embraces Halloween with even more enthusiasm than we do, this annual occasion has its roots in Celtic harvest festivals. Christianised as All Hallows' Eve, it's widely thought to be linked with the Pagan festival of Samhain, which marked the end of the harvest and the beginning of winter. These days, it's known as Halloween (or Hallowe'en, but nobody uses the apostrophe anymore), and it's celebrated most commonly with the carving of pumpkins into scary faces, traditionally seen as spirits and goblins. These carved pumpkins are known as jack-o'-lanterns, and people put candles inside them so that they glow menacingly. People put these on their windowsills or at the end of their drives on Halloween night, a practice said to have originated to ward off evil spirits from the home.

Another common Halloween custom is 'trick or treating' – originally known as 'guising' – in which children dress up as witches, ghosts, vampires and such like, and knock on neighbours' doors shouting "trick or treat", in the hope of being given chocolate (the threat of a 'trick' – some form of mischief – is rarely carried out). Halloween is a night on which people love getting dressed up and also getting into the mood for scaring themselves, perhaps by telling ghost stories or watching horror films.

6. Cheese Rolling, Cooper's Hill, Gloucestershire

Aside from the traditional Double Gloucester, this year the Dutch city of Gouda – twinned with Gloucester – donated a cheese for the competition.

Nobody is quite sure when the tradition of cheese rolling at Cooper's Hill in Gloucestershire started, but it's definitely hundreds of years old, possibly even pre-Roman, and in its present form it is thought to have been going since the fifteenth century. A cheese is rolled down the hill, and competitors chase after it, trying to keep up with it and, theoretically, catch it. This inevitably leads to competitors tumbling over each other and sustaining injuries of one sort or another. Traditionally, a 9lb Double Gloucester was used. In recent years, health and safety fears have put the event in jeopardy, but the locals are so proud of their tradition that they have ensured that the event continues to go ahead.

7. Egremont Crab Fair – Gurning Competition

You'd be forgiven for visualising clawed crustaceans at the words "Crab Festival", but this name actually refers to crab apples. The Egremont Crab Fair in Cumbria dates from 1267, when King Henry III granted the fair a Royal Charter; it's one of the oldest fairs of any kind in the world. Its programme features a number of weird and wonderful English events – notably the Parade of the Apple Cart, which kicks off the proceedings – but topping them all is the world-famous Gurning competition. A common rural tradition, gurning competitions involve contestants attempting to distort their faces into the most revolting, bizarre expressions they possibly can. It's a far cry from the natural beauty for which the Lake District region, in which this festival is located, is better known!

8. The World Stone Skimming Championships, Scotland

The beautiful island of Easdale, where the stone skimming championships take place.

Slightly more worthwhile than gurning – but not by much – stone skimming involves throwing a flat stone in such a way that it bounces repeatedly off the surface of a body of water. Nowhere is this concept more widely embraced than on the Hebridean island of Easdale, home to the World Stone Skimming Championships. Started in 1983, the championships see 350 contestants using specially selected throwing stones made of Easdale

slate, with the prize going to the person who can get their stone the furthest (with a minimum of three bounces).

9. Easter Egg hunts and the Easter Bunny

Easter in the UK is celebrated with the setting of Easter egg hunts, in which chocolate eggs are hidden, usually around the garden but sometimes in the house, for children to find. Children are led to believe that the eggs have been hidden by the Easter Bunny, a tradition that stems from at least the seventeenth century. One theory as to the origin of the Easter Bunny is that in the spring, around Easter time, hares behave oddly, leaping about in the fields and fighting, due to their mating rituals (hence the origin of the phrase "mad as a March hare"); at around the same time, lapwings lay their eggs in farmers' fields. It's thought that rural folk may have believed that the eggs were laid by the hares, which is where the idea of the Easter Bunny may have originated. The symbol of the egg was already a powerful one, representing the idea of rebirth; the Easter egg is meant to symbolise the empty tomb of Jesus, a reminder that he rose from the dead. For most, though, Easter has become simply an excuse to eat lots of chocolate.

10. World Nettle Eating Championship

Young nettles can be eaten in soup or turned into tea; mature nettles are rather less enjoyable to eat!

Held in June each year, the Nettle Eating Contest takes place at the Bottle Inn in Marsham, Dorset. It was started off in the 1980s by two farmers, and was originally a competition to see whose stinging nettles were the longest. One of the farmers brought in a nettle measuring 15ft, and boasted that if anybody had a longer one, he'd eat his. You can probably guess what happened next; and thus, the World Nettle Eating Championship was born. Given that nettles have a sharp sting, we can't imagine that the competition is much fun – but people come from as far afield as Canada to take part, and the 2010 winner managed to eat a staggering 74ft of nettles. Rather him than us…

11. World Conker Championships

Conkers just waiting for a match.

From one bizarre set of championships to another: the World Conker Championships are held each October in Ashton, Northamptonshire. Started in 1965, but celebrating a practice much older than this (the first written mention of this traditional game is from 1820), the Conker Championships began after a group of fishermen decided to have a conker competition instead of going fishing, because the weather was too bad. Conkers are the nuts of the horse chestnut tree, beautiful gleaming brown things that fall from the tree and emerge from their spiny green case in the autumn. When hardened and attached to strings, they can be smashed with sufficient force from one's opponent's conker, which is the objective of the Conker Championships. Contestants compete for the title of "King Conker" and "Queen Conker", and the spectacle draws in thousands of visitors each year.

12. May Day in Oxford

May morning celebrations in Oxford.

We end with the Oxford tradition of May Day festivities. On May Morning (1 May), people get up very early (or are still out from partying the night before) to hear the choir of Magdalen College, Oxford singing the Eucharist from the top of the Magdalen College tower

at 6am. The bridge into town is closed, and in previous years revellers have jumped from the bridge into the river (a practice now banned for health and safety reasons). Also present are the mandatory Morris dancers and other musicians to entertain the gathered masses. This tradition has been going for at least 500 years. Because balls are often held at the university colleges the night before, some students may be present still in their ball gowns or white tie from the previous night; the May Morning celebrations are the perfect excuse to keep the frivolity going all night.

There were countless other bizarre English traditions and events we could have mentioned, but this list should have given you an insight into the kind of weirdness we like to celebrate here in the UK. Who knows what delightful eccentricity you'll come across if you join us here in Oxford this summer…

Практичне заняття №18

Тема лекції: «Англомовні країни»

План лекції

1. A short history
2. Which countries speak English best?
3. English Speaking European Countries
4. International Work
5. Top English Speaking Countries
6. Countries In Europe That Speak English As An OFFICIAL LANGUAGE
7. Conclusion

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
2. https://en.wikipedia.org/wiki/English-speaking_world
3. https://www.native-english.ru/topics/english-speaking-countries
4. https://www.myenglishpages.com/site_php_files/reading-english-speaking-countries.php
5. https://www.europelanguagejobs.com/blog/English-Speaking-Countries-Europe

Зміст лекції

1. A short history

You won´t have to go far to find an English speaking country in Europe as there are over **370 million English speakers** out of about 450 million EU residents! Being one of the most important languages of business throughout the world makes English speaking jobs very easy to encounter!

We all know at least one person who when going on holiday to Spain learns the phrase ´Hola, una cerveza por favor´ and felt that would be enough to get by and the truth is, most of the time it is! Spain, much like many other European countries, speaks English as a second language and has over 11 million English speaking residents.

According to popular language learning app Duolingo, in 2017 15-30% of language learners on the app of 200 million people were learning a language in order to prepare for international travel! But if you don´t currently speak another language, should you be worried?

The fact that there are so many English speaking countries in Europe gives English speakers some time and space to learn the local language at their leisure and in some cases (As I know from a lot of my expat friends) some never learn the local language simply because they don´t need to!

2. **Which countries speak English best?**

Ok so now that we know that Europe has an abundance of English speakers, where are they? Which countries are best for me?

One of the most popular English speaking jobs in Europe and the way many expats get their **first job abroad is to <u>teach English as a second language</u>**. A qualification is usually necessary but takes very little time, usually around a month depending who you choose to study with and then the salary is usually very good.

3. **English Speaking European Countries**

Many English speaking European countries have an extremely high level of English throughout the population due to having studied it from an early age, for example across Scandinavia, at least 67% of the population speak English and even as high as 71% in Denmark.

You will find that there are many English speaking countries throughout Europe that while it is not a primary or secondary language, there are a large number of people who speak it for example in Italy, although Italian is by far the dominant language, 34% of the population are fluent in English and many more have some grasp of the language so you will be able to get by using English while also having people who can help you learn.

Many European countries that speak English do so as their second language, throughout the continent, a large percentage of the population are able to speak two, three and sometimes even four languages for example language learning app <u>Babbel</u> found this to be the case in one of the smallest countries in Europe, Luxembourg! I was surprised when touring around Holland and the Northern part of Germany, when conversing with people in bars and restaurants, although I was making the effort to speak in Dutch and German respectively (I had learned introductory phrases) the amount of people who replied in English was staggering, it was then that I realized the wide ranging influence of the English language, its importance and how those of us who speak it are at a great advantage when job searching abroad!

Of the countries in Europe that speak English quite often over half the population are either fluent or able to hold a conversation, for example in a study by EF almost 67% of the population in Finland speak English meaning you are extremely likely to come across someone who can help you should your knowledge of Finnish be found wanting while out and about!

More and more people are learning to speak multiple languages, the EU itself is promoting a scheme known as the ´Barcelona Objective´ whereby citizens are able to communicate in 2 languages other than their mother tongue.

4. International Work

I´ve found the best way to approach international work is to join a job board such as Europe Language Jobs, the first reason is that, let´s say I´m living at home in England, how many companies am I likely to be aware of in Barcelona or Bucharest? Ok so Nike, Apple and Microsoft probably have a base here but... After that?

Being on a job board collates thousands of available jobs in your desired location and saves so much time from alternative ways of searching such as google searching ´find jobs abroad´ or ´English speaking jobs in Spain´ yes it will show results but the job board cuts the search time because they´ve already done that for you and then it's up to you to simply pick your favourite!

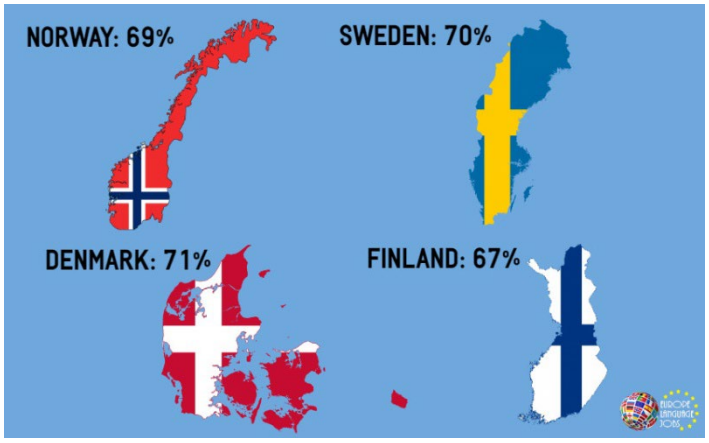
Another reason to use a job board and my own favourite tool for job hunting: LinkedIn, is one that I realized very early on in my job search. The quality of job offers and companies is something we as job seekers often take into account less and less as our level of motivation for job hunting decreases due to the arduous process of finding a job, the application process which usually takes at least 15-20 minutes what with entering CV details, achievements, qualifications, reasons you want the job, why you´d be a good fit and on and on and on.

Doing this over and over for so many jobs gets so draining, this is why I like job boards, only having to enter details once is an enormous time saver and so instead of spending an entire day searching for jobs and coming away demotivated and having the feeling like I´ve wasted the day, I could simply spend 10-15 minutes each day checking the website for new job offers that match my requirements.

5. Top English Speaking Countries

As you can see from the various images in this article, the top English speaking countries are generally found in Northern parts of Europe in Scandinavia with almost three quarters of the population speaking English!

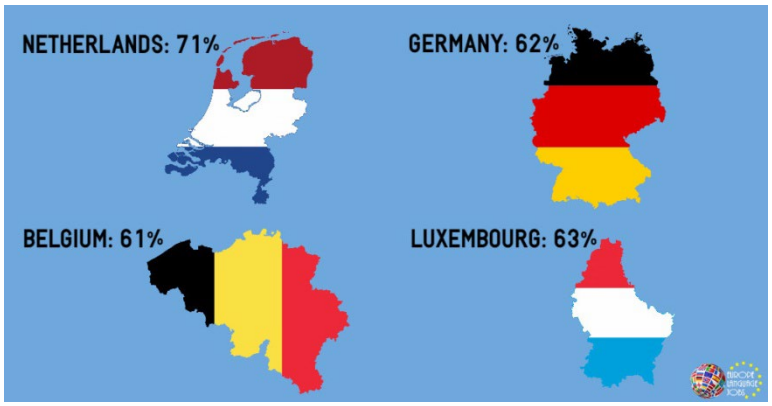
SCANDINAVIA/ NORTHERN EUROPE



While we have already discussed that Denmark, Norway, Sweden and Finland are some of the top English speaking countries, we shouldn't forget that Germany and Belgium are very high up the list, with over 62% of the population in Germany being English speakers and 61% in Belgium!

The Netherlands beats even the Scandinavian countries to become a top English speaking Country with a whopping 72% of the country being able to speak English!

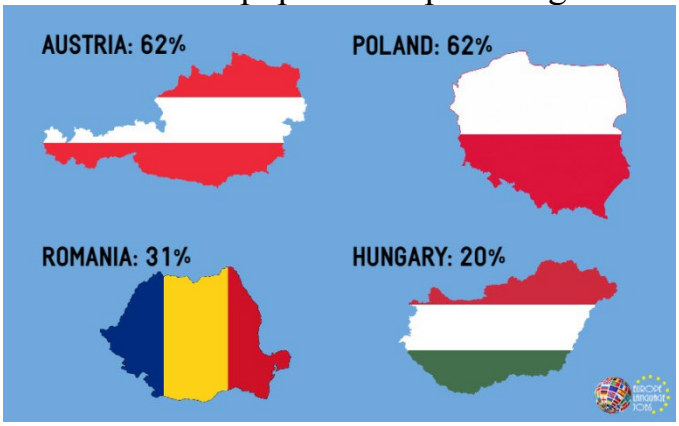
CENTRAL EUROPE



Heading eastwards until we finally hit Russia (where only 6% of the population speak English) we see countries like Poland and Austria hitting a very high figure of 62% of the population being English speakers.

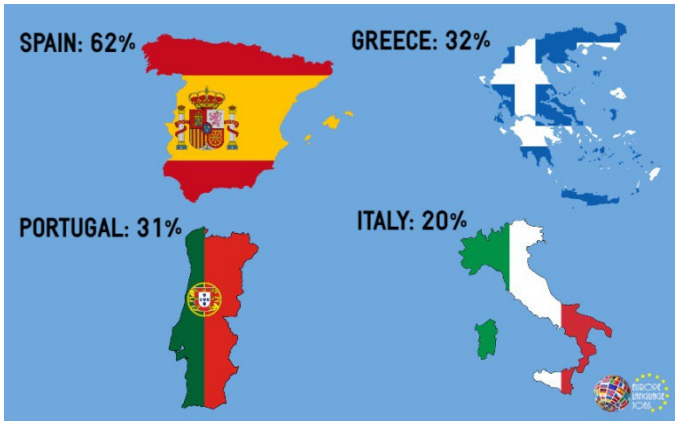
CENTRAL/EASTERN EUROPE

The figures get lower the further East we go for example here we can see that in Romania 31% of the population speak English while in Hungary the figure stands at a lowly 20%!



SOUTHERN EUROPE

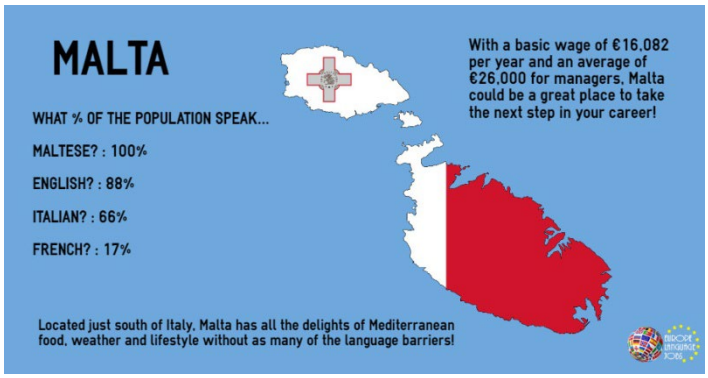
A popular destination for so many English speaking expats due to factors such as the wonderful food, weather and a different lifestyle to back home, we see here that in this region there are plenty of English speakers for us to converse with, however the figures are not as high as places like Germany where almost three quarters of the population speak English.



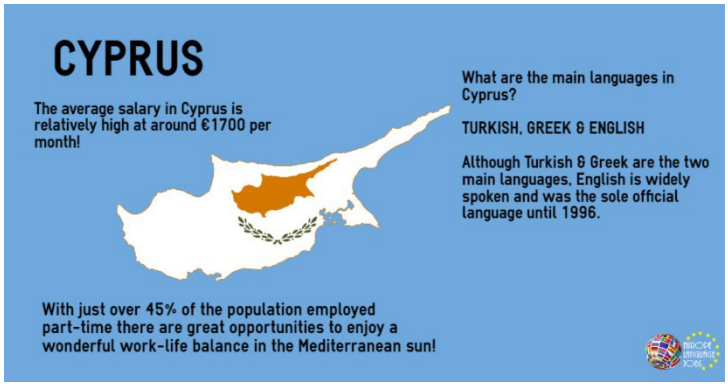
6. Countries In Europe That Speak English As An OFFICIAL LANGUAGE

Many Countries in Europe that speak English do so as a second language, but which countries can you visit that speak English as their NATIVE language? Aside from the U.K. where 97% of the population speak English.. Where can we go?

There are THREE COUNTRIES that speak English as an official language and they are all found around the Mediterranean in Southern Europe making them wonderful places to move to if you want to find an English speaking country.



Malta, the smallest EU state is well known for its relaxed lifestyle, low cost of living and historical links to Britain according to gov.mt. Popular with many expats due to the numerous leisure activities such as diving to take advantage of the beautiful coast of Malta as well the nightlife and cultural events. Another bonus is that contrary to some other countries, obtaining paperwork to live in Malta legally is relatively straightforward for those of us from the EU!



Cyprus has a higher average salary and more English speaking residents than Spain as well as a plentiful array of jobs in the service industry, but more expats head to Spain than Cyprus.. So what does this mean.

Whilst Spain is a wonderful place to live and English speakers are plentiful, if you want the sunshine and lifestyle of Southern Europe but be able to find an English speakers to converse with at work or at the bar, Cyprus could be an even better choice for you.

As more expats choose places such as France and Spain, Cyprus has less workplace competition and herein lies the opportunity for you! For example on the Europe Language Jobs offers page, an offer of a Marketing position in Cyprus has around half the number of applicants than offers of marketing positions based in Spain, so while English speaking jobs are plentiful across the continent, going to places with less competition but a thriving economy could be a great move for you!

Just a few other reasons Cyprus could become your number one choice of English speaking countries according to the team at ExpatFocus are low house prices, sunshine almost year round, excellent quality of life in a relaxed atmosphere and interestingly in comparison with other parts of Europe: Cyprus has a low crime rate and good healthcare, sounds appealing right?

With a GDP per capita of £56,612, low unemployment and employee growth at a healthy 3.6% (information from Gibraltar.gov) it´s easy to see why Gibraltar will become an even more attractive destination in the future.

If you have a desire to experience the sun and relaxed lifestyle of the Mediterranean but still be around much of the U.K. culture, Gibraltar could be the best choice for you, being an English speaking country has led to an enormous influx of expats heading to Gibraltar, could you be joining them?

7.Conclusion

As you can see, there are a wide range of English speaking countries in Europe, from as West as Portugal to the enormous number of English speakers in Central and Northern parts

of the continent to the less fluent East in Ukraine and Russia, your choices are in abundance and it's just up to you to choose which one you prefer and which suits you desired lifestyle!

Malta. Gibraltar. Cyprus. These are the three countries for you if you are determined to find an English speaking country where you do not have to learn any other language and have a comfortable easy way of life!

Has this whet your appetite for some traveling? If so, take a look at The Top 9 Cheapest Places to Live & Travel in Europe in 2018 and see you next time!

Лекція №24

Тема лекції: «Україна. Географічне положення»

План лекції

1. Geographic location
2. Relief
3. Physiographic division of Ukraine
4. Hydrography and climate
5. Natural resources and environmental issues

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
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Зміст лекції

1. Geographic location

Ukraine has a strategic position in Eastern Europe: lying on the northern shores of the Black Sea and the Sea of Azov, it borders a number of European countries - Poland, Slovakia and Hungary in the west, Belarus in the north, Moldova and Romania in the south-west and Russia in the east. The total geographic area of Ukraine is 603,550 square kilometers (233,030 sq mi). The land border of Ukraine totals 4,558 kilometers (2,832 mi). The border lengths with each country are: Belarus 891 kilometers (554 mi), Hungary 103 kilometers (64 mi), Moldova 939 kilometers (583 mi), Poland 428 kilometers (266 mi), Romania 169 kilometers (105 mi) on the south and 362 kilometers (225 mi) on the west, Russia 1,974 kilometers (1,227 mi), and Slovakia 90 kilometers (56 mi). Ukraine is also bordered by 3,783 kilometers (2,351 mi) of coastline.

The border with Russia is the country's longest border - it runs in part through the Sea of Azov.

2. Relief

Simplified depiction of the biomes lying north of the Black Sea. The bright green belt girdling the Black Sea's southern coast, extending westwards, denotes a region of subtropics.

Most of its territory lies within the Great European Plain, while parts of western regions and southern regions lay within the Alpine system. In general Ukraine comprises two different biomes: mixed forest towards the middle of continent and steppe towards the Black Sea littoral. Major provinces include, Polesian Lowland, Dnieper Lowland, Volhynia-Podolie Plateau, Black Sea-Azov Lowland, Donets-Azov Plateau, Central Russian Upland, Carpathians, and Pannonian Basin.

The western regions feature alpine-like section of Carpathian Mountains, the Eastern Carpathians that stretches across Poland, Ukraine and Romania. The highest peak is Hoverla, which is 2,061 metres (6,762 ft) tall. Mountains are limited to the west, the southern tip of Ukraine on the Sea of Azov. The western region has the Carpathian Mountains, and some eroded mountains from the Donets Ridge are in the east near the Sea of Azov. The highest elevation in Ukraine is located at the peak of Mount Hoverla which is 2,061 meters (6,762 ft) above sea level.

Most of Ukraine's area is taken up by the steppe-like region just north of the Black Sea. Most of Ukraine consists of fertile plains (or steppes) and plateaus. In terms of land use, 58% of Ukraine is considered arable land; 2% is used for permanent crops, 13% for permanent pastures, 18% is forests and woodland, and 9% is other.

3. Physiographic division of Ukraine

Most of Ukraine consists of regular plains with the average height above sea level being 175 metres (574 ft). It is surrounded by mountains to its west and extreme south. Wide spaces of the country's plains are located in the south-western part of the East European Plain. The plains have numerous highlands and lowlands caused by the uneven crystallized base of the East European craton. The highlands are characterized by Precambrian basement rocks from the Ukrainian Shield.

Plains are considered elevations of no more than 0–600 m (0–1,969 ft) among which there are recognized lowlands (plains) and uplands (plateaus, ridges, hill ridges).

Great European Plain (subregion East European Plain)

- Volhynia-Podillia Upland (Volhynia-Podillia Plateau)
  - Volhynian Upland
  - Podolian Upland
- Small Polesia Plain
- Khotyn Upland (part of Moldavian Plateau)

- Roztocze
- Sian-Dniester Lowland
- Eastern Carpathian Foothills
- Polesian Lowland
- Dnieper Upland
- Dnieper Lowland
- Central Russian Upland
- Donets-Azov Plateau
  - Donets Upland
  - Azov Upland
  - Donets Ridge
- Black Sea-Azov Lowland
  - Black Sea Lowland
  - Crimean Lowland
  - Azov Lowland

Alpine system

- Transcarpathian Lowland (extension of Great Hungarian Plain, part of Eastern Pannonian Basin)
- Eastern Carpathians (part of Carpathian Mountains)
  - Outer Eastern Carpathians (more Eastern Beskids and the Ukrainian Carpathians)
    - Inner Eastern Carpathians (more Vihorlat-Gutin Area)
- Crimean Mountains

4. Hydrography and climate

Kalmius river, Donetsk

The territory of Ukraine is bordered by the waters of the Black Sea and the Sea of Azov. More than 95% of the rivers are part of those two seas' drainage basins. A few rivers are part of the Baltic Sea basin. There are seven major rivers in Ukraine: Desna, Dnipro, Dnister, Danube, Prypiat, Siverian Donets, and Southern Buh.

Ukraine has a mostly temperate climate, with the exception of the southern coast of Crimea which has a subtropical climate.[1] The climate is influenced by moderately warm, humid air coming from the Atlantic Ocean.[2] Average annual temperatures range from 5.5–7 °C (41.9–44.6 °F) in the north, to 11–13 °C (51.8–55.4 °F) in the south.[2] Precipitationis disproportionately distributed; it is highest in the west and north and lowest in the east and southeast.[2] Western Ukraine, particularly in the Carpathian Mountains receive around 1,200 millimetres (47.2 in) of precipitation annually, while Crimea and the coastal areas of the Black Sea receive around 400 millimetres (15.7 in).[2]

Average daily maximum and minimum temperatures for the seven largest cities in Ukraine[3]

Location	July (°C)	July (°F)	January (°C)	January (°F)
Kiev	25/16	78/61	–1/−6	30/21
Kharkiv	26/16	79/61	−2/−7	28/19

Average daily maximum and minimum temperatures for the seven largest cities in Ukraine[3]

Location	July (°C)	July (°F)	January (°C)	January (°F)
Dnipro	28/18	83/65	0/−5	32/21
Odessa	27/18	80/65	2/−2	36/27
Donetsk	27/16	81/61	–1/–6	29/20
Zaporizhia	28/16	83/61	–0/−5	31/21
Lviv	24/13	75/56	0/–6	32/21

5. Natural resources and environmental issues

Significant natural resources in Ukraine include: iron ore, coal, manganese, natural gas, oil, salt, sulfur, graphite, titanium, magnesium, kaolin, nickel, mercury, and arable land.

Ukraine does have many environmental concerns. Some regions lack adequate supplies of potable water. Air and water pollution affects the country, as well as deforestation, and radiation contamination in the northeast stemming from the 1986 accident at the Chernobyl Nuclear Power Plant.

Лекція №25

Тема лекції: «Економіка України»

План лекції

1. Mineral Resources of Ukraine
2. Ukrainian Industry
3. Ukraine's energy sector
4. Transportation system
5. Agriculture of Ukraine
6. Economic impact of Russian Invasion of Ukraine and conflict in Eastern Ukraine
7. Pro-Russian separatists controlled part of Eastern Ukraine
8. Annexation of Crimea by Russia
9. Economic Impact of Ukrainian Conflict

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
2. Романовська Ю.Ю. Вивчаємо світ – навчаємося англійської! : Посібник з англійської мови для студентів, слухачів курсів, абітурієнтів. – К : НПУ ім. М. П. Драгоманова, 2000. – 181 с.
3. https://en.wikipedia.org/wiki/Economy_of_Ukraine
4. http://ukrainetrek.com/about-ukraine-economy
5. http://lingualeo.com/ru/jungle/economy-of-ukraine-89838#/page/1
6. https://www.accounting-ukraine.kiev.ua/economy_ukraine.htm

Зміст лекції

1. Mineral Resources of Ukraine

Ukraine has a large supply of many valuable mineral and raw material resources. Significant mineral resources in Ukraine include: iron ore, coal, manganese, uranium ore, natural gas, oil, salt, sulfur, graphite, titanium, magnesium, kaolin, nickel, mercury, etc. As for stocks iron, manganese, titanium and uranium ore Ukraine is ranked first among European countries, with the mercury ore reserves - Secondly (after Spain).

Fast fact: Ukraine contains around 5% of the worlds mineral resources.

Ukraine has large reserves of **iron ore raw materials**. These are mostly Precambrian metamorphic ores (haematite and black), as well as sedimentary (brown iron ore). Precambrian metamorphic ores are located on the Ukrainian crystalline shield.

Ukraine’s total reserves of iron ore are estimated at 27.4 billion tones (A+B+C1 category) and composed of rich (1.9 billion tones), as well as of poor ferriferous quartzes (24.1) and brown iron ores (1.4). 60 of the 83 iron ore deposits included in the estimate, are in the Kryvyi Rig basin, whose reserves equal 18.7 billion tonnes.

Coal is the main fossil fuel of Ukraine. It is mined in the Donetsk and Lviv-Volyn basins. Donetsk Basin (Donbass) is the largest in Ukraine. It is located on the territory of Donetsk and Lugansk oblasts (in Eastern Ukraine).

Ukraine has some of the world's largest **manganese deposits**, located in south central Ukraine at Nikopol' (Nykopil). Manganese ore types include carbonate, oxide – carbonate and oxide ores. Total manganese reserves in Ukraine are 3.5 billion tons including 2.3 billion tons of commercial reserves. Ukraine's share in global manganese production is 32 per cent.

Titanium ores have been explored in the area of the Ukrainian crystalline shield. One of the major deposits is the Irshansk deposit (Zhytomyr oblast). Operating there is a concentrator for ilmenite dressing. A titanium ore deposit in Dnipropetrovsk oblast (the Samotkan river basin) with virtually unlimited reserves, is of the most practical importance. Titanium is known to be used in building rockets, submarines, making artificial rubies, sapphires, synthetic rubber, etc.

Ukraine has raw materials for aluminum production: boxites (Vysokopillya deposit, Dnipropetrovsk oblast), alunites (Transcarpathia) and nefelines (Sea of Azov area).

Ukraine has modest recoverable resources of **uranium** – 225.000 tU according to IAEA Red Book 2011. Uranium mining began in 1948 at Pervomayskoye, and 65.000 tU have been produced so far. Current production is about 1.000 tU/yr (960 tU in 2012, 922 tU in 2013). VostgGOK expects increased production in 2014-2015.

There are **oil and gas deposits** but their reserves are not significant (the reserves of these fossil fuels were partly depleted during the Soviet period).

Ukraine has Europe's third-largest **shale gas** reserves at 1.2 trillion cubic meters (tcm). There are two potentially large shale gas fields. The Yuzivska gas field is located in Eastern Ukraine (Donetsk Oblast and Kharkiv Oblast); and the Oleska field in Western Ukraine (Lviv Oblast and in Ivano-Frankivsk Oblast).

In 2013 the government of Ukraine inked a sharing agreement on shale gas produced at Yuzivska and Oleska with the Dutch Shell and the US Chevron. Ukraine expects commercial shale gas extraction in 2017. By 2030 a production of 6-11 bcm of shale gas a year is wanted by the Ukrainian Government plans.

Ukraine has large reserves of such raw materials as potassium and magnesium salts, table salt, native zeolites, etc. Potassium salt is deposited in Lviv oblast and in Ivano-Frankivsk oblast (Precarpathian). Occurring here are mostly sulfate, mixed, sulfate chloride and chlorous salts. Sulfate salts (K_2O content is 8-10 %) are the basic raw material to produce chlorine-free potash fertilizer which is in great demand. Ukraine has large and unique deposits of table salt. As to its chemical purity, this **salt is the best in the World**.

Ukraine is rich in building materials (granite, marble, labradorite, chalk, marl, sandstone, anhydrite, gypsum, celestine etc.). The largest reserves of granite and labradorite are found in Zhitomir oblast.

In Ukraine has deposits of ores of **rare metals** - zirconium, hafnium, niobium, lithium, beryllium, scandium, tantalum, yttrium, lanthanum, molybdenum, strontium. These metals and their alloys are used in nuclear engineering, electrical engineering, electronics, aerospace engineering. By reserves of some deposits belong to large and even giant. Currently in Ukraine producing large amounts of zirconium and germanium, a smaller - scandium and hafnium.

Ukrainian amber is coming from Northwest Ukraine, mostly from the region of Rivne / Rovno. Ukrainian Succinit from Rivne is of the same origin as Baltic amber. These stones are approximately 40 – 54 million years old and therefore are from the Eocene age. Several

insects found in **Ukrainian amber** are unique and could not be found on any other place in the World.

2. Ukrainian Industry

Machine-building is the largest Ukrainian industrial sector. It accounts for over one-third of the employed and about a quarter of the total cost of industrial main assets. The rapid development of machine-building proved Ukraine's ability to develop and manufacture complicated science-intensive and highly technological machines and equipment. Among the examples are development of the rocket and space industry (Zenit 3SL, Cyclone), aircraft building (AN-70, AN-140, "Mria"), production of advanced tankers and large-tonnage vessles, fabrication of turbines for nuclear power plants, highly-efficient gas-pumping installations, equipment for high-voltage power transmission lines, mining equipment, diesel locomotives, tractors etc.

The Ukrainian shipbuilding industry is a complex of colleges, universities and research centers; experienced design bureaus; 9 shipbuilding yards with different capacities and specialisation; and a number of ship repair yards. Close geographical location to European Union, combined with availability of up-to-date design bureaus, powerful production facilities of shipyards, experienced labor force, presence of strong national metallurgic industry make the Ukrainian shipbuilding industry very attractive alternative to distant shipbuilding centers.

Ukrainian Zenit 3SLB

The multi-branch *chemical sector of Ukraine* includes chemical, petrochemical and chemical-pharmaceutic sub-sectors with over 1,600 enterprises and structural units. The sector accounts for nearly 10% of industrial fixed assets and over 5% of all those employed by Ukrainian industrial sector.

The structure of the chemical sector includes two groups of enterprises – chemical and petrochemical ones. Within the structure of the industry, predominant are asset- and energy-intensive basic chemistry enterprises. This sector is represented by production of mineral fertilizers, non-organic acids and soda. Nitric fertilizers are manufactured in Donbass (Severodonetsk, Gorlovka) and Pridneprovie (Dneprodzerzhinsk). Rovno and Cherkassy enterprises use natural gas in their production. Phosphate fertilizers are manufactured in sugar-beet producing areas (Sumy, Vinnitsa) and in Odessa and Kostyantynov (Donetsk oblast). Production of sulfuric acid is concentrated in the regions where it is consumed and in the centers of phosphate fertilizers production. Basic chemistry is concentrated in the Crimea and comprises production of bromine, magnesium and iodine.

Rovno Azote Plant ("Rivneazot" Company)

Ukraine's iron and steel industries are very important segments of the economy. Its importance is due to the fact that the machine building and metal-working industries depend on the production of ferrous and non-ferrous metals, and that metal is the main source of engineering materials and an important export article.

The metallurgy sector includes 14 integrated steel making plants, 7 pipe plants, 10 plants producing metallic articles, 16 merchant-coke plants, 17 refractory production plants, 3 ferroalloy plants, 20 non-ferrous metallurgical works, 35 factories reprocessing ferrous and non-ferrous scrap metal, and other enterprises.

Light industry and consumer goods sectors of Ukraine are underdeveloped in comparison to its heavy industry and agriculture.

Food industry is traditionally the major supplier of basic foods, such as sugar, salt, oil, alcohol, confectionery, etc. *Ukrainian food industry* is the leader of the agro-industrial complex. It will remain strategically important in future, determining the well-being of the people. The sector has considerable production, research and labor potential. Among the major sub-sectors of the food industry are meat and dairy processing, sugar refining, flour milling and cereals production, oil extraction and starch and molasses production. The most significant centers of the food processing sector are Kiev, Kharkov, Odessa, Nikolaev, Donetsk, Zaporozhye, and Lvov.

3. Ukraine's energy sector

The energy sector is of key importance for the national economic development, as both production and municipal facilities require electric power for their operation. The energy sector peculiarity is that the technological equipment and primary generators of electric energy are separated from consumers. As a result, power generation, transmission and distribution have become separate industries.

Three types of generation facilities are operated in Ukraine, including thermal power plants (steam turbine and diesel types), hydroelectric plants (hydroelectric proper and hydroelectric accumulating plants) and nuclear power plants. The role of wind and helium power plants is growing.

Ukraine operates *four nuclear power plants*, including the Zaporozhye, South-Ukrainian, Rovno and Khmelnytsky, and hydroelectric power generation cascades (6 large hydroelectric power stations on the Dnieper and 55 small stations on other rivers).

Ukraine ranks seventh in the world and fifth in Europe in terms of the number of nuclear reactors operated, total capacity and electricity produced. It has 15 reactors generating about half of its electricity.

Ukraine has high average wind speeds, a good solar radiation profile, plentiful biomass raw materials, and numerous dams on the Dnieper River, all ideally suited for renewable energy generation.

4. Transportation system

Overall, Ukraine has a well-developed and diverse transportation system. Ukrainian railroad network is extensive and links Ukrainian cities with industrial enterprises. Waterways such as ***Dnieper River*** and Black Sea and Azov sea, and their port cities (Feodosiya, Illichivsk, Mariupol, Nikolaev, Odessa, Yushny, and Sevastopol), play an important role in shipping.

Ukrainian highway system comprises about 147,000 kilometers (91,000 miles) of paved roads. Ukrainian subway systems exist in Kiev, Dnepropetrovsk and Kharkov. Buses small and large whisk passengers along all major city streets in all possible directions. The deepest in the world subway (metro) station is located in the Ukrainian capital, Kiev. It is Arsenal'na metro station (red line) and its depth is 105 meters.

Street trams and trolleybuses — the cheapest forms of transportation — plug slowly along their routes.

There are major international airports near Kiev (at Borispol), *Donetsk*, *Kharkov*, *Lvov* and *Odessa* cities.

5. Agriculture of Ukraine

Historically, Ukraine is well known for its agricultural production. Ukraine has 60.300 hectares of land. Of this, 70% is agricultural land, 17% is used for forestry, the rest is for housing, industrial and other purposes (used as state reserves, for recreation etc). Ukraine's agricultural sector employs 23.1 percent of the work force.

Ukraine's farms produce large amounts of potatoes and grains such as wheat, corn (maize), and barley. Potatoes, a food staple, are also grown for making starch and alcohol. *Ukraine* is one of the world's leading producers of sugar beets. Sunflowers are cultivated for their seed oil and latex. Other major crops include tomatoes, cabbages, squash, apples, and sour cherries. Beekeeping, silkworm raising, and fish farming also contribute to the country's economy. Large numbers of cattle are raised for meat and milk. Other livestock include poultry, pigs, sheep, and goats.

Fertile soil makes it possible to grow a variety of crops. Being a large grain producer, Ukraine is one of the six world largest exporters, supplying to 80 countries worldwide. The country is also the biggest exporter of sunflower oil and has substantial potential in growing and exporting rapeseed.

Only about 300 thousand hectares of *agricultural lands in Ukraine* (or 0.75% of the total agricultural land area) have been certified under the EU's "Organic Farming" standards. Organic farming success stories in Ukraine are still only developing.

Fast fact about agriculture of Ukraine: With its rich black soil and generous supplies of grain, Ukraine was once known as the **"breadbasket of Europe"**.

6. Economic impact of Russian Invasion of Ukraine and conflict in Eastern Ukraine

One of the most frequently mentioned theories of the causes for Ukraine crisis is a struggle for redistribution of power in energy market, in particular the European one. Proponents of this theory argue that the United States has in their view "flooding" the European market with US shale gas, thus diminishing Russia's clout. Ukraine can help the US in doing so since it has significant reserves of shale gas. Some go as far as recommending placing the map with arrangement of military hostilities in Ukraine over the map outlining deposits of the so-called unconventional gas.

7. Pro-Russian separatists controlled part of Eastern Ukraine

The economic blockade of pro-Russian separatists controlled regions comes on top of enormous infrastructure damage as a result of the conflict with Ukraine. Ukrainian Minister of Finance announced in October 2014 that reconstruction of those parts of the Donbass currently under Ukraine's control would cost approximately $2 billion.

In Donetsk Oblast (Province), industrial production has fallen by 59 percent over the past year, while an 85 percent drop was registered in Luhansk Oblast. Before the crisis, the two oblasts accounted for *20 percent of Ukrainian industrial production*.

Most of the territories' industrial enterprises have shut down, including the Luhansk Machine-building Works, the Stirol fertilizer works, at least seven steelworks, the German-owned Heidelberg Cement works, etc. Out of the region's approximately 140 coal mines, 93 are on separatist-controlled territory, 69 of which have suspended operations. Over half of the labor force in the DPR and LPR has neither employment nor any other source of income. *40,000 small businesses have declared bankruptcy*. Food production has fallen by 25-30 percent. Thousands of kilometers of roads, thirty bridges, and 4585 apartment

buildings have been destroyed. *Fifty-eight thermoelectric power stations have been damaged*. Forty-seven villages have been cut off from all electric power sources.

8. Annexation of Crimea by Russia

The annexation caused by a military intervention of Russia into the Autonomous Republic of Crimea and the city of Sevastopol, both administrative divisions of Ukraine.

The main direct economic consequence of the Crimea annexation is the loss of the Black Sea gas fields and a possible deterioration in the country's energy sector.

Resources in the northwestern part of the Black Sea shelf are estimated at 495.7 billion cubic meters of natural gas and 50.4 million tons of oil and condensate, in Kerch area - 321.2 billion cubic meters of gas and 126.8 million tons of oil and condensate, continental slope - 766.6 billion cubic meters of natural gas and 232 million tons of oil and condensate. The total gas potential of the Black Sea shelf is estimated at 2.3 billion tons of fuel. It is approximately 40% of total gas deposits in Ukraine. Though the industry requires large investments, the development of the Black Sea deposits was considered as an effective way to reduce dependence on gas supplies from Russia.

In July, 2014, Ministry of Energy and Coal Industry estimates **losses of Ukrainian energy sector** as a result of the annexation of Crimea by Russia as **USD 300 billion**.

The direct economic losses will arise from the nationalization of Ukrainian enterprises located in Crimea. "Chornomornaftogas", "Ukrtransgas", a series of powerful chemical industry enterprises, ports and more than 130 resorts can be nationalized.

For most private companies, nationalization is quite a remote risk. Ukrainian owners of the Crimean assets can face the problem of re-registration. After the annexation of Crimea all private property, including land, real estate, and companies must be re-registered in accordance with Russian legislation. The need for reissuing of shareholders' registers will result in a sharp increase of transaction costs for medium and large businesses. Loss of Crimean seaports can lead to short-term losses for their major customers – grain exporters. A transport blockade of the peninsula will lead to cargo traffic leaving from the Crimean ports to terminals in Mykolaiv, Kherson and Azov ports.

9. Economic Impact of Ukrainian Conflict

Some of the economic chaos in Ukraine has spilled over to Russia and other European economies. But, not surprisingly, those citizens do not have it nearly as bad as Ukrainians. The World Bank estimates that Russia's economic growth will slow to 0.5 percent this year, nearly 2 percentage points lower than it would have been had Russia not annexed Crimea. On a continental scale, European growth will be reduced by about 1 percentage point because of trade linkages to Russia and Ukraine.

But once the ripples extend to the global economy at large, the Ukrainian conflict is barely perceptible. The report expected global gross domestic product growth to slow by only about one-tenth of a percentage point this year.

Лекція №26

Тема лекції: «Освіта в Україні»

План лекції

1. Ukrainian educational system
2. School level
3. Home schooling and International schools
4. University level (Post-secondary education)
5. Postgraduate level
6. 2017 law "On Education"
7. Marks
8. Languages used in Educational Establishments
9. Education of international students

Література:

1. Гужва Т.М. Розмовні теми англійської мови: для абітурієнтів та учнів загальноосвітніх шкіл, ліцеїв та коледжів. – К.: Тандем, 1996 – 192 с.
2. Романовська Ю.Ю. Вивчаємо світ – навчаємося англійської! : Посібник з англійської мови для студентів, слухачів курсів, абітурієнтів. – К : НПУ ім. М. П. Драгоманова, 2000. – 181 с.
3. https://en.wikipedia.org/wiki/Education_in_Ukraine
4. https://www.ukraine.com/culture/education/
5. http://www.euroeducation.net/prof/ukrco.htm
6. https://www.scholaro.com/pro/countries/Ukraine/Education-System
7. https://mfa.gov.ua/en/page/open/id/4898

Зміст лекції

1. Ukrainian educational system

The Ukrainian educational system is organized into five levels: preschool, primary, secondary, upper secondary and postgraduate education.

In 2010 a total of 56% of children aged one to six years old had the opportunity to attend preschool education, the Education and Science Ministry of Ukraine reported in August 2010.[5]

Schools receive 50% of their funding from the city budget and 50% from the national Government budget.[6] The Cabinet of Ministers of Ukraine intends to give general education schools the option to independently manage the financial resources assigned from the state budget starting from January 1, 2010.[7]

2. School level

Grade	Age	School level	Accreditation
1	6/7	primary	I level
2	7/8		

3	8/9		
4	9/10		
5	10/11	secondary, base	II level
6	11/12		
7	12/13		
8	13/14		
9	14/15		
10	15/16	secondary, last	III level
11	16/17		
12	17/18		

Currently in Ukraine, school in its prime meaning is designated for children and teenagers who attend it between ages 6 through 17. There are several types of institutions of General Education. Some schools may be boarding schools and named *school-internat* or *lyceum-internat*.

- *Middle School of General Education* (ZOSh) or *Middle School*
- Lyceum (Tekhnikum in the Soviet times)
- Grammar school

The institution is called *Middle School of General Education* (ZOSh) or simply *Middle School* and usually combines primary and secondary levels of education. The system was first introduced in 1958 and included a 12-grade system, while in 1965 it was a 10-grade system. Most of the middle schools have all three level of accreditation for the General Education. Some remote schools may be of two levels which is a minimum requirement for all the middle school.

Primary and secondary education is divided into three levels of accreditation of general education: I - "younger", II - "middle", and III - "senior". I level of accreditation comprises grades 1 to 4. Grades 5-9 are usually considered a II level of accreditation or a base secondary education, while 10-12 are a III level. Despite the names, students usually study in the same school institution throughout their primary and secondary education. Primary schooling lasts 4 years and middle school 5. There are then 2 profile years.

The objective of general schooling is to give younger students knowledge of the arts and sciences, and teach them how to use it practically.[8] The middle school curriculum includes classes in the Ukrainian language, Ukrainian Literature, a foreign language, world literature, Ukrainian History, world history, geography, algebra, geometry, biology, chemistry, physics, physical education, music and art. At some schools, students also take environment and civics classes. Students attend each class only once or twice a week, however. Part of the school day is also spent in activities such as chess, karate, putting on plays, learning folktales and folk songs, choir and band. After school, students might also have music lessons, soccer, hockey, or tennis.[9]

During grades 9 and 12, which is usually around the age of 15 and 17, students take various exams. The current examination system is undergoing change. At grades 9 and 12 students take IGTs (Independent Government Tests), which allow eleventh graders to enter university without taking separate entrance exams. In 2008 entrance exams were abolished and the IGTs became the standard for determining entrance eligibility.[10] But in 2010 the system was changed again.

In school year 2009-2010 potential graduates are scheduled to undergo external independent testing after the final state examination, in the following subjects: Ukrainian language and literature, history of Ukraine, mathematics, biology, physics, chemistry, geography, and one foreign language (of the pupil's choice) in either English, German, French, or Spanish. The results of the testing will have the same status as entrance examinations to institutions of higher education.[11] But some universities can convert points in the external independent test certificate according to their own rating system.

3. Home schooling and International schools

Educating children at home is legal in Ukraine and expressly allowed for in Articles 59 and 60 of Ukraine's Education Law.[12]

- Meridian International School, Kiev (est. 2001)
- Kiev International School (est. 1992)
- British International School, Ukraine (est.1997 Nivki, 2011 Pechersk)
- Pechersk School International

4. University level (Post-secondary education)

Higher education is either state funded or private. Students who study at state expense receive a standard scholarship if their average marks at the end-of-term exams and differentiated test is at least 4 (see the 5-point grade system below); this rule may be different in some universities. In the case of all grades being the highest (5), the scholarship is increased by 25%. For most students the level of government subsidy is not sufficient to cover their basic living expenses. Most universities provide subsidized housing for out-of-city students. Also, it is common for libraries to supply required books for all registered students.

There are two degrees conferred by Ukrainian universities: the bachelor's degree (4 years) and the master's degree (5–6th year). These degrees are introduced in accordance with Bologna process, in which Ukraine is taking part. Historically, Specialist's Degree (usually 5 years) is still also granted; it was the only degree awarded by universities in the Soviet times. Almost all major universities are located in oblast centers.

5. Postgraduate level

Upon obtaining a master's degree or Specialist, a student may enter a university or a scientific institute to pursue postgraduate education. The first level of postgraduate education is *aspirantura* that usually results in the *Kandydat Nauk* degree (Candidate of Sciences). Candidates must pass three or more qualifying exams (one or more in the field of specialty, one in a foreign language of their choice and one in philosophy), publish at least five papers in peer reviewed journals (according to requirements existed up to 2013 they had to publish at least three papers), write a dissertation and defend it. This degree is roughly equivalent to the Ph.D. in the United States.[13] After graduation a student may continue postgraduate education. This takes from two to four years of study in *doctorantura*. Significant scientific results must be obtained and published, and a new thesis written. This produces a *Doctor Nauk* degree (Doctor of Sciences), but the more typical way is working in a university or scientific institute with parallel preparation of a thesis. The average time between obtaining *Kandidat* and *Doctor* degrees is roughly 10 years, and most of new *Doctors* are 40 and more years old. Only one of four *Kandidats* reaches this grade. *Kandidat Nauk* may keep

the position Associate Professor in universities, or Researcher/Senior Researcher in scientific institutes. *Doctor Nauk* can hold position of full Professor, Head of Laboratory or an equal/higher positions. The Ukrainian Ministry of Education and Science is considering changing the Soviet style *Kandidat Nauk* and *Doctor Nauk* degrees to Doctor of Philosophy and Doctor Habilitation, as has happened in several other post-Soviet countries.[*citation needed*]

6. 2017 law "On Education"

On September 25, 2017, a new law on education was signed by President Poroshenko (draft approved by Rada on September 5, 2017) which says that Ukrainian language is the language of education at all levels except for one or more subjects that are allowed to be taught in two or more languages, namely English or one of the other official languages of the European Union. The law stipulates a 3-year transitional period to come in full effect.[14][15] In February 2018 this period was extended until 2023.[16]

The law was condemned by PACE that called it "a major impediment to the teaching of national minorities".[17] The law also faced criticism from officials in Hungary, Romania and Russia.[18] (Hungarian and Romanian are official languages of the European Union, Russian is not.[19][20]) Ukrainian officials stressed that the new law complies fully with European norms on minority rights.[21] The law does state that "Persons belonging to indigenous peoples of Ukraine are guaranteed the right to study in public facilities of preschool and primary education in the language of instruction of the respective indigenous people, along with the state language of instruction" in separate classes or groups.[15] PACE describes this as a significant curtailing of the rights of indigenous peoples carried out without consultations with their representatives.[17] On 27 June 2018 Ukrainian foreign minister Pavlo Klimkin stated that following the recommendation of the Venice Commission the language provision of the (September 2017) law on education will not apply to private schools and that every public school for national minorities "will have broad powers to independently determine which classes will be taught in Ukrainian or their native language."

7. Marks

Ukraine produces the fourth largest number of academic graduates in Europe.

Ukraine has a 99.4 literacy rate. Ukrainian universities use a traditional 5-point scale:

- "5" = "excellent"
- "4" = "good"
- "3" = "satisfactory"
- "2" = "unsatisfactory".

"5", "4", "3" can be described as "Passed", "2" - as "Fail". Students who get a failing grade of "2", have two more chances to pass an examination. Since 2006 (and even earlier in some universities), university students are graded on a rating scale of 0 to 100. These grades can be transformed to the 5-point scale approximately as follows (this system may vary a little from university to university and may change from time to time):

- from 90 to 100 means "5" — A
- from 75 to 89 means "4" —— B, C
- from 60 to 74 means "3" —— D
- from 0 to 59 means "2" —— E

Both the rating scale and the 5-point scale are used in university registers. Some lecturers prefer to use A-F-point scale to rate students during their passing the exams.

As for secondary schools, they also used the above-mentioned 5-point scale till 2000. Since 2000 secondary schools use a 12-point scale, which could be transformed into the traditional 5-point scale as follows:[*citation needed*]

- "12" = "5+"
- "11" = "5"
- "10" = "5-"
- "9" = "4+"
- "8" = "4"
- "7" = "4-"
- "6" = "3+"
- "5" = "3"
- "4" = "3-"
- "3" = "2+"
- "2" = "2"
- "1" = "2-"

Here signs "+" and "-" denote respectively better and worse version of a mark, for example, "4-" means "somewhat worse than good".

8. Languages used in Educational Establishments

Since the 2017 law "On Education" the language of instruction in Ukrainian schools is the state language, which is Ukrainian (national minorities are guaranteed the right to study in public educational facilities including their language alongside Ukrainian).[24]

In 2000/2001 academic year, 70% of students attended Ukrainian-language schools (that is where Ukrainian is the primary language of instruction), while 29% were studying in Russian-language schools. There are schools with instruction in Romanian, Crimean Tatar, Hungarian, and Polish in regions populated by those groups. Historically, the language of instruction has often changed in Ukraine. When Ukraine was part of the Russian Empire, the Ukrainian language was proscribed, and Russian predominated among the elite, who had access to schools. The initial policies of the Bolsheviks were supportive of local languages, and many Ukrainian-language schools were opened, with the long-term goal of getting rid of illiteracy. From the mid-1930s to the mid-1980s, the Soviet government policies favoured Russification. In the 1970s and 1980s, the number of Russian-language schools constantly increased at the expense of Ukrainian-language schools. After Ukraine obtained independence the trend was reversed. However, reintroduction of formal Ukrainian-language study has taken longer than expected. In some schools that have tried to switch to Ukrainian, part or most of the instruction is still given in Russian. In universities there are similar trends. In 1991/92 academic year, according to the Razumkov Centre, 49% of high school students were receiving their education in Ukrainian, and 50% in Russian.

9. Education of international students

Ukraine is a popular destination for education among Asian and African students. There are more than 63,000 students from 130 countries of the world now.[25] With the support of Ministry of Education and Science of Ukraine in 2016 was founded Ukrainian Admission Center for foreign students. The goal of the center is to make the admission and training of foreign students easier and safer. A lot of non-government companies try to help students from all over the world apply to one of the universities in Ukraine.

Лекція №27

Тема лекції: «Досягнення українських вчених у галузі зварювання»

План лекції

1. Faculty of Welding Departments
2. Training Centers
3. STC «Paton Welding Institute»

Література:

1. https://stc-paton.com/eng
2. https://kpi.ua/en/node/7293
3. https://paton.ua/en
4. https://www.mau.com.ua/training-and-certification-centers.php

Зміст лекції

1. **Faculty of Welding Departments**

With outstanding organizational abilities of the prominent scientist, the founder of the Ukrainian welding school Yevhen Oskarovych Paton, Kyiv became the world's largest center of welding science. In 1948, the Faculty of Welding was established in the KPI, initially it had only one department, Welding Engineering, the founder and the first head was professor Y.O. Paton.

As a separate unit the Faculty of Welding existed in the KPI to 1955, when merged with the Faculty of Mechanics, establishing the Faculty of Mechanical Engineering. The renewal of the Faculty of Welding was initiated by academician B.E. Paton in 1975. One of the establishers and the first dean was Associate of Science, Professor A.M. Slyvinskii. In 1977, construction of the building for the Faculty of Welding was completed. The total area was 6000 m2, and more than 300 m2 of which were laboratories.

In 2008 Faculty of Welding has been certified by the National Authority of the International Institute of Welding and Training International Welding Engineers.

At the Faculty professionals with fundamental knowledge of general engineering and applied subjects are trained, they can develop innovative bonding technologies of modern materials, including biological substance, solve the urgent problems of construction of any materials, and develop new welding equipment, implement automated and robotic systems, design unattended technologies of welded structures, conduct research in the field of welding and related technologies. Curricula includes the internship, and for the best students - internships in leading specialized institutions of the EU and U.S.A. On a contract basis you may receive the second higher education in economics and on the special program "International Welding Engineer» (IWE, International Welding Engineer) with the issuance of an international certificate; here works Joint Ukrainian - German Faculty.

Employment of specialists is provided by the state order, individual orders and free choice. Graduates work as managers, leading experts of oil and gas, aerospace, shipbuilding, metallurgy, instrument-making, machinery and other important sectors of the economy;

scientific researchers and developers of advanced welding materials, processes, technologies; computerized and automatic-control systems.

2. **Training Centers**

ODESSA MARITIME TRAINING CENTRE

Recognizing the importance of sufficient trainings & education as a basis for selection seamen for Principals we have established close and fruitful relations with the Seafarer's Training and Certifying Center (TCCS) located in Odessa, approved by Det Norske Veritas, and OTI (Baku), accredited to teach Basic Offshore Safety Induction and Emergency Training (BOSIET), Further Offshore Emergency Training (FOET) and HUET (Helicopter Underwater Escape Training) to the standards set by The Oil & Gas Academy (OPITO). The training programs of the both Training Centers appropriate mandatory requirements of the MARPOL & HSE programs and STCW'95 based on the IMO model courses.

16, Pastera Street, Odessa, Ukraine
+38 (048) 723 86 83
www.tccs.odessa.ua

LERUS TRAINING CENTRE

Lerus Training Centre will provide realistic offshore training solutions in a safe and controlled environment for all students. Our experienced instructors ensure that delegates receive personal attention and receive all the training necessary to inpart reassurance and confidence should they be involved in future potential emergencies. The main goal of Lerus Training Centre is to improve the competence level of marine personnel and ensure they are able to perform duties and complete operations safely in the offshore oil & gas industry.

23 Chernomorskogo Kazachestva, 4th floor, Odessa, Ukraine
+38 (048) 729 91 25
+38 (048) 729 91 21
training@lerus-online.com

OCCUPATIONAL TRAINING INTERNATIONAL (OTI)

Occupational Training International is an international company, based in the Sultanate of Oman with a branch in Azerbaijan and internationally recognised as a key Health and Safety Skills training provider to the Oil and Gas Industry in the region. OTI has been successfully delivering HSE training and Offshore Survival courses since 1998.

Izmir Plaza, 2nd floor, 1034 Izmir Street 7A, Yasamal District, Baku, AZ1065
Tel.: (994 12) 447 47 11 /12 /13
www.oti.az

EDUCATIONAL-TRAINING COMPLEX "ADMIRAL"

The main goal of Admiral Training Centre is to provide their customers with the highest quality and relevant training available in the educational market

15 B.Arnautskaya Street, Odessa, Ukraine
+38048 799 68 88
www.admiral.od.ua

SEAFARERS TRAINING CENTRE (STC) ("Lesozavodsk")
Seafarers training centre (STC) provides training of sea-going personnel according to requirements of International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW 78/95) , as well as training and upgrading of ratings. The number of training courses which are offered by the Centre totals 51.

office 325, Kanatna Street, 42, Odesa, Ukraine
+380 (482) 35-81-13
21/29 9 Yanvarya Street, Kherson, Ukraine
+380 (552) 49-61-62
http://seafarer.od.ua/

"AVANT" TRAINING CENTRE OF SEAFARERS
"AVANT" Seafarers Training Centre was established in April 2003 as a maritime training service provider by capable and experienced maritime professionals. "AVANT" has developed in recent years to one of the biggest training centers in Ukraine having statutory license by the Ministry of Education and Science and the Ministry of Infrastructure of Ukraine.
"AVANT" standards of training are founded in accordance with the provisions of STCW 78, as amended, Regulation I/8 for "Quality Standards System" (QSS) monitored, approved and certified in line with the training standards of ABS (American Bureau of Shipping). ABS is a QSS organization and approves STCW training courses on behalf of the United States Coast Guard.

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ENGINEERING-ATTESTATION CENTER "PROMETEY"
MAU works in close co-operation with the Engineering-Attestation Center "Prometey" (Collective enterprise of the Society of Welders of Ukraine). Each candidate for employment with the Ukrainian and foreign companies in a capacity of welders, prior to signing the contract, has to pass thorough testing of his professional skills by the experienced instructors from the "Prometey" staff, certified by the national and international authorities. Should the candidate's level of practical skill or theoretical background be found insufficient, he will be advised to improve, by taking intensive course of welding pursuant to his specialization. Modern equipment, used in daily practice of "Prometey", enables the candidates to get well familiarized with welding apparatus used worldwide.
Welding materials, used in the course of testing/teaching, are all certified, and Welding procedures are all approved by the leading classification societies.
Thus fruitful co-operation of MAU with "Prometey" ensures supply of high-skilled manpower to our Customers.

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3. **STC «Paton Welding Institute»**

The E.O.Paton Electric Welding Institute (PWI) of the National Academy of Sciences of Ukraine is the scientific-technical complex by its structure. It includes: experimental design-technological bureau, experimental workshops, three pilot plants, several engineering centers. In all subdivisions of the Institute the staff is about 3500 persons, 1700 of them are working at the Institute proper. The scientific potential of the Institute is 300 staff scientists, including 8 academicians and 5 correspondent members, 72 Doctors and more than 200 Candidates of Techn. Sci. The main directions of the Institute scientific activity:

integrated studies of nature of welding, brazing, spraying and related processes, creation on their basis of new high-efficient technologies, equipment and materials;

study of strength and service properties of welded structures, development of principles and fundamentals of their designing, improvement of reliability, durability and service life;

automation and mechanization of processes of welding and related processes;

creation of new technologies and equipment of electrometallurgical production of extra-quality alloys and composite materials and products of them.

Over the years of the Institute activity its staff members received more than 6500 author's certificates, about 2600 patents of Ukraine, Russian Federation and foreign patents, more than 150 licenses were sold to the USA, Japan, Russia, Sweden, France, China and other countries. More than 60 developments, realized and implemented into the national economy by the Institute staff members in collaboration with industrial organizations were awarded the Lenin and State Prizes in the field of science and technology, prizes after the names of outstanding scientists of Ukraine and other prizes.

Лекція №28

Тема лекції: «Е.Б.Патон – український науковець у галузі зварювальних процесів»

План лекції

1.Biography
2.Commemorating Yevhen Oskarovych Paton
3.The Monument to Yevhen Paton
4.Educational TV studio: Chapters of history [welding, mathematics, cosmonautics]

Література:

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Зміст лекції

1. Biography

Evgeny (Eugene) Oskarovich Paton (20.02[04.03].1870 - 12.08.1953) graduated from Dresden Polytechnic Institute in 1894, and from Petersburg Institute of Railway Roads in 1896. He was a lecturer at Moscow Engineering College of Railway Roads (1989-1904). Evgeny Oskarovich Paton was a Professor of Kiev Polytechnic Institute, and the Chairman of the Bridge Department from 1904 to 1938. In 1929 he organized a welding laboratory and Electric Welding Committee. In 1934 Evgeny Paton founded the Electric Welding Institute of the Academy of Sciences of Ukrainian SSR. During 1945-1952 he was a Vice-President of the Academy of Sciences of Ukrainian SSR.

Eugeny Paton was a pioneer researcher of the new joining – welding technology for the materials. In order to make welding a reliable technological process it was necessary to conduct a comprehensive research of the mechanics of welded structures, welding metallurgical processes, and physics of the arc, as well as to develop the welding equipment and tools, and consumables and new welding techniques.

Evgeny Paton created the methods of design of rational bridge spans, investigated the conditions of their operation, and suggested the methods to restore the damaged bridges. He carried out the research on calculation and strength of welded structures, mechanization of welding processes, and fundamentals of welding. He supervised the development of the method of automatic submerged arc welding. During the World War II Evgeny Paton supervised the design and production of the equipment and technology of the automatic welding of special steels, tanks, bombs, etc.

Evgeny Oskarovich Paton supervised the wide implementation of welding in industry, the design and production of the assembly-welding production lines. He made the design of welded bridges. He founded a domestic school of metal welding. Evgeny Oskarovich Paton

was awarded almost all highest Soviet government and scientific awards and prizes, and the Title of the Hero of Socialist Labour.

Evgeny Oskarovich Paton was the father of Boris Evgenievich Paton, the President of the National Academy of Sciences of Ukraine.

2. Commemorating Yevhen Oskarovych Paton

One of the evenings of a series of cultural and educational activities that are usually dedicated to outstanding personalities of Ukraine or Poland took place in the Scientific and Technical Library of National Technical University of Ukraine "Kyiv Polytechnic Institute named after Igor Sikorsky" March, 21.

Life and scientific work of Yevhen Oskarovych Paton – the world-renowned scientist in the field of electric welding and bridge building whose birthday was celebrated March, 5 – was the theme of the previous meeting. Rector of the university Mykhaylo Zhurovskyy and dean of the welding faculty Serhiy Fomichov gave a short speech on the role of prominent scientist in the history of the Kyiv Polytechnic Institute. Then six students of welding faculty: Ivan Vdovychenko, Anastasiya Reshetilova, Mykola Drobyazko, Yevhenyy Illyashenko, Ivan Lahodzinskyy and Anastasiya Oliynyk were awarded with diplomas of NTUU "Kyiv Polytechnic Institute named after Igor Sikorsky" rector for outstanding achievements in studying, scientific research and social activity.

Afterwards, Valentyna Sapronova took the floor. Her creative activity has been connected with Kyiv Polytechnics for many years and, in fact, it was she who introduced these evenings 5 years ago. First of all, Valentyna narrated the milestones of Yevhen Oskarovych biography. She gave evidence of his high intellectual level, significant contribution to the development of world science and technics. Amid many outstanding achievements, the one of the greatest importance for the development of science was the establishment of world-renowned in the field of metals electric welding scientific and engineering school by E. O. Paton.

The story of Valentyna was easy for understanding and quite emotional. It was supplemented with a slide show prepared by head of rare and valuable library editions Maryna Miroshnichenko. The speaker was assisted with the material to the report by a former deputy dean of the welding faculty Igor Chertov and Petro Kyrychok (vice-dean in research and educational work), as always, has helped to organize the evening.

Veterans of Kyiv Polytechnic as well as the students who attended the meeting thanked Valentyna for an interesting and action-packed evening with approving applause.

3. The Monument to Yevhen Paton

The Monument to Yevhen Paton was erected on the Museum Square against the State Polytechnic Museum (building №6) in 2002. The author and sculptor is O. Skoblikov.

The bronze effigy of the scientist sitting on a stone is set up on a rectangular plinth made of red polished granite. Y. Paton is depicted in young age; he is dressed in long overcoat of a railway engineer with a uniform frock coat and a stand-up shirt collar peeping out of it. His left leg is slightly straightened, his hands are on his knees, and he holds a uniform peaked cap in his right hand. The effigy accurately recreates his appearance: short hair tightly framing his head, thick long moustache, regular features, and concentrated look. Artistic solution of the monument, peculiarities of its composition and plastic arts with

attention to details tends to artistic traditions of the end of XIX – the beginning of the XX century, which gives the composition a classic look. Vividness of the depiction and a certain spatially-anecdotal narrativeness contribute to the impressional persuasiveness of the monument.

It is carved on the plinth: *Yevhen Paton "I look at our talented youth with hope…"*

It is stated on the reverse of the plinth: *With a deep respect to a great teacher, a scientist, the founder of the world welding and bridge engineering school from students and professors of Kyiv Polytechnic Institute.*

4. Educational TV studio: Chapters of history [welding, mathematics, cosmonautics]

Where Welding Began

There are many bright chapters in the history of welding. The movie tells about the first of them – the history of welding machine creation by Mykola Benardos. The movie is in English.

The Family Of Scientists

Many years of his life, Yevhen Paton devoted to bridge engineering. His passion to electric welding developed suddenly. He was in his 50s. Basics of modern electric arc welding were created in Paton's small laboratory, which later became an institute. Borys Paton inherited his father's helm. His second son – Volodymyr – took on creation of high-tech welding equipment. You can learn about modern electric welding development and its achievements in a movie "The Family of Scientists".

Welding Capital

Paton Electric Welding Institute of NAS of Ukraine is the first and the biggest world's center for studies in welding engineering. The movie demonstrates its achievements.

Academician Kravchuk's Golgotha

The movie is about the life of world-known mathematician Mykhailo Kravchuk, his fighting against misfortune, his achievements and discoveries, especially about his work in Kyiv Polytechnic Institute.

Feeling The Sky

The movie is about Sergii Korolov's life: defeats, misunderstandings, achievements; about his way to a rocket creation; about the role of the individual in history of engineering, and, in particular, about those who sets a task, those who implement it and those who are responsible for setting a problem and solving it.

The First People On Mars

Scientists state that dreams about flies to Mars will have become true by 2030. However, few people know that the first rocket for such expedition was created in 1968. There is a unique chronicle marked as "Confidential Information" left in the archive of S. P. Korolov RSC Energia. You will see those cadres in the movie proposed.

The World Consists Of Stars And People

In letters to his wife Korolov spoke about his feelings, that he never expressed being among his colleagues. About anxiety and tiredness, despair and inspiration. These letters are an excellent manual for an enterpriser as they reveal the thoughts of the person who managed to unite a large amount of people to make real a great concept – space exploration – with no margin for error. All this is shown in a movie "The World Consists of Stars and People".

Лекція Практичне заняття №29-30

Тема лекції: «Київ – столиця України. Історія. Сучасність»

План лекції

1. Ancient Times and the Middle Ages
2. Cossack Hetmanate
3. Modern History
4. Kyiv is the capital of Ukraine

Література:

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Зміст лекції

1. Ancient Times and the Middle Ages

Image: Kyi, Shchek and Khoryv and their sister Lybid. Miniature, VI-IX centuries

Ask any Ukrainian to think back to the early history and they will tell you that ‘Kyiv is the mother of Rus’. This famous phrase is a quote from The Primary Chronicle, which documented the history of Kievan Rus. These very words marked the appearance of the first capital of Ukraine in 822, founded by Oleg, Grand Prince of Rus. The city just like the federation gained strength and found its voice on the international political arena by defending its borders and establishing diplomatic relations with the Holy Roman Empire and Byzantine Empire. The period of stability continued up to 1240 when Mongolian Batu Khan began a grand invasion in Rus. The siege of Kyiv had lasted more than a week and resulted in Mongolian victory and complete massacre of the population. Kyiv now stays forgotten for a long time.

Roman of Halych receives an ambassador from Pope Innocent III. Painting by Nikolai Nevrev

Nativity of Christ Church in Halych, XIV-XV centuries.

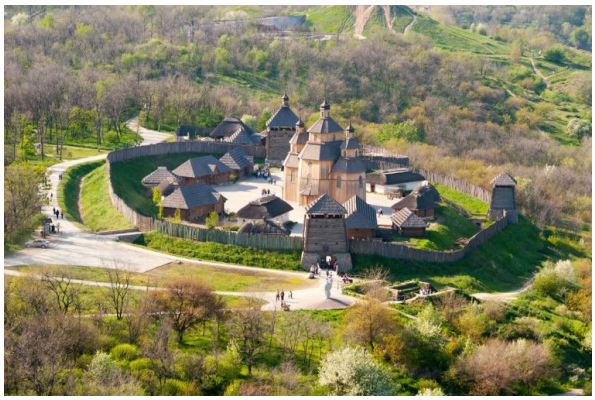
Meanwhile, in 1144 Ukrainian city Halych became the capital of Kingdom of Galicia–Volhynia. Located in Ivano-Frankivsk oblast near the tributary of Dniester, Halych prospered in the second half of the 12th century during the reign of Roman the Great Mstislavich and his son Daniel Romanovich, commonly known in Ukraine as Danylo Halytskyi. At that time, craft and trade had been intensively developing, while civil and church construction turned the small town into a city of great significance.

Batu Khan had huge ambitions and didn't stop just with conquering Kyiv — in 1241 Halych was completely ruined by the Mongolian army. According to various historical sources, this might have been the reason for the foundation of Lviv. The capital moved to Chełm, which successfully withstood the Mongolian invasion twice. At that time, the city was an important point of the political map of Europe — it was situated on the path that connected the Baltic and the Teutonic Order with the western Ukrainian lands. Chełm has suffered through the wars among Lithuania, Poland and Hungary as well as civil wars of the local boyars, and in 1387 it finally became a part of Poland as it stays it to this day.

2. Cossack Hetmanate

Image: Part of the diorama "Military Council on the Sich" in the National Museum of the History of the Cossacks in Khortytsia

Hetmanate is undoubtedly one of the most important and the most prominent periods of Ukrainian history. During this time, Ukraine had once more gained the status of an important player on the world arena, which soon led to the complete extinction of the Cossack state by the Russian army. In the 16th century, Tatar invasions in Ukraine have reached the level that disturbed the Polish government that wanted to strengthen their positions on Ukrainian lands. To stop the invasions and secure the region, Sigismund II Augustus grants Dmytro Vyshnevetskyi the right of building a fortress on the island of Small Khortytsia. The first fortifications of Zaporizhia Sich were erected in the early 1550s and became the prototype of the future autonomous Cossack territory. However, the fortress only stood several years until the complete ruining during the attack of the Crimean Tatar army.
In total, Zaporizhia Sich had 8 formations also called 'sich' during the existence of Cossack Hetmanate: Khortytska (1556-1557), Tomakivska (1570-80), Bazavlutska (1593-1638), Mykytynska (1639-1652), Chortomolytska (1652-1709), Kamianska (1709-1711, 1730-1734), Oleshkivska (1711-1728) and the New Sich (1734-1775). Each of them was a Cossack republic that existed on the basis of equality and fraternity. The laws and order of the Zaporizhia Sich were formed in the seventeenth century and remained virtually unchanged: serfdom was prohibited, each cossack could use the land for their economic needs, all Cossacks had the same suffrage and all decisions were approved by the assembly.



National historical reserve Khortytsia. The constructions recreate all aspects of life on Zaporizhia Sich

Sure enough, the freedom and self-efficiency of the Sich planted worries in Russian Empress Catherine II. On June 16, 1775, Russian troops completely destroyed Zaporizhia Sich. Kosh otaman Petro Kalnyshevskyi and the council of elder officers called starshyna were charged with treason and sentenced to a labor camp. The manifesto published the same year officially announced the elimination of Zaporizhia Sich.

However, the Cossacks and the Sich are far from being forgotten in modern Ukraine. Many of the former Cossack capitals such as Chyhyryn, Baturyn and Khortytsia Island have historical landmarks and monuments that can be visited even today. For instance, Rozumovskyi Palace located in Baturyn.

Citadel of Baturyn

Citadel of Baturyn and a wooden church

The Rozumovski Palace

Visitors are met with a huge wooden construction - the Citadel of Baturyn, a reproduction of the Cossack fortress with a hetman house located inside. The Rozumovskyi Palace located further was built in 1799 and is luxuriously furnished in the classical style. Besides, the mansion is a museum hosts a collection of unique works of art and artifacts of the Cossack era. Another popular Cossack location is Chyhyryn, which is now a part of the National Cultural and Historical Reserve Chyhyryn. The reserve also grasps the birthplace of Bohdan Khmelnytskyi — Subotiv village as well as Kholodnyi Yar and Otaman Park. The most visited landmarks here are the museum of Bohdan Khmelnytskyi and unique spots like the 1100-year Maksym Zaliznyak oak tree, one of the biggest and oldest trees in Ukraine.

3. Modern History

Image: Exterior of the House of Teacher, August 1916

The 20th century with its revolutions and wars also made the Ukrainian capital rather mobile. In 1917, Kyiv becomes the first capital of Ukrainian People's Republic (also called UNR) and manages to hold the position for two years under the guidance of the president Mykhailo Hrushevskyi. The reminders of the era still stand in the city — in fact, independence of UNR was declared in the House of Teacher located near the red campus of Shevchenko University.

Image: Bilozirskyi regiment at the parade of the Volunteer Army in Kharkiv. July 6, 1919

The Soviet invasion of 1919 moved the capital to Kharkiv, which even nowadays is often dubbed as “the first Ukrainian capital”. However, the city didn’t hold the status for too long — on June 24, 1934, the higher Soviet authorities moved to Kyiv, celebrated by the grand parade. On this day Kyiv became the official capital of the Ukrainian Soviet Socialist Republic. Kyiv survived the collapse of the Soviet Union and on August 24, 1991, the country became an independent state.

Today’s capital is promptly evolving: having hosted large international events like UEFA Euro 2012 and Eurovision 2016, Kyiv is blooming into the touristic center and a major cultural landmark site in Eastern Europe.

4. Kyiv is the capital of Ukraine

Kiev is one of the biggest cities in Europe. It is a bustling capital of independent Ukraine, its administrative, economic, scientific, cultural and educational center. This scenic city with population of over 3 million people is located on the shores of the Dnepr River.

Kiev is a city of invaluable historical and cultural monuments, a city of great events and outstanding people. Everyone will find there something especially interesting for himself.

The art and architecture of Kiev are considered world treasures. Many famous artists, poets and writers estimated the unique beauty of this city. The most renowned landmarks include: Cathedral of St. Sophia with outstanding mosaics and frescoes dating back to the 11th century; Kievo-Percherskaya Lavra featuring several monasteries and cathedrals; Golden Gate of Kiev, which date back to 1037; Ukrainian Baroque Church of St. Andrew; the magnificent 19th-century Cathedral of St. Vladimir; and many other attractions. Kiev is often referred to as "the mother of all cities" by Russians and Ukrainians. It is one of the oldest towns in Europe. In the historical center of Kiev you can feel the spirit of the past everywhere.

Kiev is distinguished for its rich cultural life. Theater lovers will find many theatres offering various theatrical programs. Most performances are held in Ukrainian or Russian. The recently renovated Kiev Opera House presents very good opera as well as a broad repertoire of ballets. Ivan Franko Theater is a center of Ukrainian drama, comedy, and musicals. A lot of various exhibitions are carried out in the city's numerous museums and art galleries.

Kiev is also a scientific and educational center of independent Ukraine. Various universities and science academies including famous Kiev-Mogilyanskaya Academy, which is one of the first scientific establishments in Eastern Europe, are located there.

Being the largest city of Ukraine, Kiev is a leading industrial and commercial center of the country. Kiev's major industries include: food processing (especially processing of beet sugar), metallurgy, manufacture of machinery, machine tools, rolling stock, chemicals, building materials, and textiles. The development of Ukrainian economy gave impulse to business activity of the city. There are a lot of new office centers, banks, trade exhibition centers and other commercial enterprises appearing in the city nowadays.

Take a walk through the ancient streets of this scenic city, feel its unique beauty and the spirit of its past. For sure your stay in Kiev will become one of your most memorable experiences.

Лекція Практичне заняття №31-32

Тема лекції: «Визначні пам'ятки України»

План лекції

1. Why you should visit Ukraine now?
2. Is Ukraine safe?
3. Places of interests
   - 3.1. Kharkiv
   - 3.2. Mukachevo
   - 3.3. Ivano-frankivsk
   - 3.4. Odessa
   - 3.5. Zhovkva
   - 3.6. Zolochiv
   - 3.7. Uzhhorod
   - 3.8. Lutsk
   - 3.9. Zatoka
   - 3.10. Chernivtsi
   - 3.11. Truskavets
   - 3.12. Chernobyl exclusion zone
   - 3.13. Kremenets
   - 3.14. Drohobych
   - 3.15. Dnipro
   - 3.16. Kamianets-podilskyi
   - 3.17. Zaporizhia
   - 3.18. Chernihiv

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Зміст лекції

1. Why you should visit Ukraine now?

I've always thought Ukraine is one of the most overlooked countries in Europe. The majority of people don't really know what to expect from it but in reality, this is a true gem! From incredible cities with golden domes or magnificent Central Europeanarchitecture and charm to sandy beaches of the Black Sea or lush hills of Carpathian mountains – Ukraine has it all. And now is the best time to go.

Due to the economic crisis and unstable situation in the east of the country the local currency – hryvnia – dropped a lot, losing around 3 times of its value in comparison to 2013 (pre-Maidan events). Visiting Ukraine is crazy cheap these days. I, for the first time ever, felt

guilty for spending that little for such good quality (accommodation, transportation, and eating/drinking out).

For example, a train ticket from Kiev to Odessa in 4 people sleeping compartment was around 13€ or a really good hotel in the very center of Ivano-Frankivsk, with big breakfast cost 20€ for a double room. You can't beat these prices anywhere! It's a win-win for everyone: you have a wonderful time for the best possible prices and local people and economy are happy to host you there!

2. Is Ukraine safe?

I've already discussed this issue in another post of mine (click here to read about safety in Ukraine) but I will repeat it again: yes, it is safe! As long as you stay away from the east part of the country, especially areas around cities of Donetsk and Luhansk, you will be fine!

I've traveled to Ukraine numerous times, solo or with friends, also after the revolution and each time I felt very safe there. Even walking alone and tipsy in the evening in Kiev was fine. Actually I feel much safer in Ukraine (as well as in other countries in Eastern Europe, the Balkans or Caucasus) than in Western Europe… And I'm not the only one – everyone I was talking to shares my opinion and I haven't heard of any bad accident that happened to people visiting Ukraine.

If, however, you don't feel confident enough to visit Ukraine independently there are local companies that organize tours to Ukraine that you can join.

3. Places of interests

3.1. KHARKIV

We were in Ukraine in May and Kharkiv was an unexpected highlight. Kharkiv has been incredibly important in Ukrainian history – particularly under Soviet rule when it was an industrial and academic powerhouse. More recently, it's noted as the closest major city to the ongoing war in the Donbass. Despite all this, the city feels optimistic, and there is a wealth of things to do.

Exploring the UNESCO-shortlisted Derzhprom building was a thrill, as it is such a foundational piece of the Soviet architecture vernacular. Another highlight was the city's metro stations, each with captivating futuristic designs (or what futuristic was back in the mid-1970s, when it was first opened). Top off your day by riding the impossibly long cable car over Gorky Park, but maybe skip the food court at the amusement park adjacent to it. I'm no coffee expert like Megan, but one of our favorite things in the city where the trucks parked everywhere pouring fresh shots of coffee for around 50 cents a cup!

Despite being the second biggest city in Ukraine and a former capital of the Ukrainian Soviet Socialist Republic, Kharkiv is often overlooked by locals and tourists alike. Many people are quick to write off Kharkiv as 'too Soviet,' but the city has never struck me as gray or depressing. In fact, the Soviet architecture here isn't afraid of a little flair – including the Soviet hammer and sickles that still adorn a few buildings. One of Kharkiv's main draws is Gorky Park, complete with leafy canopy trees and a small amusement park.

But the greatest ride is the old Soviet commuter cable car. The city has spruced it up in its transformation to a leisure attraction, though you still have to leap on and off as the cars swing around each end at full speed. Kharkiv is also a happening university city, with a strongly-caffeinated coffee scene. And for a different kind of buzz, Kharkiv's cocktail game

is one of the best in the country. One of the bartenders finally delivered a Negroni I enjoyed – turns out all it needed was a little bubbly prosecco.

3.2. MUKACHEVO

Mukachevo has many things to offer. I really liked that the city felt both really authentic and real but at the same time. It also had some of the picturesque elements that many tourists will enjoy such as beautiful old buildings and even a big castle on the top of a hill. The Carpathian mountains are just a stone's throw away and through the city runs the charismatic Latorica River where people fish swim and even some wash clothes in.

The size of the city is nice and people are warm and welcoming but don't necessarily expect that they will be able to have long and advanced conversations with you in English. Great city to visit for adventures and to see everyday Ukrainian life unfold. I rented a house there spontaneously as I was passing through on a bike trip but there are also cheap hotels and hostels available.

3.3. IVANO-FRANKIVSK

Ivano-Frankivsk doesn't seem like the most obvious destination for travelers visiting Ukraine. The city serves as a getaway to the beautiful Carpathian Mountains but not many people decide to actually stay there. Ivano-Frankivsk (formerly known under its Polish name "Stanisłów") used to be a grand place connected to noble Potocki family – these days there are only remnants of the great past strewn around the city. But Ivano Frankivsk is still a great place to visit!

It might not be as beautiful as nearby Lviv or Chernivtsi but it has its moments like the only town hall in Ukraine built in modernist style or pedestrian "one hundred meters street". What I liked the most about Ivano-Frankivsk was the amazing cafe scene! I literally spent the whole day visiting as many of them as possible as they were so great and so crazy cheap! Ivano-Frankivsk is a fun and laid-back city and I wouldn't mind returning there to spend some more time simply relaxing in this cool place.

3.4. ODESSA

Odessa seems to be on a lot of local tourists maps but gets overlooked by international tourists. I don't know why. It's a cosmopolitan city with some beautiful architecture, not to mention the beaches on the Black Sea. Ukraine isn't the first beach destination I think of, but it's hot in summer and the beaches are good. Arcadia would rival some of the big clubbing areas of Western Europe.

You can dance all night in a superclub like Ibiza or Itaka and then sit on the beach and watch the sun come up. In the city, the people watching is great if you sit in a cafe on the main street of Deribasavkaya or in City Garden and watch the locals promenading. The atmosphere seems different to the rest of Ukraine somehow. If you want something a bit different, Odessa has thousands of kilometers of catacombs underneath that you can tour or you can head to the Shustov winery and do some brandy tasting.

Odessa is a great city to visit if you want to combine beautiful old buildings with relaxing time by the seaside. Explore the city's nightlife and you are in for a treat. I decided to find accommodation in the city center and go to the beach during daytime. To be honest, I was a bit disappointed with the beach as it was quite dirty, but there are also many places offering beach clubs with large pools if you are keen on that. I preferred walking along the seaside promenade instead.

The city center is full of Art Nouveau houses, so make sure to look up to study the beautiful ornaments on the buildings. On your way out for dinner, stroll through one of the parks, and you will probably find elderly men playing chess under the trees. If you like clubbing, the Arcadia area is the place to go. If you, like me, prefer more relaxed bars, there are plenty to choose from in the city center, so just wander around and stop where you feel like.

3.5. ZHOVKVA

The city of Zhovkva lies about 30 km from its closest hub, Lviv, and that makes it an ideal day trip. The town is small and walkable with places to eat from coffee and cakes to Ukraine borscht. The first step should be its small, but well-stocked, Tourist Info center where you can get a map and climb the tower for the panorama. The town was founded by the nobleman and statesman, Stanislaw Zholkovsky, and inherited his surname.

He employed an Italian architect, Paolo di Ducato Clemensi, to lay the town as an ideal town: the castle as the head, the market as the lungs, the town hall as the stomach, the city gates as the arms and legs, the churches as the heart. Today it is the only such surviving town in Ukraine (for your interest, Versailles was also laid out as the ideal town). Zholkovsky died during a military campaign against the Turks and his head was put on a pole in Istanbul to warn the Sultan's enemies.

Zholkovsky's widow later ransomed it to bury it in one of the Zhovkva churches. The town boasts a castle (do visit it!), a few churches of brick-and-mortar and a few wooden churches, a closed former synagogue and a lovely town square.

3.6. ZOLOCHIV

Zolochiv is located 1.5 hours via a bone-rattling bus ride from its closest hub, Lviv, but it is best visited on a scheduled bus tour (known as the Golden Horseshoe) from Lviv as part of three castles in the area as its tourist potential is underdeveloped. Zolochiv is famous for its castle but one would struggle to waste 3 hours of a bus ride to spend about 1 hour at the site. Zolochiv castle was a favorite of King Jan Sobieski and his sweetheart, Queen Marie Casimiera.

She came as a lady-in-waiting to another Polish queen and Jan Sobieski noticed Marie Casimiera then, but his mother was against this match. Marie Casimiera married another nobleman, Ian Zamoiski, but soon became a widow. Jan Sobieski's mother died too, and the couple could finally marry. The new Queen was unpopular due to her lower social background and ambitions to reign over the King and the country. She started to withdraw to Zolochiv and during her time, the castle was splendid. After Jan Sobieski's death, she left the country.

Her heart was interred in Paris and was lost during the French Revolution. Out of her eighteen children from both marriages, only four reached adulthood. The Zolochiv castle is a tribute to the Queen Marie Casimiera and her time (but they don't even seem to have a portrait of her for some unknown reason).

3.7. UZHHOROD

Uzhhorod, the capital of Transcarpathia province, is Ukraine's gateway to the West. Located in the tri-border region shared with Slovakia and Hungary, this small town is both culturally and politically oriented towards the European Union rather than Kyiv. Uzhhorod used to be called Ungvár for many centuries and the Hungarian influence can still be felt today. Uzhhorod Castle has a huge Citadel which is the town's biggest attraction.

Nearby, the bright yellow Greek-Catholic Cathedral, with its two steeples, stands out as one of Uzhhorod's finest buildings. A cobblestone street with plenty of potholes leads down to the old town where one will find many cafés, restaurants, and shops as well as buildings from the times of the Austro-Hungarian Empire. A pedestrian bridge connects the northern and southern parts of town, which are separated by the Uzh river.

Being the only bridge in the city center, it is frequented by many people day and night. There are a couple of street cafés nearby which are fantastic places for people watching! I would recommend staying a few days to explore the nearby Carpathian mountains. If you do not have so much time, Uzhhorod makes for an ideal overnight stopover halfway between Budapest and Lviv. Just a hop over the Slovakia border, Uzhgorod (Uzhhorod) is a small multicultural town in the western region of Ukraine (formerly in the Austro-Hungarian Empire, Czechoslovakia, Hungary, and the Soviet Union, its population is comprised of Ukrainians, Rusyns, Russians, Hungarians, Slovaks, Jews, and Roma). Central Uzhgorod is laid back in a sleepy Central European small-town way, and further out it gains an air of importance as a major border town.

Uzhgorod is a day-tripper's dream. As you stroll along the Uzh River and through the streets of the historic downtown, make sure to spot the numerous mini sculptures. In the pedestrian zone, stop at a cafe or bar for a glass of local wine; during summer time, street side patios offer respite and perfect people-watching vantage points. The Greek Catholic Holy Cross Cathedral is quite impressive in its blend of baroque and neoclassical elements.

A couple of museums illuminate the region's history. Fans of medieval history enjoy the 13th century Uzhgorod Castle, a citadel on a central hill, while the abandoned children's railway offers a glimpse into the Soviet times. And if you get antsy, Mukachevo, with its imposing Palanok Castle, is just a short bus ride away.

3.8. LUTSK

Lutsk is an ancient Slavic town in northwestern Ukraine, the first reference of which goes back to 1085. As many places in Western Ukraine, its history was influenced by a few major powers. From serving as the capital of Halych-Volynia, the Lithuanian Kingdom, Kingdom of Poland, Tatars and Russian Empire to independent Ukraine– this little town has seen it all. This, of course, makes for an interesting exploration!

While there is a mix of architecture inspired by its complex history (which I very much encourage you to enjoy, strolling through the old town especially), the must-see for everyone finding him/herself in Lutsk is the Lubart's Castle. It is the pride of towns' residents, dating back to the mid-14th century. If you are particularly observant, you will notice that it is that exact castle illustrated on the 200 hryvnia bill (I challenge you to take a picture of both halves!).

If you are flexible with your travels, I highly recommend visiting in summer, particularly the end of June- beginning of July. Why? There is an annual event called "A night in the Lutsk castle" that will enchant you with its programme, typically featuring medieval duke fights, street theatre, fire shows, traditional artisan crafts, food and drinks (such as homemade honey for example, or medovukha that is very popular in this region) and a symphonic orchestra!

Do not despair, however, if the timing is not perfect, you can still enjoy your visit to the castle, the town's architecture, as well as the town's rapidly developing street art any time of the year!

3.9. ZATOKA

People, especially summer heat lovers, should go to Ukrainian seaside. One of the most popular places among Ukrainians (and not so well known among foreigners) is Zatoka (about 60 km away from Odessa), particularly during summer when the temperatures are really high and the Black Sea becomes really warm. Since the annexation of Crimea, it may seem to be a bit crowded but it is worth spending a few days there – just to get a feel for the "eastern" holiday. Zatoka is a great combination of the typical former Soviet resort mixed with modern holiday destination.

You can book a luxury hotel there or just rent a cheap room from one of the people offering them at the station. On the main promenade, you can choose a fancy restaurant or goods from a local "babushka" selling home-made specialties. There, you can find a great market with fresh fruits, vegetables, and fish. When in the region, I also recommend taking a trip to Belgorod-Dniester, which has a great 14th-century fortress, and Szabo, a village known for its wine production.

3.10. CHERNIVTSI

Chernivtsi is definitely a unique place in Ukraine since it's quite different from the rest of the cities. Architecture is special and doesn't really match that of other Slavic destinations. Probably because it used to be part of Moldova and the Habsburg Empire in the past. Therefore, Chernivtsi remained multicultural with minorities from Moldova, Romania, Armenia, and Germany. You can find lots of museums explaining the history and slightly complicated cultural diversity.

The highlight of the city is the National University which they like to call "phantasmagorical" because it's enormous and looks like a castle. Since it's one of the biggest Universities in the country, the city is vibrant and filled with local students. Best times to visit Chernivtsi is before the summer holidays when the city is full, warm and its greenery is on peak. You can find plenty of beautiful/traditional hotels and hostels for every type of traveler or backpacker.

Chernivtsi, with its 250,000 inhabitants, is a major city in western Ukraine and has a wonderful historic center of Austro-Hungarian influence. Chernivtsi is a homage to a past and vanished age where, within the borders of the Austro-Hungarian Empire, in Eastern Europe, communities coexisted, the languages mingled, and cultural life seemed really great and romantic. The cobbled streets of the city center, flanked by baroque buildings, tell the stories of the Germans, Jews, Armenians, Romanians, etc., who populated the city and made it a lively and animated regional capital.

It is not that this beauty or importance has disappeared today; Chernivtsi is, in fact, one of the most enjoyable cities in Ukraine, with an adorable center. But, its multiculturalism seems to have completely disappeared and with it, the cultural richness of the place. However, I would recommend visiting this adorable city in western Ukraine because of the university which is wonderful and well worth it. There are also many parks worth visiting.

3.11. TRUSKAVETS

We think people should visit Truskavets, located a few hours by bus south of Lviv. This is a resort spa town that is quite popular for domestic tourism within Ukraine. But few foreigners seem to venture there. Yet, we found it to be a very worthwhile place to relax for a few days and had some of the best value spa facilities we've ever come across. The primary

draw to Truskavets is its healing waters. There are different types of water to drink that are said to cure certain ailments.

The water is dispensed to the public for free inside a few different structures throughout town that house special fountains. At these fountain facilities, you fill little kettle-shaped cups with the water. Each cup has a spout that you drink from to avoid the water from hitting your teeth, as all the minerals can be harmful to your enamel.

But while it may hurt your teeth, the waters are said to have beneficial properties for your body. We can only hope that it gives your liver boost, given all the wonderful vodka there is throughout Ukraine!

3.12. CHERNOBYL EXCLUSION ZONE

Last winter I had the opportunity to visit the Chernobyl exclusion zone. I had read about Pripyat, about the power station with the sarcophagus and about the creepy, abandoned kindergarten, but I had never heard about DUGA… one of the craziest sights I've seen in my entire life. My heart truly skipped a beat when I found myself in front of DUGA, the gigantic and super-secret Soviet radar, nicknamed the 'Russian Woodpecker' because of the tapping noise it made when disrupting radio communication.

DUGA is a huge wall of twisted metal tubes, 500 meters long and 90 meters high, looking like a portal to a new dimension. The existence of DUGA was kept a secret until recently – the area was marked as a 'children summer camp' in maps during Soviet times, and access to the DUGA was strictly forbidden until 2013. Up until last year, it was allowed (or shall I say not forbidden?) to climb the DUGA – now luckily it's forbidden, if you see the DUGA you'll agree with me that it looks scary as hell! However, I highly recommend visiting it if you head to the Chernobyl Exclusion Zone – it's one of the weirdest sights I've ever seen! The ghost town of Pripyat (or Прип'ять in Ukrainian) was bustling with life thirty years ago until its almost 50000 inhabitants were evacuated the afternoon after Chernobyl's accident on April 26th, 1986.

Located between Belarus and Ukraine, right in the border, it is barely a couple of kilometers away from the epicenter of the nuclear disaster. That makes it extremely radioactive and it can only be visited with a guide and as part of an organized group. That way, curious tourists can take pictures from the outside of iconic sights as the Polissya hotel or Pripyat's Ferris wheel but no longer from the inside of housing buildings or the stunning Azure swimming pool, accessible until not long ago.

If you are looking for a tour to Chernobyl, check out the **Ukraine pop-up tour** run by knowledgeable and respectable friends of mine.

3.13. KREMENETS

Out of all the places I've travelled to in Ukraine, when it comes to the smallest town with the most to see, Kremenets wins hands down. The town's one main street is packed with pretty churches and cathedrals painted in pastel colours and topped with golden domes, but visitors fond of Soviet-era architecture and history won't be disappointed either and it's hard to miss the huge World War II memorial standing juxtaposed in front of the 18th century former Jesuit college.

Several mosaics can also be spotted around the town and the city park even boasts an abandoned and rusting Ferris wheel! Overlooking Kremenets is a crumbling hilltop fortress and although not much of the fort itself remains, the climb up is worth it for the spectacular views across the town. When you've exhausted the town's sights, be sure to visit nearby Pochayiv Monastery.

Most visitors to Ukraine's capital are familiar with Kiev's Pechersk Lavra, but the little-visited (at least by tourists) Holy Dormition Pochayiv Lavra is the second most important monastery complex in Ukraine.

3.14. DROHOBYCH

Drohobych makes a perfect day trip from Lviv and a great history lesson. The town of 98,000 inhabitants has once been a flourishing multicultural center of oil and gas industries. Jews, Poles, and Ukrainians came here to build financial fortunes and – later on – beautiful villas. If you are a literature lover, you might have read about this town and its golden age in one of Bruno Schulz books. While today the city seems to be struggling financially, it is still totally worth a visit.

The most valuable monument is probably the Sveti Yur (St. George) church, an absolutely brilliant example of Ukrainian wooden sacred architecture. It was built in the 16th century, and a big part of it is still original. The interior is decorated with stunning frescos and very impressive carved iconostases. If you like architecture and folk art, this one sight is enough to pay Drohobych a visit. The newly renovated Choral Synagogue, formerly the biggest synagogue in Eastern Galicia, is rather interesting as well.

Practical tips: You can reach Drohobych from Lviv by bus, marshrutka or train, all taking off from the Central Railway Station. In Drohobych, the bus station is just a short walk away from the main sights; if you come to the railway station, it's probably more efficient to hop on public transport.

Eats: Franko Beef & Burger, Rynok Square St, 31, Doshka, Zhupna St, 4.

3.15. DNIPRO

Dnipro, or Dnipropetrovsk as it was called back when I visited, was a city that I knew very little about before traveling there. After a 45 minute flight from Kiev, I arrived late at night to a tiny airport on the outskirts of the city for a 2-day exploration of Dnipro. With little information out there about the city, here is what I discovered whilst there: The banks of the Dnepr river provide a great place to chill out watch the people go past while you drink a lukewarm beer from a kiosk. Further down the river is a little island with a Soviet-era theme park which was particularly busy as we arrived on Women's Day.

In a different area of the city, there is a large park with a lake and a theatre which juts out into the lake, a fine example of brutalist architecture. Behind the park the towards the train station is the old Soviet circus building, however, this is hidden behind a large wall to stop people entering the decrepit building. From the park, if you head up towards the football stadium, there is a homage to the industry that kept this city closed during the Soviet times, the production of missiles which are proudly on display in a park.

While heading back to our hotel, we stumbled across the aptly named Beer Bank, assuming it was just going to be an average beer shop, we discovered a wonderland of beer and managed to finally stock up on some much-needed craft beer. We also stopped by Three Beavers Cafe which served killer coffee, tea, and eclairs.

3.16. KAMIANETS-PODILSKYI

Kamianet-Podilskyi is a city of about 100,000 people located on the Smotrych River in western Ukraine. The city is thought to have been discovered by the Dacians, which now reside in modern Moldova, Romania, and parts of Ukraine. The city became a multicultural hub during the Soviet times and took in many Jews and Armenian minorities. Today, you can go and visit the recognizable castle, enjoy a market (diverse ones exist from Armenian

and Poles, etc), or even take a hot-air balloon, something the city is renowned for. For the history lover, the Cossack Games are a must!

3.17. ZAPORIZHIA

I traveled to Zaporizhia on a whim in an effort to kill some time before heading back to Kyiv. I had no idea I would discover such a unique city that boasted architecture that varied any other city in Ukraine I had visited. There is no shortage of sights to see in Zaporo, and I hardly managed to see them all, but I did love strolling up and down the mammoth streets and watching the locals enjoy the sunny day in the park.

I had an incredible coffee at Wave 3 before staying in one of the nicest hostels I have ever stayed in called Dream Hostel. I highly recommend Zaporizhia for travelers wanting to get a bit off the path in Ukraine, but still want a city with a fair amount of things to keep one occupied.

3.18. CHERNIHIV

Chernihiv was an absolute surprise of a city for me to visit. What began as a launch pad for me to embark on a trip to Slavutych ended in me finding a new Ukrainian city that took a piece of my heart. The city had so many sides to it and could be a bit of whatever you wanted her to be. I found it a little bit quiet, a little bit lively, but it always kept me smiling and entertained. Many people don't know that the oldest church in Ukraine can actually be found in Chernihiv and is called Our Savior Transfiguration Cathedral.

Chernihiv is also a great place for beer lovers as it is home to the well-known Ukrainian beer called Chernihivske. While I enjoyed this beer a few times, I found real pleasure in heading to Robata Craft Beer pub and sipping on something from Bierwelle. Even coffee lovers will find a home in this city by going to Fotel cafe, where they serve specialty coffee with a smile.

Лекція №33

Тема лекції: «Національні традиції України»

План лекції

1.Kupalo
2. Independence Day
3. Pascha
4. Pentecost
5. Rosh Hashanah
6. Ukrainian Unity Day
7. Christmas
8. Malanka
9. International Women's Day, Mother's Day
10. Holy Protection, Ukrainian Defenders' Day

Література:

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Зміст лекції

1. Kupalo

The legend of Kupalo is so ancient that historians and anthropologists can't really decide when it came to be. Originally a pre-Christian fertility and cleansing ritual celebrated near the summer solstice, Kupalo exalted the uncontrollable forces of nature: floodwaters, the harvest, the tide, and the weather.

When Christianity was introduced to Rus'-Ukraine by Grand Prince Volodymyr in the 10th century, Kupalo and other pagan rituals were Christianized. Though Kupalo's original emphases remained the same, it came to be associated with St. John the Baptist and Christian rites of purification. One of the hallmarks of Kupalo is an event when women throw fern and summer flower wreaths into large bodies of water. The person who dives in to retrieve a wreath is partnered with the woman who wove it. The couple has to complete tasks like jumping over a bonfire or spending a night in the forest to find a mythical fern flower for their budding relationship to blossom into marriage.

2. Independence Day

Independence day celebrates Ukraine's independence from the Soviet Union on August 24th, 1991. While some Soviet-era holdovers have been associated with the holiday, like a large military parade in the center of Ukraine's capital, it has come to mark the adoption of Ukrainian civic identity of all people living in Ukraine, and a common date that ethnic

Ukrainians abroad can point to when their nation finally appeared on a map. Celebrations often include outdoor festivals and elaborate shows of contemporary Ukrainian music and dancing.

3. Pascha

Pascha, or Easter as it's known in the West, is the year's defining celebration for Ukrainian Christians. Preceded by a strict 40-day period of fasting from all meat and dairy products, and several nights of reflection in church, the boisterous singing of "Christ is Risen" is when Ukrainians know it's time to cut loose. Blessed butter, hams, sausages, cheeses, eggs, go straight from people's Easter baskets onto their breakfast tables after coming home from an all-night vigil around sunrise.

The most recognizable element of Pascha is the pysanka, an intricately-painted egg steeped in Christian and pre-Christian symbolism. Another important element is the Paska, a cake-like sweetbread made with eggs, milk, and sometimes cheese, decorated with intricate braids and flowers made of dough or raisins.

There are also many folk songs and dances related to Pascha called Hayivky or Vesnianky (literally grove or spring songs). These are often performed by young people near churches or in cemeteries and are intended to introduce young couples to one another, in addition to expressing joy in the new life of spring and Christ's Resurrection.

4. Pentecost

In the traditional Ukrainian observation of this Christian feast, homes, offices, churches, cars, and other spaces are adorned with greenery and aromatic herbs symbolizing the Holy Spirit. This custom is why Ukrainians refer to the feasting as Green Holidays. Fifty days after Pascha, and ten days following the conclusion of Paschal celebrations, Ukrainian Pentecost celebrates the beginning of summer. In a more Christian sense, it also celebrates unity among all languages and ethnicities as per the Biblical account in which Christ's Apostles were told to preach the Good News to all nations.

On the days preceding Pentecost, Ukrainians visit their ancestors in the cemetery, tend to their gravestones, and often hold prayer services, offering intercession for their salvation.

5. Rosh Hashanah

Of course, Ukraine has been a center for the development of many ethnic and religious traditions, not the least of which is Judaism. One of the most visible Jewish branches is Hasidism, an ultra-Orthodox and mystical sect of Judaism known for conservative, dark dress. Hasidism, in fact, traces its origins to Ukraine.

Rosh Hashanah, the Jewish New Year, is a major holiday for all Jews; and many of the world's Hasidic Jews are obliged to make a pilgrimage to the gravesite of one of their movement's founders in the Ukrainian city of Uman. Every September, as many as 30,000 Jews descend on Uman to pay their respects to the grave of Rabbi Nachman of Breslov. It's not a somber celebration though — Jews spend the week dancing in the streets, feasting in tents and rejoicing. The city's population grows by nearly 40 percent during the holiday — the effect is so extensive, that much of the signage is posted in Hebrew, and even the city's commerce partially switches to the Israeli Shekel

6. Ukrainian Unity Day

Ukrainian Unity Day, celebrated every January 22nd, marks the historical act of unification between the Ukrainian People's Republic and the West Ukrainian People's

Republic in 1919. The two states, which constituted Ukraine's brief foray into independence after the collapse of the Russian Empire, did not last very long, but the effect of their unification remained for decades. The highly symbolic and administratively significant act that united Ukraine's East and West reinforced a common identity among all Ukrainians — a sentiment which prevails to this day.

The celebration of Ukrainian Unity Day in 1990, on the 71st anniversary of the Unity Act's signing, is credited with inspiring Ukrainian independence the following year. Three hundred thousand Ukrainians linked arms to form a human chain connecting the cities of Kyiv and Lviv, some 300 miles apart.

Today, Ukrainian Unity Day has been amended by Presidential decree to honor the participants of the Euromaidan revolution. As such, Ukrainians take the opportunity to also reflect on sacrifice, dignity, and human rights.

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7. Christmas

For most Ukrainians, Christmas is celebrated on January 7th, in accordance with the ancient Julian Calendar. Though some Roman Catholics, Protestants, and Ukrainian Greek-Catholics opt to celebrate according to the Western date of December 25th, the ethnic customs surrounding the holiday largely remain the same.

Before issues in the calendar's timing arose, the date of Christmas was intended to correlate with the winter solstice, and incorporated many Ukrainian pre-Christian customs in the celebration. The Christian symbolism around the solstice involves the looking forward to days getting longer, or light being born out of the darkness. A major hymn sung in church for Christmas refers to Christ as the "Sun of Righteousness," which was born out of the stars to be a "Light of Wisdom."

Similarly to Pascha, Christmas is also preceded by a 40-day period of fasting. However, instead of the feast happening at the end of the fast, it is held during, on Christmas eve. Twelve meatless and dairy-less courses are served at the appearance of the first star in the sky. The number of courses corresponds to both the number of months in the year and the number of Jesus' Apostles, and the star represents the star over Bethlehem.

The meal is steeped with other symbolism too, like the empty plate which is kept out for the spirits of ancestors to celebrate alongside their living relatives. But, heaven forbid those spirits might be evil, otherwise they would be vanquished by the garlic hidden under the four corners of the table, symbolizing four corners of the Earth!

Hay is also kept under the dinner table, a reminder of Christ's birth in the manger and the dependence of Ukrainians on a good harvest. A special buckwheat porridge is also thrown on the ceiling to predict the coming year's harvest — if it sticks, the year will be prosperous, if not, the homemakers should begin preparations for a difficult year.

8. Malanka

Like Kupalo, Malanka has pre-Christian origins, but has take on deeply Christian symbolism. While originally the holiday emphasized the interplay between the merciful moon

goddess, Mylanka, and mischievous earth-dwellers, today, it has become an extension of Christmas, the star of Bethlehem, and St. Mylania the Younger, a 5th century Christian known for her love and mercy.

Malanka happens to fall on New Year's eve, and the customs associated with Malanka—caroling, pageants, dancing—are often synonymous with New Year celebrations. When the Russian government moved state affairs thirteen days back onto the internationally-accepted Gregorian calendar, many religious and folk holidays like Christmas remained on their own calendar. Suddenly, the celebration of the New Year was almost two weeks after the rest of the world celebrated the New Year. When the Soviet Union forced state-mandated atheism, the holiday was stripped of all folkloric or religious meaning, and became known as "Old New Year," a name which sticks today.

In the Diaspora, Malanka is a chance for Ukrainians to dress up in their ball gowns and tuxedoes to celebrate a more formal iteration of the ancient feast at the hometown's fanciest ballrooms. Many Ukrainian community organizations organize Malanka balls as fundraisers for everything from educational development to medical care in Ukraine. Sometimes, Malanka balls also include a presentation of Debutantes, young women, who are introduced into their community's social circle in elaborately choreographed dances, escorted by young gentlemen.

9. International Women's Day, Mother's Day

International Women's Day, marked on March 8th, is a national holiday in Ukraine. A holiday that celebrated American suffragette and labor union activism at the turn of the century, it became a major holiday in the Soviet Union as women were praised for their role in the Russian Revolution. As such, International Women's Day is also a national holiday in other post-Soviet and Communist states. Though it's still a day off in those countries, and the sentiment might be well-intentioned, many are resisting the celebrations' Communist connotations. Some countries, like Ukraine, have amended it to more-closely resemble Western countries' celebrations of Mother's Day which are less political and more affectionate. Celebrations include visiting family, buying flowers, and honoring women and mothers in highly personal ways.

10. Holy Protection, Ukrainian Defenders' Day

Holy Protection, called Pokrova in Ukrainian and otherwise known as the Intercession of the Mother of God, is a Christian holiday commemorating pagan Rus'-Ukrainians' failed 10th century attack on Constantinople, the capital city of the Byzantine Empire now known as Istanbul. It is believed that an apparition of Mary, the Mother of God, appeared over the city, extending her impermeable veil over all of the Christians to protect them from the Slavic invaders' attacks. A few decades later, when the Christianity became the state religion in Rus'-Ukraine, people began to honor the event as a realization of the error in their pagan ways. The feast also celebrated a powerful medieval alliance between the kingdoms of Rus'-Ukraine and the Byzantine Empire.

As time went on, the Mother of God, as depicted in the 10th century protection of Constantinople, became seen as a protector of Christian warriors. The Ukrainian Cossacks made Pokrova their feast day on October 14th, and churches they built to commemorate victories over Muscovy, the Crimean Khanate, and the Polish-Lithuanian Commonwealth were often dedicated to the Mother of God on this feast. Ukrainian militias and insurgencies in the 20th century also prayed for the Holy Protection.

In the folk iteration, Pokrova was a popular time for marriage, since the year's harvest had all

been accounted for and a feast could be had. Likewise, it was one of the last feasts that could be had before the beginning of the pre-Christmas fast. If snow would fall before the Feast of the Holy Protection, Ukrainians believed that they should not only expect a good harvest in the following year, but also a surge of marriage proposals and children being born. Last year, the feast of the Holy Protection became a national holiday in Ukraine, and came to be referred to in civic circles as Ukrainian Defenders' Day, which replaced and moved a former Soviet-era holiday in February honoring veterans. This came after many months of bloodshed in Ukraine's Eastern regions of the Donbas, and became a new way of combining Ukrainian ethnic and civil holidays. Though it always celebrated bravery, chivalry, and honor, Pokrova is now a day to celebrate the centuries-long struggle for Ukrainian independence.

Лекція Практичне заняття №34-35

Тема лекції: «Видатні люди України. Видатні письменники та поети»

План лекції

1. Famous people of Ukraine
2. Ukrainian literature
   2.1. Early ears
   2.2. From the baroque period to the modern literature
3. Modern Ukrainian writers

Література:

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Зміст лекції

1. Famous people of Ukraine

Ukrainians are known to be amongst the world's most beautiful people and thus it's no surprise that some of the most gorgeous ladies in the international show biz like Mila Kunis, Milla Jovovich, and Olga Kurylenko have Ukrainian roots. But it's not just beauty that makes Ukrainians unique—the nation is also the motherland of several prominent figures in science, technology, literature, performance arts, politics, astronomy, music, and mathematics. Ukraine is the land of multi-faceted and versatile people! Take for example, Nikolai Ivanovich Kibalchich, a Russian revolutionary of Ukrainian origin who was also a pioneering rocket scientist. Another such multi-talented personality was Stepan Tymoshenko known as the father of modern Ukrainian engineering mechanics. Ukrainians are also famous for their contribution to the world of mathematics, music, and literature. In the recent years, people of Ukrainian origin have stormed yet another field with their unique combination of beauty and brains—the entertainment industry. Pop musicians and dancing stars like Maksim Chmerkovskiy, Roma Pryma-Bohachevsky, and Vasyl Verkhovynets are making the world sing and dance to their tunes! Indeed, hasn't Ukraine produced some of the most amazing international personalities? This section provides you information about the life and works of famous Ukrainians.

2. Ukrainian literature

2.1. Early ears

Outstanding representatives of the culture and literature in Ukraine include novelist **Nikolai Gogol**, poet **Taras Shevchenko**, poet **Ivan Franko**, Jewish writer **Sholem Aleichem** (1859–1916) and dramatist **Lesya Ukrainka**, their works have become symbolic of literature in Ukraine.

Ukraine has a rich literally tradition having produce numerous notable authors; to Ukrainians, literature is a form of entertainment, expression and a lifetime passion, although the growth of the Ukrainian literature was hard due to constant foreign domination over Ukrainian territory.

In the past, oral literature, such as **Cossack epic songs**, where passed on by word of mouth during generations until they were ultimately committed to written form. As a result, many old Ukrainian legends and stories proliferate in printed Ukrainian literature today.

The origins of Ukraine's national literature go back to Kyivan Rus' time; the first manuscripts talk about religious events, biographies, and chronicles of historical events; the poetic masterpiece of this period is the anonymous epic poem **Slovo o polku Ihorevim** (The Tale of Igor's Campaign), a pride of the Slavic people written at the end of 12th century. The legal code of Kievan Rus or Rus'ka Pravda is another good example of ancient Ukrainian literature.

The first book printing and book publishing was established in 1574 by Ivan Fedorovych.

2.2. From the baroque period to the modern literature

The **baroque period** put great emphasis on metaphors, hyperboles, and antitheses, principal authors in this period were Meletii Smotrytsky (1577–1633), Ioanikii Galiatovsky (?-1688), and Dymytrii Tuptalo (1651–1709). Poet and philosopher Hryhorii Skovoroda (1722-94) marked the beginning of modern Ukrainian literature in the mid-18th century; he traveled throughout Ukraine and countries of the Central Europe to get to know the real people.

A leading early figure in the modern Ukrainian literally revival was Ivan Kotliarevsky (1769-1838), he wrote the 1798 epic poem **"Eneida"** (based on the Roman classic, Aeneid, Kotlyarevsky transformed the original Trojans into Ukrainian Cossacks) and the operetta Natalka Poltavka. His works absorbed the Ukrainian humor and reproduced the lively folk way of life, now these works became part of Ukrainian classical literature. Classicism predominates in the writings of the novelist Hryhorii Kvitka-Osnovianenko (1778-1843) and in the plays of Nikolai Vasilievich Gogol (1809-1852).

In the 1830s, a group of Galician writers comprised by Markiian Shashkevych (1811–1843), Ivan Vahylevych (1811–1866) and Yakiv Holovatsky (1814–1888) and known as the **Ruska Triitsia**(Ruthenian Triad) published a literary collection under the title **Rusalka Dnistrovaia** (The Dniester Nymph, 1836). This endeavor used vernacular Ukrainian language and was focused on folklore and Ukrainian history.

Taras Shevchenko (1814–1861) launched a golden age of Ukrainian literature; his 1840 collection of poems Kobzar and other poetic works reflected the hopes and aspirations

of the Ukrainian nation and became a declaration of the literary and intellectual independence of the Ukrainians. Taras Shevchenko became the symbol of Ukrainian culture in the world.

In the second half of the 19th century, Ukrainian writers under the Russian Empire developed a realistic style in their writings. Marko Vovchok (1833–1907), and Panas Myrny (1849–1920) were masters of realistic prose.

The end of the 19th century has seen the emergence of some well-liked writers and poets such as Ivan Franko (1856-1916) and Lesya Ukrainka (1871-1913). **Ivan Franko** is often referred as the most talented and prolific writer of the early 20th century in Ukraine, comparable to Shevchenko, his work spanned fiction, poetry, drama, philosophy and children's stories, he was the first who began translating the books of the world literature into Ukrainian. **Lesya Ukrainka** enriched the Ukrainian creative writing with her neo-romantic poems and dramas.

During the 1920's, Ukraine saw a flowering in literature, many literally organizations were formed and new writers appeared. This renaissance was short lived. By the 1930's, Ukraine become under the control of the Soviet regime. Many Ukrainian writers choose exile; this allowed them to write with a independence that would be not possible under the Soviets. Most well-known among them were Yurii Lypa (1900–1944), Olena Teliha (1906–1942), Yevhen Malaniuk (1897–1968) and Oksana Liaturynska (1902–1970).

During 1938 to 1954, many Ukrainian writers were killed, deported or driven to suicide. Poet Maksym Rylsky (1895-1964) and Yevhen Pluzhnyk (1898-1936) were arrested and humorist Ostap Vyshnia (1889-1956) spent 10 years in labor camp. Hryhoriy Kosynka, theorist of neoclassicism Mykola Zerov (1890-1937), dramatist Mykola Kulish (1892-1937), and Mykhailo Semenko (1892-1937) were all shot. Others were forced to write on themes suitable for the Communist Party.

In 1960 to 1970 a powerful artistic movement of writers known as the **"Shestydesiatnyky"** ("The Sixtiers") revitalized Ukrainian literature opening new horizons, some representatives of this movement were poet Lina Kostenko (1930-), screenwriter Ivan Drach (1936-), poet Vasyl Holoborodko (1945-), writer Valerii Shevchuk (1939-), writer Hryhir Tiutiunnyk (1931-1980), literary scholar Ivan Dziuba (1931-), dissident Poet Vasyl Stus (1938-1985), poet Ihor Kalynets (1939-), Vasyl Symonenko (1935-1963) and Dmytro Pavlychko (1929-). Unfortunately, many of them were accused of anti-soviet propaganda; denied permission to publish, or refused to do so; others were not published again; others were arrested and punished with long sentences.

Modern Ukrainian literature is being made today by Andrey Kurkov, Yuri Andrukhovych, Oksana Zabuzhko, Vasyl Shklyar, Yevhenia Kononenko, Ivan Malkovych, Bohdan Zholdak, Serhiy Zhadan among many other talented writers and poets.

3. Modern Ukrainian writers

Currently, the Ukrainian literature is reinventing itself due to the declaration of independence and lifting of the censorship that took place in the Soviet Union. Most contemporary mainstream literary works in the Ukrainian literature lie within the postmodernism dimension.

Yuri Andrukhovych, Serhiy Zhadan, Oksana Zabuzhko, Oleksandr Irvanets, Izdryk, Maria Matios, Ihor Pavlyuk are the top contemporary published writers to date.

Yuri Andrukhovych is an Ivano-Frankivsk-born Ukrainian prose writer, poet, and essayist. To date, the writer has published five novels, two volumes of essays, four poetry collections, and a cycle of short stories, as well as literary translations from English, German, Polish, and Russian.

Serhiy Zhadan is a Ukrainian poet, novelist, and essayist. Born in Eastern Ukrainian Starobilsk, Zhadan taught Ukrainian and world literature in early 2000s. In 2008 his novel "Anarchy" made it to the short list of the National Bestseller Prize. Critics receive Zhadan's works as an outstanding mix of individual style and modern literary tendencies. His prose is sometimes referred to as "poetic", while his free verse is called "prosaic".

Oksana Zabuzhko is a contemporary Ukrainian poet, writer and essayist. Born in Western Ukraine, Zabuzhko, who holds a doctorate degree in aesthetics, taught Ukrainian literature at the Harvard University and the University of Pittsburgh in 1994. Her controversial bestselling novel "Field Work in Ukrainian Sex" was translated in eight languages. The book focuses on the issues of self-identification, post-colonialism, and feminism. Her book "Let My People Go" won the Best Ukrainian documentary book award in 2006, her work "The Museum of Abandoned Secrets" – Best Ukrainian Book 2010.

The Ukrainian writer Maria Matios is the winner of the "Book of the Year 2004" and of the Taras Shevchenko National Award in 2005 (for her novel "Sweet Darusia"). The author of 12 volumes of poetry and prose is considered to be the most productive modern Ukrainian writer. Her most widely known works include: "Sweet Darusia" (2003-2005), "Nation" (2002-2003) and "The Short Life" (2001). Matios bases her books on her family history that has been preserved by the family through the centuries and goes back to 1790.

Ihor Pavlyuk is a Ukrainian writer and research worker who won the People's Taras Shevchenko Prize, the Hryhorii Skovoroda prize, the International Nikolai Gogol literary prize "Triumph". One of his most outstanding works is the novel "Forbidden Bloom" (2007).

Лекція Практичне заняття №36-37

Тема лекції: «Спортивні досягнення в Україні»

План лекції

1. Sport in lives of Ukrainians
2. Popular kinds of sport in Ukraine
   2.1. Football
   2.2. Ice hockey
   2.3. Rugby
   2.4. Golf
   2.5. Cricket
   2.6. Tennis
   2.7. Volleyball and beach volleyball
   2.8. Basketball
   2.9. Swimming
   2.10. Diving
   2.11. Paint ball
   2.12. Squash, badminton, ping-pong
   2.13. Fitness
3. The outstanding sportsmen of Ukraine
   3.1. Sergey Bubka
   3.2. The Klitschko brothers
   3.3. Vasyl Virastyuk
   3.4. Andriy Shevchenko
   3.5. Oksana Baiul
   3.6. Lilia Podkopayeva
   3.7. Yana Klochkova
   3.8. Oleksandr Usyk
   3.9. Denys Berinchyk
   3.10. Ilya Kvasha

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Зміст лекції

1. Sport in lives of Ukrainians

Sport in Ukraine has been worshiped since ancient times. At the times of Kyiv Rus the the world was covered with the fame of invincible warriors, who consider a duty to protect people and the fatherland. Centuries later, Cossacks – brave defenders of independent state – got the same glory.

Sport in Ukraine has been worshiped since ancient times. At the times of Kyiv Rus the the world was covered with the fame of invincible warriors, who consider a duty to protect people and the fatherland. Centuries later, Cossacks – brave defenders of independent state – got the same glory.

Ukraine was not once praised by strongmen - descendants of famous Cossacks - such as Ivan Poddubny – athlete of early 20th century who was considered as a follower of Cossacks kind. He was called "Iron John" and "Champion of Champions", as well as "Russian Hercules". Today Vasyl Virastyuk holds the title of "the strongest man in the world", a constant world champion in force-around.

Ukraine is a country of sports and healthy lifestyle. It is not a modern craze, but rather – a matter of honor and the choice of everyone.

Even at school children learn to love sport having physical training lessons. The most talented among them continue to exercise as their main activity, making a pretty successful career going in for sports for the entire life.

As in most countries all over the world, football has the first priority among other sports. It is the most popular game among children and adults. Football is actively developed and maintained at all levels. Ukrainian football clubs and the national team proudly represent the honor of the country within the international arena, and the glory of brave Ukrainian players such as Andriy Shevchenko, Andriy Voronin, Oleg Blokhin and others extends far beyond the country.

Due attention is paid to the Ukrainian basketball and hockey. Men who represent these kinds of sport spend their lives training and working on themselves to achieve the best results.

2. Popular kinds of sport in Ukraine

2.1. Football

Ukraine’s football league, although not as good as the English, Spanish, Italian or German ones, is still of a high standard (when they can be bothered) and contains two teams that are a match for most teams in Europe. They are Dynamo Kiev, who plays at the Lobanovsky Stadium in the very centre of Kiev, and Shakhtar Donetsk, who play in the newly-built Donbass Arena. Another Ukrainian the national range football teams worth to be mentioned are Metallist (Kharkiv), Dnepr (Dnipropetrovsk), Chernomorets (Odessa) and Karpaty (Lviv).

Tickets to their league games are very reasonably priced – usually about UAH 50, perhaps 10 times cheaper than for a game in England. They can usually be bought at the stadium in the week before the match. For matches in the European cups – when the best teams often come to Ukraine a couple of times a year – tickets are more expensive, and are harder to get hold of.

Football is one of the most popular sports in Ukraine. Dare to say – it is all-national male passion. You can watch the amateurs’ battles on the Hydropark grounds even in winter.

Non-professional football teams are more than just sport teams – these are male communities, embracing managers, self-employed, unemployed, students - anyone who addicts to this game. Ask around your local colleagues for information if you want to join it.

2.2. Ice hockey

Having gone on hard time, it got sponsor support from one of the Ukrainian oligarchs last year. Thus it started its official recovery. Hockey matches are held at The Sport Palace (the main national ice ground in Kiev), at The Terminal ice stadium (Brovary, Kiev satellite), at The Ice Arena (Kiev), at 'Drouzhba" Arena (Donetsk). The professional hockey league comprises 8 teams from Kiev, Kharkov, Donetsk, Vinnitza, Bila Tzerkva…

Amateur hockey never died here and gets well. Its popularity affected a few leagues were set up and amateur championship is held in some Ukrainian cities. As regards Kiev, you may join teams, which contain expats as well.

2.3. Rugby

Rugby is a fairly developed sport in the Former Soviet Union. Georgia have one of the world's top 15 teams with most of their players playing professionally in the elite league in France; Russia competed in the last World Cup, after which several of their players joined English clubs. Although Ukraine has not reached that level yet, it is not far behind. Kiev's team is called RC Argo and they also have a senior and ladies' squad. There are teams in Odessa (Politekhnik, the current Ukrainian champions), Ivano-Frankivsk ("Roland"), and Lviv ("Batyary").

Currently Rugby turn to be rather exotic sport for the Ukrainians and mostly popular for the expats here. For the past six years The Ukraine Rugby Federation in cooperation with the foreign community has organized an annual international Rugby Union tournament for boys aged 12-17 years. In autumn 2012 the tournament run over the local limit and hosted teams from Ukraine, Russia, Moldova and Latvia. The idea got its embodiment by combined efforts of the Kyiv Rugby Union community, led by Dimitri Samoylenko, Pavel Gugiev, Anthony Nichol and David Payne. For more information go to: John Marsh Rugby

2.4. Golf

There are a few Golf clubs around Ukraine. The most notable are located in Kyiv region ('GolfStream' and 'KievGolfClub'), Superior G.C. in Kharkiv, 'Golf Club' in Lugansk, 'Golfer' and 'Vik&Son' in Zaporizzhya, 'Odesa City Golf Club'. It is much easier to find mini-golf grounds: they entertain guests of some restaurant and recreational complexes in well-developed touristic destinations.

2.5. Cricket

There used to be a Kiev Cricket Club that played at the Voskhod stadium. Between 2003 and 2010 it organised an annual tournament, with 12 teams competing from as far away as Luhansk. It doesn't appear that the games were held in 2011, but you can get in touch with Kiev Cricket Club.

2.6. Tennis

If you prefer playing sport to watching it, Ukraine's cities all have several tennis courts. You may find a list of tennis courts and their contact details on Web. There is no problem with the open-air lawn tennis courts in big cities – this game is rather popular with

middle class. Though in cold season you should try hard to find a schedule 'window' at peak times. Nice quality indoor courts are concentrated at premium fitness clubs and some specialized ex-Soviet sport complexes. Amateur tennis associations hold tournaments both for adults and kids. Odessa hosts 'Discovery' all-Ukrainian amateur championship yearly.

2.7. Volleyball and beach volleyball

Similar to football is one of the most popular sports in Ukraine. Despite two professional leagues here - male and female, it isn't able to get over the national rank. In opposite, amateur volleyball is very popular in the big cities. They have their local amateur championships – sometimes even a few in each. The teams usually rent sport halls in schools for taking trainings and meet 2-3 times a week.

Beach volleyball is well developed as mostly amateur sport too. Hydropark beaches 'Olmeca' and 'Molodezhka' in Kiev, 'Chkalovsky' beach in Odessa, beaches in Dnipropetrovsk and Zaporizzhya host summer tournaments each season.

2.8. Basketball

In opposite to many other kinds of sport, basketball has happily developed since Ukraine got its Independence. Clubs of the professional league are relevantly sponsored by big business, hold regular championships and participate international players transfers. The national team takes part in European and World tournaments. Ukraine will host the European basketball championship in 2015.

2.9. Swimming

Due to keeping professional swimming pools is rather expensive business, their number is extremely low. They are mostly present just in Kiev, though can be counted by one hand fingers that is inadequate to 4-million city.

Well fit-out and modern swimming pools are at the top-rank fitness centres or hotels. Commonly mass-oriented places are overcrowded at peak times. Many of them are behind the time by facilities, methods of water purification, available services etc.

The average price for a swimming session in Kiev is about UAH 50-70.

2.10. Diving

Diving centres are actually based at the swimming pools (e.g. The Palace of underwater swimming or The swimming pool of The National technical university of Ukraine (KPI) in Kyiv) or operate seasonably at the south coast of the country. Though the Black sea can't compete with such diving Mecca's as the Red sea or the Caribbean sea, it provides with a chance to find sink ships and airplanes, dated 18-20 centuries. Underwater hunting has its addicts both in the seas and big rivers all year-round in Ukraine as well.

2.11. Paint ball

Paint ball is rather popular option for taking adrenaline at leisure. There are a few clubs and plenty of playgrounds in big cities. Some paint ball clubs arrange game sessions in different locations in parks in and outside big cities.

2.12. Squash, badminton, ping-pong

Facilities for squash, badminton, ping-pong are available at the large fitness-centres or at the sport complexes at some universities and institutes. In summer the Ukrainians prefer to

play open-air. The Kyiv locals like outdoor sport facilities area on Hydropark. The aged ping-pong players are usually lounging around to play for money. Think twice to agree: nevertheless the age of 50 and even more, they are obviously professionals.

Commonly equipment to rent is extra-charged. It is often old and depreciated so if you are going to do sports regularly, it is better to purchase your own.

2.13. Fitness

Fitness entered Soviet area, including Ukraine, in 80-s of the last century. It was some kind of fashion, mostly – for female. Male noticed bodybuilding upon blockbusters with Schwarzenegger, Stallone and others starring went like a bomb on video screens. Wellness culture development has been just in the way in Ukraine. Whereas women are more conscious about keeping feet, many male prefer "beerball" with friends, especially outside of megapolises. You can meet just few joggers in the Ukrainian streets. Male, taking up sport, may be met on football, volleyball or tennis play-ground mostly. Some of them addict body-building and visit different kind of "kachalka" (work out machines halls): from open-air free of charge grounds nearby home to professional fitness clubs. Despite the increasing number of fitness centres of all kinds the market is not saturated yet (especially outside Kiev).

Fitness centers may be classified, first of all, by their charge, additional services range, space, client service level:

- **elite & premium** clubs (e.g. 'Sofiyskiy, 'Leonardo', 'Grand Prix' or 'The 5th element' in Kyiv): average cost of the annual membership card is UAH 20,000-45,000;
- **business class** sport clubs (e.g. 'Kiev Sport Club', 'Aquarium'): UAH 9,000-18,000;
- **standard class** (e.g. 'BestFit', 'FreeStyle', 'GoldFitness'): UAH 3,000-8,000;
- **econom and lower**. Settlements of this range are very small and commonly offer just fitness and/or work out classes and basic facilities. Such kind of work out gyms is called "kachalka" in Russian. In opposite to higher categories, where 3 months membership card is considered as a threshold, the econom clubs sell monthly cards (UAH 120-500) as well as the long-term.

While purchasing the long-term card, make a proper study of all conditions of the contract. Don't neglect using the probation training (if available). The local clubs are very sophisticated in promo actions.

Foreign language is a common obstacle to communicate the coaches and ad-hoc specialists here. Whereas the receptionists and managers (in premium clubs mostly) speak English, just limited number of fitness and wellness staff has fairly good command of it.

P.S. It is a **legendary fitness location in Kyiv** - so-called '**Kachalka'** on Hydropark. The open-air area equipped with various workout machines and devices attracts real bodybuilding and fitness addicts all-year round. A group of volunteers cares and develops the numerous self-made equipment. Partnership atmosphere and swimming in the Dnieper is an additional bonus. This place is not recommended for comfort-conscious.

3. The outstanding sportsmen of Ukraine

3.1. Sergey Bubka

Sergey Bubka is a famous Soviet and Ukrainian pole vaulter, the outdoor world record holder, President of the National Olympic Committee of Ukraine, Vice President of IAAF.

Sergey started his sport career on the world athletics scene at the age of 18 at the European Junior Championships, where he took the seventh place in pole vault. In 1984 Sergey set his first world record in Bratislava, clearing 5.85 meters. Several weeks later he beat his own record to 5.6 meters.

In 1985 Sergey Bubka set the record, which was of real historical significance. He was the first athlete in the world to clear more 6-meter mark.

During the next ten years he was breaking his own record 35 times and improved it to 6.14 meters (1994). Since then Bubka's record was not beaten by any other sportsmen and is still considered to be the best in the world.

3.2. The Klitschko brothers

Vitalii (1971) and Vladimir (1976) Klitschko are world famous Ukrainian heavyweight boxers, world champions, PhD in physical education and sport. Vitalii, the elder brother, is also a politician and the mayor of Kyiv (since 2014).

Vitalii and Vladimir had their professional boxing debut in 1996 in Hamburg, where both brothers defeated their opponents. In 1999 Vitalii won his first world title (WBO) and set a world record — he won 25 serial battles by knockout during the first 6 rounds.

In 2008, after four-year break, Vitalii regained the WBC title in the battle against Samuel Peter and realized brothers' cherish dream – to be world heavyweight champions simultaneously. By that time Vladimir was already world heavyweight champion (WBO, IBF, IBO). Three years later in 2011 he won one more title (WBA), so Klitschko brothers became the holders of all World Heavyweight Titles.

Vitalii Klitschko finished his sport career in 2013. He had a total of 47 fights, 45 wins and 2 losses. Nowadays Vladimir continues his professional career, by 2017 he had 68 fights with 64 wins and 4 losses.

3.3. Vasyl Virastyuk

Vasyl Virastyuk is a legendary Ukrainian athlete, the strongest man in Ukraine, holder of World's Strongest Man title, Merited Master of Sports of Ukraine, an actor.

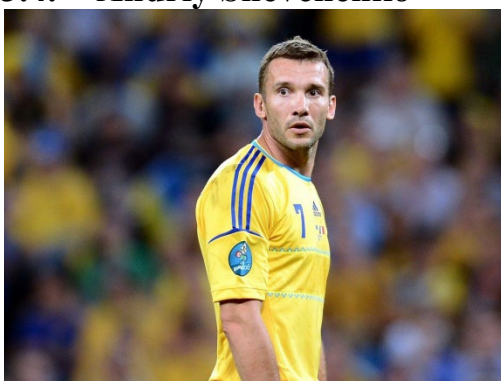
In 2000 he participated in Ukraine's Strongest Man competitions where he won and got the title "the Strongest man in Ukraine". He was the only strongman in Ukraine who defended his title 6 times (2000-2007).

In 2004 Ukrainian strongman made his best to place ahead ex-champions and to win the new title "World's Strongest Man".

Vasyl Virastyuk set a lot of records:

- pulled 5 trams with the mass of 101,5 t;
- carried 2 trunks (342 kg) for 19 m;
- pulled 10 vehicles (16,5 t) for 18,5 m per minute;
- moved on 15 m 7 vehicles (11 t).

3.4. Andriy Shevchenko



Andriy Shevchenko (Sheva) is a famous Ukrainian footballer, head coach of the Ukraine national team, the best striker in the history of Ukrainian football, the Golden Ball holder.

Shevchenko's football career can be divided into four basic stages:

- Dynamo Kyiv (1997-1999). In 1997 Shevchenko became famous throughout Europe in match against Barcelona, when he scored three goals. For his first "Dynamo" period Sheva scored 106 goals.
- Milan (1999-2006). In 1999 Shevchenko left Dynamo for Milan. During the first season he became the best striker and scored 24 goals. In 2003 Milan won the Champions League and Shevchenko was awarded "Coppa Italia", then "UEFA Super Cup". Sheva finished his last season in Milan with 175 goals.
- Chelsea (2006-2008). Although in his first match for Chelsea Andriy scored a goal, his football career in England wasn't successful. Besides he went through two operations and his back injury. He decided to return back to Milan, after then to Dynamo Kyiv.

- Ukraine national team. Shevchenko debuted in Ukraine national team in 1995. He played 111 matches and scored 48 goals. Since 2016 Andriy Shevchenko was appointed as the head coach of Ukraine national team.

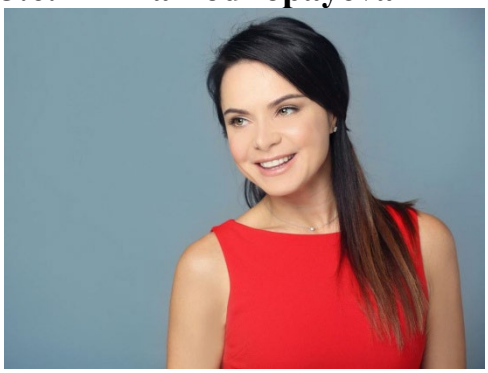
3.5. Oksana Baiul

In the beginning of 1993 young Ukrainian figure skater debuted in European Championships. Despite her two falls in free program Oksana managed to perform extremely complicated triple loop jump and triple lutz and took the silver medal. Also in 1993 her amazing performance in World Championships in Prague left no chance to other participants and brought Oksana Baiul the gold medal.

In 1994 during Winter Olympics Oksana Baiul skated one of the most perfect programs in the figure skating history. She took the Olympic gold medal but her victory wasn't easy. Prior to Baiul's performance during the practice skating she collided with German skater who injured Oksana's shin with a skate blade. But even pain and three stitches on her leg couldn't prevent Oksana Baiul from becoming the Olympic Champion.

After the Olympic Games Oksana moved to the USA, where she went on skating professionally.

3.6. Lilia Podkopayeva



Lilia Podkopaeva is a prominent gymnast from Ukraine, Merited Master of Sports of Ukraine, world-around and Olympic Champion, the Judge of International Category.

In 1995 Lilia won European Cup and got the title of world all-around champion in artistic gymnastics. The next year Ukrainian gymnast won the gold medal at the European Championships. After all her victories Lilia set the next target – the Olympic Games. Hard and long trainings, uncompromising work above itself and huge financial and moral costs helped Lilia Podkopaeva to win two gold medals at Summer Olympics in Atlanta in 1996. She took the first place in all-around event and in floor exercises. Her "double front somersault with half-twist" became her best-known item, which is still unattainable.

After retirement Lilia Podkopaeva switched to coaching. In 2012 she moved to the USA, where she gives master classes and lectures.

3.7. Yana Klochkova

Yana Klochkova is an outstanding Ukrainian swimmer, four-time Olympic Champion, the most titled Ukrainian Olympic champion in the history of the Olympic games.

Yana's sports biography is replete with victories and medals from the early years of her fascination with swimming. The start of her sport career at the age of 14 was marked by the second place at European Junior Championships in Denmark. One year later she won the gold medal in Glasgow.

Klochkova was three-time European champion in 1999 and 2000 (Lisbon, Helsinki, Valencia). The sportsman set 50 Ukrainian records in different types of swimming: medley, freestyle, backstroke and butterfly.

Ukrainian "goldfish" also won the World Championships in a short course in 1999 in Hong Kong. She went on winning new gold and silver medals during 2000 – 2004.

Her participance at the Olympic games brought Yana five medals:

- two gold and one silver medal in Sydney (2000);
- two gold medals in Athens (2004). In Athens Yana got the title "Swimmer of the year".

3.8. Oleksandr Usyk

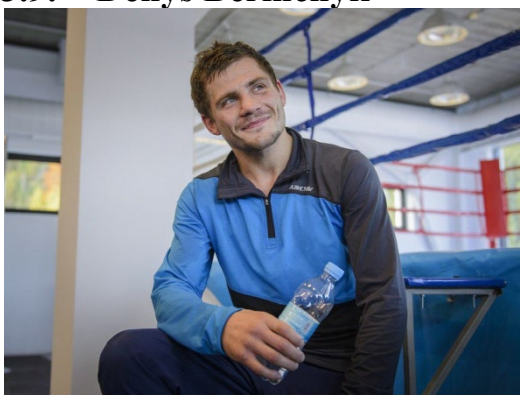
Oleksandr Usyk is a prominent professional boxer from Ukraine, WBO world champion, Olympic Champion, Honored Master of Sports of Ukraine.

He began his amateur career in 2006 at European Championships, where he took the third place. In 2008 in Liverpool Usyk defeated all his opponents and won the gold medal. But he achieved his real success at the Olympic Games in 2012, London, when he beat three serious boxers from Russia, Bulgaria and Italy and won the Olympic gold medal.

In 2013 Oleksandr Usyk decided to start professional boxing career. He signed a contract with the Klitschko brothers' promotion company "K2 Promotions". In 2014 Oleksandr won his first WBO interim junior-cruiserweight title defeating Daniel Bruwer from South Africa. He defended his title four times to rise up the rang.

Summing up all professional Usyk's fights he had 11 wins and no losses.

3.9. Denys Berinchyk



Denys Berinchyk is a famous Ukrainian professional boxer, Merited Master of Sports, Olympic Silver Medalist (2012), World Championship Silver Medalist (2011). In the 2012 Summer Olympics in London Denys Berinchyk competed in light welterweight boxing. He gracefully defeated Swedish, Mongolian and Australian opponents, but lost in the final he and took the silver medal.

During 2012 -2014 Denis took part in the World series of boxing in the team "Ukrainian Atamans". In 2015 Berinchik decided to switch to professional boxing and signed a contract with the Klitschko brothers' company "K2 Promotions". He had 5 fights with 5 wins and no loss.

3.10. Ilya Kvasha

Ilya Kvasha is a perspective diver from Ukraine, Olympic Bronze medalist (2008), the sevenfold European champion, Master of Sports of International Class.

His first sporting achievements young Ukrainian diver demonstrated in 2004, when he won gold at European championships in 1m and 3m springboard. He also took gold six more times at the championships in Europe. At the World Championships he won silver medals in 2006, 2013, 2015.

2008 Summer Olympics in Beijing made Ilya Kvasha world famous. He won the bronze medal in 3 m spring synchro together with Aleksey Prigorov. In 2012 Ilya and Aleksey competed at Summer Olympics in London, where they took the 4th place. Rio 2016 Olympic Games brought Ilya Kvasha the 6th place.

Лекція №38

Тема лекції: «Вступ. Зварювання»

План лекції

1. Introduction
2. Basic Principles Of Welding
3. Types of welding

3.1. Pressure Welding
3.2. Fusion Welding
3.3. Stick Welding
3.4. TIG Welding
3.5. MIG Welding
3.6. Flux Cored Arc Welding

4. Welding Equipment and safety

Література:

1. Гричин О.В., Ульянова О.В. Англійська мова для інженерів-зварювальників: підручник / С.В. Гричин, О.В. Ульянова; Юрзький технологічний інститут ім. – Томськ: Видавництво «Томський політехнічний університет», 2011. – 164 с. : іл.

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.

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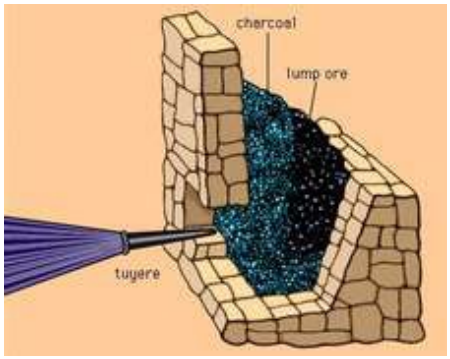
5. https://gowelding.org/welding/

Зміст лекції

1. Introduction

Welding, technique used for joining metallic parts usually through the application of heat. This technique was discovered during efforts to manipulate iron into useful shapes. Welded blades were developed in the 1st millennium CE, the most famous being those produced by Arab armourers at Damascus, Syria. The process of carburization of iron to produce hard steel was known at this time, but the resultant steel was very brittle. The welding technique—which involved interlayering relatively soft and tough iron with high-carbon material, followed by hammer forging—produced a strong, tough blade.



In modern times the improvement in iron-making techniques, especially the introduction of cast iron, restricted welding to the blacksmith and the jeweler. Other joining techniques, such as fastening by bolts or rivets, were widely applied to new products, from bridges and railway engines to kitchen utensils.

Modern fusion welding processes are an outgrowth of the need to obtain a continuous joint on large steel plates. Rivetting had been shown to have disadvantages, especially for an enclosed container such as a boiler. Gas welding, arc welding, and resistance welding all appeared at the end of the 19th century. The first real attempt to adopt welding processes on a wide scale was made during World War I. By 1916 the oxyacetylene process was well developed, and the welding techniques employed then are still used. The main improvements since then have been in equipment and safety. Arc welding, using a consumable electrode, was also introduced in this period, but the bare wires initially used produced brittle welds. A solution was found by wrapping the bare wire with asbestos and an entwined aluminum wire. The modern electrode, introduced in 1907, consists of a bare wire with a complex coating of minerals and metals. Arc welding was not universally used until World War II, when the urgent need for rapid means of construction for shipping, power plants, transportation, and structures spurred the necessary development work.

Resistance welding, invented in 1877 by Elihu Thomson, was accepted long before arc welding for spot and seam joining of sheet. Butt welding for chain making and joining bars and rods was developed during the 1920s. In the 1940s the tungsten-inert gas process, using a nonconsumable tungsten electrode to perform fusion welds, was introduced. In 1948 a new gas-shielded process utilized a wire electrode that was consumed in the weld. More recently, electron-beam welding, laser welding, and several solid-phase processes such as diffusion bonding, friction welding, and ultrasonic joining have been developed.

2. Basic Principles Of Welding

A weld can be defined as a coalescence of metals produced by heating to a suitable temperature with or without the application of pressure, and with or without the use of a filler material.

In fusion welding a heat source generates sufficient heat to create and maintain a molten pool of metal of the required size. The heat may be supplied by electricity or by a gas flame. Electric resistance welding can be considered fusion welding because some molten metal is formed.

Solid-phase processes produce welds without melting the base material and without the addition of a filler metal. Pressure is always employed, and generally some heat is provided. Frictional heat is developed in ultrasonic and friction joining, and furnace heating is usually employed in diffusion bonding.

The electric arc used in welding is a high-current, low-voltage discharge generally in the range 10–2,000 amperes at 10–50 volts. An arc column is complex but, broadly speaking, consists of a cathode that emits electrons, a gas plasma for current conduction, and an anode region that becomes comparatively hotter than the cathode due to electron bombardment. A direct current(DC) arc is usually used, but alternating current (AC) arcs can be employed.

Total energy input in all welding processes exceeds that which is required to produce a joint, because not all the heat generated can be effectively utilized. Efficiencies vary from 60 to 90 percent, depending on the process; some special processes deviate widely from this figure. Heat is lost by conduction through the base metal and by radiation to the surroundings.

Most metals, when heated, react with the atmosphere or other nearby metals. These reactions can be extremely detrimental to the properties of a welded joint. Most metals, for example, rapidly oxidize when molten. A layer of oxide can prevent proper bonding of the metal. Molten-metal droplets coated with oxide become entrapped in the weld and make the joint brittle. Some valuable materials added for specific properties react so quickly on exposure to the air that the metal deposited does not have the same composition as it had initially. These problems have led to the use of fluxes and inert atmospheres.

In fusion welding the flux has a protective role in facilitating a controlled reaction of the metal and then preventing oxidation by forming a blanket over the molten material. Fluxes can be active and help in the process or inactive and simply protect the surfaces during joining.

Inert atmospheres play a protective role similar to that of fluxes. In gas-shielded metal-arc and gas-shielded tungsten-arc welding an inert gas—usually argon—flows from an annulus surrounding the torch in a continuous stream, displacing the air from around the arc. The gas does not chemically react with the metal but simply protects it from contact with the oxygen in the air.

The metallurgy of metal joining is important to the functional capabilities of the joint. The arc weld illustrates all the basic features of a joint. Three zones result from the passage of a welding arc: (1) the weld metal, or fusion zone, (2) the heat-affected zone, and (3) the unaffected zone. The weld metal is that portion of the joint that has been melted during welding. The heat-affected zone is a region adjacent to the weld metal that has not been welded but has undergone a change in microstructure or mechanical properties due to the heat of welding. The unaffected material is that which was not heated sufficiently to alter its properties.

Weld-metal composition and the conditions under which it freezes (solidifies) significantly affect the ability of the joint to meet service requirements. In arc welding, the weld metal comprises filler material plus the base metal that has melted. After the arc passes, rapid cooling of the weld metal occurs. A one-pass weld has a cast structure with columnar grains extending from the edge of the molten pool to the centre of the weld. In a multipass weld, this cast structure may be modified, depending on the particular metal that is being welded.

The base metal adjacent to the weld, or the heat-affected zone, is subjected to a range of temperature cycles, and its change in structure is directly related to the peak temperature at any given point, the time of exposure, and the cooling rates. The types of base metal are too numerous to discuss here, but they can be grouped in three classes: (1) materials

unaffected by welding heat, (2) materials hardened by structural change, (3) materials hardened by precipitation processes.

Welding produces stresses in materials. These forces are induced by contraction of the weld metal and by expansion and then contraction of the heat-affected zone. The unheated metal imposes a restraint on the above, and as contraction predominates, the weld metal cannot contract freely, and a stress is built up in the joint. This is generally known as residual stress, and for some critical applications must be removed by heat treatment of the whole fabrication. Residual stress is unavoidable in all welded structures, and if it is not controlled bowing or distortion of the weldment will take place. Control is exercised by welding technique, jigs and fixtures, fabrication procedures, and final heat treatment.

3. Types of welding

3.1. Pressure Welding

Pressure welding is a process in which external pressure is applied to produce welded joints either at temperatures below the melting point, which is solid state welding, or at a temperature above the melting point, which is fusion state welding. The atoms are moved together to a distance that is equal to or less than the equilibrium inter atomic separation distance. This type of welding process requires the two pieces being joined to be extremely clean and especially free of oxides and non metallic films which must be removed from the surfaces of the metals by wire brush, so as to ensure the strongest welded joint possible. Pressure welding techniques are used primarily on metals that are highly ductile or whose ductility increases with increasing temperatures. Types of commonly used pressure welding processes in industrial applications are:

- Cold pressure welding is used for joining sheets, wires and electric components.
- Explosive welding is used when joints of dissimilar metals are to be welded.
- Ultrasonic welding, when thin sheets are to be joined.
- Percussion welding is utilized for joining dissimilar metals.
- Friction welding is used when similar or dissimilar metals are to be joined.
- Induction welding is used for welding pipes
- Inertial welding is for welding of high strength alloys.

3.2. Fusion Welding

Fusion welding produces welded joints by localized heating of the edges of the base metals, above their melting temperature. A filler metal may or may not be used, and no external pressure is required. Inert gases may or may not be used to enhance the quality of the weld created. The welded joint is achieved after solidification of the fused weld pool. Metals to be joined must possess some degree of mutual solubility in solid state. Metals that are completely soluble in the solid state, exhibit the highest degree of weld ability, and metals with no solubility in the solid state, are not weld able, for which an intermediate soluble metal is used.

3.3. Stick Welding

Stick Welding is a slang term commonly used for Shielded Metal Arc Welding or “SMAW". Stick welding is the most basic and common type of welding processes used. It is

also the first process learned in any welding school. Stick is the most trouble free of all of the welding processes and is the fundamental basis for all the skills needed to learn how to weld!

Stick welders have four main components:

1. A ground lead or clamp
2. A welding lead or stinger
3. A constant amperage power source
4. The electrode or welding rod to weld with

The process is simple! The ground clamp is attached to the work or metal to be welded. Then the welding lead, or stinger, gets the electrode inserted in it. Finally, the power supply is turned on and only requires the user to strike the metal to ignite it. Once that is done. the arc starts and the electrode begins to burn. This creates a shielding gas and deposits metal into the joint that is being welded. The slag from the electrode needs to be cleaned or chipped off as soon as the weld is finished.

3.4. TIG Welding

TIG Welding is also a slang term commonly used for Gas Tungsten Arc Welding or “GTAW". TIG welding also goes by the term HeliArc welding. TIG welding is the most difficult of the processes to learn, and is the most versatile when it comes to different metals. This process is slow but when done right it produces the highest quality weld! TIG welding is mostly used for critical weld joints, welding metals other than common steel, and where precise, small welds are needed.

TIG welders have six main components:

A constant amperage power source (many times a Stick welding power supply).

A ground lead or clamp.

A welding lead or TIG Torch.

A non-consumable Tungsten electrode to produce the arc (the Tungsten electrode does not add to the weld joint).

Shielding gas to protect the weld area from the air (typically pure Argon gas).

The filler wire to add to the weld joint with the other hand.

TIG welding equipment varies greatly in the sense of bells and whistles. The simplest TIG welders are a Stick welder power supply with a TIG torch attached to the welding lead, and the other hose is attaches to a bottle of Argon gas. This is how the largest defense contractors and engineering companies set-up there TIG welders for pipe. The way this process works is simple. First the ground clamp is attached to the metal to be welded, a Tungsten electrode is inserted into the TIG torch, the Argon gas is turned on and now the torch is feeding Argon gas through the torch, the power supply is turned on, and now all it takes is a scratch of the Tungsten to strike an arc. Once the arc strikes the Tungsten just produces an arc and starts to melt the metal, after that you simple add filler wire to the joint with the other hand.

3.5. MIG Welding

MIG Welding is a slang term that stands for Metal Inert Gas Welding, the proper name is Gas Metal Arc Welding or “GMAW", and it is also commonly referred to as “Wire Wheel Welding" by Unions. MIG Welding is commonly used in shops and factories. It is a high production welding process that is mostly used indoors

MIG Welders have five main components.

- A constant voltage power supply.

- A wire feed to feed the filler wire through the welding lead to the MIG gun.
- A ground lead or clamp.
- A welding lead or MIG gun.
- Shielding gas to protect the weld area from the air.

MIG welding is not that simple when it comes to setting up the equipment but the skill required is a lot less then Stick welding. The way MIG welding works is you attach the ground clamp to the work then power source is turned on and finally the shielding gas needs to be turned on. After that you need to set the voltage, wire feed speed that is counted in IPM (inches per minute), and shielding gas flow rate that is counted in CFH (cubic feet per hour). Then simply hit the trigger and the MIG gun starts feeding shielding gas and wire to the weld joint. Once the wire hits the weld joint it begins to arc and the wire melts and starts filling the joint.

3.6. Flux Cored Arc Welding

Flux Cored Arc Welding “FCAW" is nothing more than a different welding wire or electrode for a MIG welder! FCAW wire is a hollow or tubular wire that has a flux inside of it that provides a shielding from the air when it is welding. What this does is help a MIG welder to weld in windy conditions and it increases how much weld can be welded per hour. The powder flux inside also has metal mixed in that increase the weld deposit rate.

FCAW is the fastest of all of the manual welding processes. FCAW wire has two types:

Self Shielding – Self shielding wire is just that! It has enough flux inside that no other shielding source is needed.

Dual Shielding – Dual Shield is a wire that helps shield the weld but also needs a source of gas just like a MIG welder.

Flux cored arc welding is similar to Stick welding when it comes to slag. It also has a slag that covers the weld that needs to be cleaned after the weld is finished.

4. Welding Equipment and safety

All welders need to respect the job and the equipment being used. The following is a list of safety equipment and precautions

- Wear welding gloves

- Wear eye protection-For arc-type welding, a much darker lens is required than for gas welding.
- Keep a suitable Class ABC fire extinguisher nearby while welding.
- Keep the work area clean and free of flammables and obstructions.

Welding Safety Equipment

Лекція Практичне заняття №39-40

Тема лекції: «Кар'єра зварювальника в Україні та за кордоном»

План лекції

1. Faculty of Welding Departments
2. Training Centers
3. STC «Paton Welding Institute»

Література:

1. Гричин О.В., Ульянова О.В. Англійська мова для інженерів-зварювальників: підручник / С.В. Гричин, О.В. Ульянова; Юрзький технологічний інститут ім. – Томськ: Видавництво «Томський політехнічний університет», 2011. – 164 с. : іл.
1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.
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4. https://paton.ua/en
5. https://www.mau.com.ua/training-and-certification-centers.php

Зміст лекції

1. **Faculty of Welding Departments**

With outstanding organizational abilities of the prominent scientist, the founder of the Ukrainian welding school Yevhen Oskarovych Paton, Kyiv became the world's largest center of welding science. In 1948, the Faculty of Welding was established in the KPI, initially it had only one department, Welding Engineering, the founder and the first head was professor Y.O. Paton.

As a separate unit the Faculty of Welding existed in the KPI to 1955, when merged with the Faculty of Mechanics, establishing the Faculty of Mechanical Engineering. The renewal of the Faculty of Welding was initiated by academician B.E. Paton in 1975. One of the establishers and the first dean was Associate of Science, Professor A.M. Slyvinskii. In 1977, construction of the building for the Faculty of Welding was completed. The total area was 6000 m2, and more than 300 m2 of which were laboratories.

In 2008 Faculty of Welding has been certified by the National Authority of the International Institute of Welding and Training International Welding Engineers.

At the Faculty professionals with fundamental knowledge of general engineering and applied subjects are trained, they can develop innovative bonding technologies of modern materials, including biological substance, solve the urgent problems of construction of any materials, and develop new welding equipment, implement automated and robotic systems, design unattended technologies of welded structures, conduct research in the field of welding and related technologies. Curricula includes the internship, and for the best students - internships in leading specialized institutions of the EU and U.S.A. On a contract basis you may receive the second higher education in economics and on the special program

"International Welding Engineer» (IWE, International Welding Engineer) with the issuance of an international certificate; here works Joint Ukrainian - German Faculty.

Employment of specialists is provided by the state order, individual orders and free choice. Graduates work as managers, leading experts of oil and gas, aerospace, shipbuilding, metallurgy, instrument-making, machinery and other important sectors of the economy; scientific researchers and developers of advanced welding materials, processes, technologies; computerized and automatic-control systems.

2. **Training Centers**

ODESSA MARITIME TRAINING CENTRE

Recognizing the importance of sufficient trainings & education as a basis for selection seamen for Principals we have established close and fruitful relations with the Seafarer's Training and Certifying Center (TCCS) located in Odessa, approved by Det Norske Veritas, and OTI (Baku), accredited to teach Basic Offshore Safety Induction and Emergency Training (BOSIET), Further Offshore Emergency Training (FOET) and HUET (Helicopter Underwater Escape Training) to the standards set by The Oil & Gas Academy (OPITO). The training programs of the both Training Centers appropriate mandatory requirements of the MARPOL & HSE programs and STCW'95 based on the IMO model courses.

16, Pastera Street, Odessa, Ukraine
+38 (048) 723 86 83
www.tccs.odessa.ua

LERUS TRAINING CENTRE

Lerus Training Centre will provide realistic offshore training solutions in a safe and controlled environment for all students. Our experienced instructors ensure that delegates receive personal attention and receive all the training necessary to inpart reassurance and confidence should they be involved in future potential emergencies. The main goal of Lerus Training Centre is to improve the competence level of marine personnel and ensure they are able to perform duties and complete operations safely in the offshore oil & gas industry.

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+38 (048) 729 91 25
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OCCUPATIONAL TRAINING INTERNATIONAL (OTI)

Occupational Training International is an international company, based in the Sultanate of Oman with a branch in Azerbaijan and internationally recognised as a key Health and Safety Skills training provider to the Oil and Gas Industry in the region. OTI has been successfully delivering HSE training and Offshore Survival courses since 1998.

Izmir Plaza, 2nd floor, 1034 Izmir Street 7A, Yasamal District, Baku, AZ1065
Tel.: (994 12) 447 47 11 /12 /13
www.oti.az

EDUCATIONAL-TRAINING COMPLEX "ADMIRAL"

The main goal of Admiral Training Centre is to provide their customers with the highest

quality and relevant training available in the educational market

15 B.Arnautskaya Street, Odessa, Ukraine
+38048 799 68 88
www.admiral.od.ua

SEAFARERS TRAINING CENTRE (STC) ("Lesozavodsk")
Seafarers training centre (STC) provides training of sea-going personnel according to requirements of International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW 78/95) , as well as training and upgrading of ratings. The number of training courses which are offered by the Centre totals 51.

office 325, Kanatna Street, 42, Odesa, Ukraine
+380 (482) 35-81-13
21/29 9 Yanvarya Street, Kherson, Ukraine
+380 (552) 49-61-62
http://seafarer.od.ua/

"AVANT" TRAINING CENTRE OF SEAFARERS
"AVANT" Seafarers Training Centre was established in April 2003 as a maritime training service provider by capable and experienced maritime professionals. "AVANT" has developed in recent years to one of the biggest training centers in Ukraine having statutory license by the Ministry of Education and Science and the Ministry of Infrastructure of Ukraine.
"AVANT" standards of training are founded in accordance with the provisions of STCW 78, as amended, Regulation I/8 for "Quality Standards System" (QSS) monitored, approved and certified in line with the training standards of ABS (American Bureau of Shipping). ABS is a QSS organization and approves STCW training courses on behalf of the United States Coast Guard.

93 Pobeda str., Aleksandrovka, Iljichyovsk, Odessa reg., Ukraine
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http://tcsavant.com/ru/contacts

ENGINEERING-ATTESTATION CENTER "PROMETEY"
MAU works in close co-operation with the Engineering-Attestation Center "Prometey" (Collective enterprise of the Society of Welders of Ukraine). Each candidate for employment with the Ukrainian and foreign companies in a capacity of welders, prior to signing the contract, has to pass thorough testing of his professional skills by the experienced instructors from the "Prometey" staff, certified by the national and international authorities. Should the candidate's level of practical skill or theoretical background be found insufficient, he will be advised to improve, by taking intensive course of welding pursuant to his specialization. Modern equipment, used in daily practice of "Prometey", enables the candidates to get well familiarized with welding apparatus used worldwide.
Welding materials, used in the course of testing/teaching, are all certified, and Welding procedures are all approved by the leading classification societies.

Thus fruitful co-operation of MAU with "Prometey" ensures supply of high-skilled manpower to our Customers.

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3. **STC «Paton Welding Institute»**

The E.O.Paton Electric Welding Institute (PWI) of the National Academy of Sciences of Ukraine is the scientific-technical complex by its structure. It includes: experimental design-technological bureau, experimental workshops, three pilot plants, several engineering centers. In all subdivisions of the Institute the staff is about 3500 persons, 1700 of them are working at the Institute proper. The scientific potential of the Institute is 300 staff scientists, including 8 academicians and 5 correspondent members, 72 Doctors and more than 200 Candidates of Techn. Sci. The main directions of the Institute scientific activity:

integrated studies of nature of welding, brazing, spraying and related processes, creation on their basis of new high-efficient technologies, equipment and materials;

study of strength and service properties of welded structures, development of principles and fundamentals of their designing, improvement of reliability, durability and service life;

automation and mechanization of processes of welding and related processes;

creation of new technologies and equipment of electrometallurgical production of extra-quality alloys and composite materials and products of them.

Over the years of the Institute activity its staff members received more than 6500 author’s certificates, about 2600 patents of Ukraine, Russian Federation and foreign patents, more than 150 licenses were sold to the USA, Japan, Russia, Sweden, France, China and other countries. More than 60 developments, realized and implemented into the national economy by the Institute staff members in collaboration with industrial organizations were awarded the Lenin and State Prizes in the field of science and technology, prizes after the names of outstanding scientists of Ukraine and other prizes.

Лекція Практичне заняття №41-42

Тема лекції: «Історія зварювання»

План лекції

1. When was welding invented?
2. Who invented it?
3. How has modern welding changed?

Література:

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Зміст лекції

1. WHEN WAS WELDING INVENTED?

As you might imagine, welding has been around for quite some time. In fact, we can assume welding existed in some form as far back as the Iron Age and the Bronze Age. There is evidence that the Egyptians learned to weld iron together, and we have found small gold boxes with lap joints pressure welded from over 2,000 years ago.

However, the type of welding prevalent then and found in the Middle Ages was a very rudimentary type of welding that typically involved simply hammering two pieces of metal together under heat until they joined. Conventional welding as we know it did not appear until the 19th century.

2. WHO INVENTED IT?

There is no one person we can credit with the invention of welding. Some of the earliest inroads toward traditional welding came about as early as 1800. In that year, Sir Humphry Davy produced the first electric arc between two carbon electrodes through use of a battery. In 1836, Edmund Davy discovered acetylene. But it wasn't until 1881 that true welding was invented.

It started with August De Meritens, who used arc heat to join lead plates together. A Russian student of his, named Nikolai Benardos, then patented a method of electric arc welding with carbon rods. After that, welding processes advanced very quickly. Nikolai Slavynov figured out how to use metal electrodes for welding, and following this, C.L. Coffin, an American engineer, discovered an arc welding process using a coated metal electrode that became the precursor of shielded metal arc welding.

3. HOW HAS MODERN WELDING CHANGED?

Since the 19th century, people have developed more and more efficient techniques for accurate, fast and effective welding. Today, we even have robotic welding, a method growing in popularity that uses computer control to weld metal much more quickly and

accurately than is possible through manual welding. It also greatly reduces or eliminates any risks to human workers. One can only imagine what amazing new welding processes the 21st century will bring.

Fairlawn Tool performs high-quality automated welding, along with tube bending, CNC turret punching and a wide array of other state-of-the-art metal fabrication services to meet your metal working needs. To learn more about welding and other metal fabrication processes, or to find out how Fairlawn Tool can help your business, contact us today.

Middle Ages

Welding can trace its historic development back to ancient times. The earliest examples of welding come from the Bronze Age. Small gold circular boxes were made by pressure welding lap joints together. It is estimated that these boxes were made more than 2,000 years ago. During the Iron Age the Egyptians and people in the eastern Mediterranean area learned to weld pieces of iron together. Many tools were found that were made in approximately 1000 B.C.

During the Middle Ages, the art of blacksmithing was developed and many items of iron were produced that were welded by hammering. It was not until the 19th century that welding as we know it today was invented.

1800

Edmund Davy of England is credited with the discovery of acetylene in 1836. The production of an arc between two carbon electrodes using a battery is credited to Sir Humphry Davy in 1800. In the mid-19th century, the electric generator was invented and arc lighting became popular. During the late 1800s, gas welding and cutting was developed. Arc welding with the carbon arc and metal arc was developed and resistance welding became a practical joining process.

1880

Auguste De Meritens, working in the Cabot Laboratory in France, used the heat of an arc for joining lead plates for storage batteries in the year 1881. It was his pupil, a Russian, Nikolai N. Benardos, working in the French laboratory, who was granted a patent for welding. He, with a fellow Russian, Stanislaus Olszewski, secured a British patent in 1885 and an American patent in 1887. The patents show an early electrode holder. This was the beginning of carbon arc welding. Benardos' efforts were restricted to carbon arc welding, although he was able to weld iron as well as lead. Carbon arc welding became popular during the late 1890s and early 1900s.

1890

In 1890, C.L. Coffin of Detroit was awarded the first U.S. patent for an arc welding process using a metal electrode. This was the first record of the metal melted from the electrode carried across the arc to deposit filler metal in the joint to make a weld. About the same time, N.G. Slavianoff, a Russian, presented the same idea of transferring metal across an arc, but to cast metal in a mold.

1900

Approximately 1900, Strohmenger introduced a coated metal electrode in Great Britain. There was a thin coating of clay or lime, but it provided a more stable arc. Oscar Kjellberg of Sweden invented a covered or coated electrode during the period of 1907 to 1914. Stick electrodes were produced by dipping short lengths of bare iron wire in thick mixtures of carbonates and silicates and allowing the coating to dry.

Meanwhile, resistance welding processes were developed, including spot welding, seam welding, projection welding and flash butt welding. Elihu Thompson originated resistance welding. His patents were dated 1885-1900. In 1903, a German named Goldschmidt invented thermite welding that was first used to weld railroad rails.

Gas welding and cutting were perfected during this period as well. The production of oxygen and later the liquefying of air, along with the introduction of a blow pipe or torch in 1887, helped the development of both welding and cutting. Before 1900, hydrogen and coal gas were used with oxygen. However, in about 1900 a torch suitable for use with low-pressure acetylene was developed.

World War I brought a tremendous demand for armament production and welding was pressed into service. Many companies sprang up in America and in Europe to manufacture welding machines and electrodes to meet the requirements.

1919

Immediately after the war in 1919, 20 members of the Wartime Welding Committee of the Emergency Fleet Corporation, under the leadership of Comfort Avery Adams, founded the American Welding Society as a nonprofit organization dedicated to the advancement of welding and allied processes.

Alternating current was invented in 1919 by C.J. Holslag; however, it did not become popular until the 1930s when the heavy-coated electrode found widespread use.

1920

In 1920, automatic welding was introduced. It utilized bare electrode wire operated on direct current and used arc voltage as the basis of regulating the feed rate. Automatic welding was invented by P.O. Nobel of the General Electric Company. It was used to build up worn motor shafts and worn crane wheels. It was also used by the automobile industry to produce rear axle housings.

During the 1920s, various types of welding electrodes were developed. There was considerable controversy during the 1920s about the advantage of the heavy-coated rods versus light-coated rods. The heavy-coated electrodes, which were made by extruding, were developed by Langstroth and Wunder of the A.O. Smith Company and were used by that company in 1927. In 1929, Lincoln Electric Company produced extruded electrode rods that were sold to the public. By 1930, covered electrodes were widely used. Welding codes appeared that required higher-quality weld metal, which increased the use of covered electrodes.

During the 1920s there was considerable research in shielding the arc and weld area by externally applied gases. The atmosphere of oxygen and nitrogen in contact with the molten weld metal caused brittle and sometimes porous welds. Research was done utilizing gas shielding techniques. Alexander and Langmuir did work in chambers using hydrogen as a welding atmosphere. They utilized two electrodes, starting with carbon electrodes but later changing to tungsten electrodes. The hydrogen was changed to atomic hydrogen in the arc. It was then blown out of the arc forming an intensely hot flame of atomic hydrogen turning to the molecular form and liberating heat. This arc produced half again as much heat as an oxyacetylene flame. This became the atomic hydrogen welding process. Atomic hydrogen never became popular but was used during the 1930s and 1940s for special applications of welding and later on for welding of tool steels.

H.M. Hobart and P.K. Devers were doing similar work but using atmospheres of argon and helium. In their patents applied for in 1926, arc welding utilizing gas supplied around the arc was a forerunner of the gas tungsten arc welding process. They also showed welding with

a concentric nozzle and with the electrode being fed as a wire through the nozzle. This was the forerunner of the gas metal arc welding process. These processes were developed much later.

1930

Stud welding was developed in 1930 at the New York Navy Yard, specifically for attaching wood decking over a metal surface. Stud welding became popular in the shipbuilding and construction industries.

The automatic process that became popular was the submerged arc welding process. This under powder or smothered arc welding process was developed by the National Tube Company for a pipe mill at McKeesport, Pennsylvania. It was designed to make the longitudinal seams in the pipe. The process was patented by Robinoff in 1930 and was later sold to Linde Air Products Company, where it was renamed Unionmelt welding. Submerged arc welding was used during the defense buildup in 1938 in shipyards and ordnance factories. It is one of the most productive welding processes and remains popular today.

1940

Gas tungsten arc welding (GTAW) had its beginnings from an idea by C.L. Coffin to weld in a nonoxidizing gas atmosphere, which he patented in 1890. The concept was further refined in the late 1920s by H.M.Hobart, who used helium for shielding, and P.K. Devers, who used argon. This process was ideal for welding magnesium and also for welding stainless and aluminum. It was perfected in 1941, patented by Meredith, and named Heliarc welding. It was later licensed to Linde Air Products, where the water-cooled torch was developed. The gas tungsten arc welding process has become one of the most important.

The gas metal arc welding (GMAW) process was successfully developed at Battelle Memorial Institute in 1948 under the sponsorship of the Air Reduction Company. This development utilized the gas shielded arc similar to the gas tungsten arc but replaced the tungsten electrode with a continuously fed electrode wire. One of the basic changes that made the process more usable was the small-diameter electrode wires and the constant-voltage power source. This principle had been patented earlier by H.E. Kennedy. The initial introduction of GMAW was for welding nonferrous metals. The high deposition rate led users to try the process on steel. The cost of inert gas was relatively high, and the cost savings were not immediately available.

1950

In 1953, Lyubavskii and Novoshilov announced the use of welding with consumable electrodes in an atmosphere of carbon dioxide gas. The CO_2 welding process immediately gained favor since it utilized equipment developed for inert gas metal arc welding but could now be used for economically welding steels. The CO_2 arc is a hot arc and the larger electrode wires required fairly high currents. The process became widely used with the introduction of smaller-diameter electrode wires and refined power supplies. This development was the short-circuit arc variation that was known as Micro-wire, short-arc and dip transfer welding, all of which appeared late in 1958 and early in 1959. This variation allowed all-position welding on thin materials and soon became the most popular of the gas metal arc welding process variations.

1960

Another variation was the use of inert gas with small amounts of oxygen that provided the spray-type arc transfer. It became popular in the early 1960s. A recent variation is the use of pulsed current. The current is switched from a high to a low value at a rate of once or twice the line frequency.

Soon after the introduction of CO_2 welding, a variation utilizing a special electrode wire was developed. This wire, described as an inside-outside electrode, was tubular in cross section with the fluxing agents on the inside. The process was called Dualshield, which indicated that external shielding gas was utilized as well as the gas produced by the flux in the core of the wire for arc shielding. This process, invented by Bernard, was announced in 1954, but was patented in 1957, when the National Cylinder Gas Company reintroduced it.

In 1959, an inside-outside electrode was produced that did not require external gas shielding. The absence of shielding gas gave the process popularity for noncritical work. This process was named Innershield®.

The electroslag welding process was announced by the Soviets at the Brussels World Fair in Belgium in 1958. It had been used in the Soviet Union since 1951 but was based on work done in the United States by R.K. Hopkins, who was granted patents in 1940. The Hopkins process was never used to a very great degree for joining. The process was perfected, and equipment was developed at the Paton Institute Laboratory in Kiev, Ukraine, and also at the Welding Research Laboratory in Bratislava, Czechoslovakia. The first production use in the U.S. was at the Electromotive Division of General Motors Corporation in Chicago, where it was called the Electro-molding process. It was announced in December 1959 for the fabrication of welded diesel engine blocks. The process and its variation, using a consumable guide tube, is used for welding thicker materials.

The Arcos Corporation introduced another vertical welding method, called Electrogas, in 1961. It utilized equipment developed for electroslag welding but employed a flux-cored electrode wire and an externally supplied gas shield. It is an open arc process since a slag bath is not involved. A newer development uses self-shielding electrode wires and a variation uses solid wire but with gas shielding. These methods allow the welding of thinner materials than can be welded with the electroslag process.

Gage invented plasma arc welding in 1957. This process uses a constricted arc or an arc through an orifice, which creates an arc plasma that has a higher temperature than the tungsten arc. It is also used for metal spraying, gouging and cutting.

The electron beam welding process, which uses a focused beam of electrons as a heat source in a vacuum chamber, was developed in France. J.A. Stohr of the French Atomic Energy Commission made the first public disclosure of the process on Nov. 23, 1957. In the United States, the automotive and aircraft engine industries are the major users of electron beam welding.

Лекція №43

Тема лекції: «Види зварювання»

План лекції

1. MIG - Gas Metal Arc Welding (GMAW)
2. TIG - Gas Tungsten Arc Welding (GTAW)
3. Stick - Shielded Metal Arc Welding (SMAW)
4. Flux-Cored Arc Welding (FCAW)
5. Electron Beam Welding (EBW)
6. Atomic Hydrogen Welding (AHW)
7. Gas Tungsten-Arc Welding
8. Plasma Arc Welding

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Зміст лекції

1. MIG - Gas Metal Arc Welding (GMAW)

This welding process uses a continuously fed electrode through a welding gun and the operator needs to pull a trigger in order to feed the consumable electrode through. Between the base material and the electrode an electric arc forms, which heats the material until it reaches the melting point that makes it possible to get it joined with another.

For this type of welding, you need an externally supplied shielding gas, and some of the most common used gases for this purpose are stainless steel, carbon steel, magnesium, copper, nickel, aluminum, and silicon bronze. Some of the typical uses for MIG welding

The main advantages of choosing the MIG style for welding include the reduction of waste thanks to the higher electrode efficiency, the minimal weld clean up required, lower heat inputs, and reduced welding fumes. Moreover, this is the easiest welding technique to learn, which makes it suitable for beginners and DIY enthusiasts.

Among the disadvantages, we can count the need for external shielding gas, the rather high cost for the best mig welders and other equipment needed, the limited positions in which you can weld, because you cannot use this technique for vertical or overhead welding, and the inability to weld thick materials. Moreover, in order to be able to use this welding technique successfully, all the materials need to be free of dirt and rust.

MIG welding is very commonly used in the automotive industry, mostly because it can provide a strong weld that can withstand large forces. Automotive repairs often require

versatility and strength, and this is the type of welding that is best fitted to this purpose. Other common uses include branding, robotics, constructions, and the maritime industry.

When it comes to MIG welding, you need to be sure that you adjust the power settings perfectly in order to should the thickness of the material. The speed of the welding is also a factor that affects the periods and penetration of the weld. By decreasing the speed of thoughts travel, you will be able to increase penetration. various calculators are available if you want to compare the different settings that you need for the welding power for a specific project.

2. TIG - Gas Tungsten Arc Welding (GTAW)

Also known as Heliarc welding, TIG is a welding process that uses a tungsten electrode that is not consumable to heed the base metal and create a molten puddle for the by using this method, you can create are no filler metal or autogenous weld in order to melt two pieces of metal together. You can also add an external filler rod into the molten puddle in order to be able to create a weld bead and increase the mechanical properties of the metal.

Just like in the case of MIG welding, you will need an external gas supply, and some of the common of them are argon and argon/helium mixtures. Some of the most typical uses for TIG welding include piping systems, aerospace welding, and motorcycle or bikes.

The main advantages of using this welding technique as an enthusiast or a professional include the ability to weld very thin materials, the high quality cleaning welds, and the highly aesthetic weld beads. Moreover, with this technique you can weld a wide range of alloys and obtains spatter free wells so you don't have worry as much about debris.

On the other hand, some of the disadvantages of the TIG welding include the high cost of the equipment and the lower deposition rates. Moreover, you will need external shielding gas and a rather high operator skill in order to obtain the desired results.

TIG welding is generally regarded as the most popular welding technique used nowadays, and the reason behind this is the fact that it offers a clean weld and a high degree of purity that is almost impossible to obtain with other welding methods. The method is most commonly used for welding stainless steel, even though it is also a suitable choice for other metals such as aluminum, magnesium, copper, and nickel.

Some of the industries that use TIG welding on a regular basis include those where nonferrous metals are prevalent. This means that this method is a suitable one for the manufacturing of tubing, vehicles, bicycles, as well as the repair and maintenance of various types of tools made from magnesium, aluminum, and stainless steel. Check out our reviews of the best tig welders here.

3. Stick - Shielded Metal Arc Welding (SMAW)

Commonly referred to as Stick, the shielded metal arc welding is a process that uses an electrode to carry electric current in order to be able to provide most of the weld metal. The electrode used for this method consists of a core wire that is coded influx and the electric arc is created when the tip of the electrode that is the work piece and is withdrawn while still remaining in close contact in order to generate temperatures of about 6500°F.

The molten metal is protected from nitrates and oxides in the atmosphere during this process, which means that this process is a suitable one for pipeline welding, construction, heavy equipment repair, and steel erection.

The main advantages of using the shielded metal arc welding technique include the low cost of the equipment that is necessary, as well as its portability. There is no need for shielding gas as in the TIG or MIG welding techniques, which means that you can use this technique outside even during wind or rain. Moreover, this technique also works on dirty and rusty metals so it is a suitable alternative for those projects where you can simply not use the TIG or MIG techniques.

On the other hand, the disadvantages of the shielded metal arc welding technique include the lower consumable efficiency, as the quite a lot of waste is produced by welding in this way, and the high operator skill required. It is actually quite going to take you a bit longer than other methods to master the required skills, taking into account the fact that the method is also rather difficult to use on thin materials.

This method is usually considered obsolete when compared to the MIG anti-ageing methods mostly because it is primarily a manual welding technique. However, the process is sometimes necessary because it is not always possible to use TIG or MIG welding due to the position, type of material, and skill.

This type of welding offers a very low cost solution that does not require much expensive equipment. As a result, the quality of the final weld may not be the best possible, mostly because this technique may allow for shallow penetration, porosity, cracking, and a vulnerability to severe weather.

4. Flux-Cored Arc Welding (FCAW)

This technique is rather similar to the MIG welding method, as it also requires an uninterruptedly fed electrode, but instead of a solid wire, it needs a tube-shaped wire full with flux. You can choose from two types of flux core wire, which are socially and will shield wires. social good wires are a good solution for outdoor use, as they work even in windy situations. n the other hand, double shield uses an external shielding gas and the flux in order to guard the modern weld puddle.

The main advantages of this technique include the higher electrode efficiency that creates less waste than other types of welding methods, as well as the lower hit inputs. With the flux-cored arc welding, there is no need for external shielding gas, and you get reduced welding fumes regardless of the metal used for welding. this is also a rather clean type of welding, as you don't have to deal with lots of debris.

When it comes to the disadvantages of this welding method, some of the most common of them include the generation of a lot of smoke and the high cost of the equipment. This welding method is not recommended for thin materials and may create slag.

The flux-cored arc welding technique is very easy to learn and there are many professionals prefer it because it is extremely inexpensive. Even though there are several limitations when it comes to the application of the technique and the results may not be as aesthetically pleasing as those obtained with other types of whaling methods, this matter remains popular because of its ease of use.Read our reviews of the best flux core welders here.

5. Electron Beam Welding (EBW)

This type of welding involves firing a ray of high velocity electrons at the materials that require welding. This technique transforms energy from the electrons into sheets in order

to melt the welding materials, which can then merge and fuse together. This type of welding is used in multiple industries, with applications ranging from fully automated automotive inline part production to high-cost aircraft engine industry. Some examples of products that are created with electron beam welding include aerospace components, transmission assemblies, and bimetal saw blades.

Because this is a vacuum-based process electron beam welding is a perfect choice for sealing of electrical components and pre-evacuated housings. This technique allows joining of dissimilar metals, such as those with different thermal conductivities and melting points, something that is generally difficult to achieve with other welding methods. This is also a good technique for those who want to weld a thick material to a thin material.

6. Atomic Hydrogen Welding (AHW)

This welding technique has been largely replaced by the gas metal arc welding methods, but it is still in use for specific purposes such as welding tungsten. This material is highly resistant to heat and by using this technique, you can weld it in a way that does not damage the metal while still creating cohesive, strong weld. As in all welding jobs it is extremely important to wear welder gloves for protection and safety.

The method was invented by Irving Langmuir after he discovered atomic hydrogen. It involves the placement of two metal tungsten electrodes in a hydrogen atmosphere in order to break up the hydrogen in the molecules and combine them in an explosion of heat that can go up to 3000 degrees Celsius.

7. Gas Tungsten-Arc Welding

This is one of the most difficult types of welding, and also the most time-consuming, because it requires a lot of focus and skill mostly because of the small area between the art of the flame in the material you intend to weld. For this method small strips of metal are welded with this process in order to obtain an extremely strong weld that is bound to last for years. This welding method has been released in 1941 and it has changed very little since. It is still used by manufacturers of bicycles and aircraft, both military and commercial.

8. Plasma Arc Welding

A process that is similar to that of the gas tungsten arc welding, the plasma arc welding was initially developed in 1954 and it uses electrical current that is passed through a very small nozzle that goes through the protective gases in order to enable extreme accuracy when it comes to welding small areas. This method is a suitable one to use when it comes to heating metal very extreme temperatures which results in deeper and stronger welds. This welding method is often used in the aircraft manufacturing industry, and it is very rare for it to be useful for DIY and enthusiast welders.

Лекція №44

Тема лекції: «Процеси зварювання та обладнання»

План лекції

1. Arc Welding Processes
2. Arc Welding Equipment
2.1. Meaning of Electric Arc Welding
2.2 Procedure of Electric Arc Welding
3. A Guide to Selecting Welding Equipment
3.1. Welders
3.2. Electrodes
3.3. Clamps
3.4. Angle Grinders
4. A Guide to Welding Safety Gear
4.1. Helmets
4.2. Gloves
4.3.Grounding Clamps
4.4. Clothing

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Зміст лекції

1. Arc Welding Processes

In arc welding process, an electric arc between an electrode and a workpiece or between two electrodes is utilized to weld base metals. The basic principle of arc welding is shown in below Fig. 1. However, the basic elements involved in arc welding process are shown in the below Fig. 2. Most of these processes use some shielding gas while others use coatings or fluxes to prevent the weld pool from the surrounding atmosphere.

Figure 1: Principle of arc welding

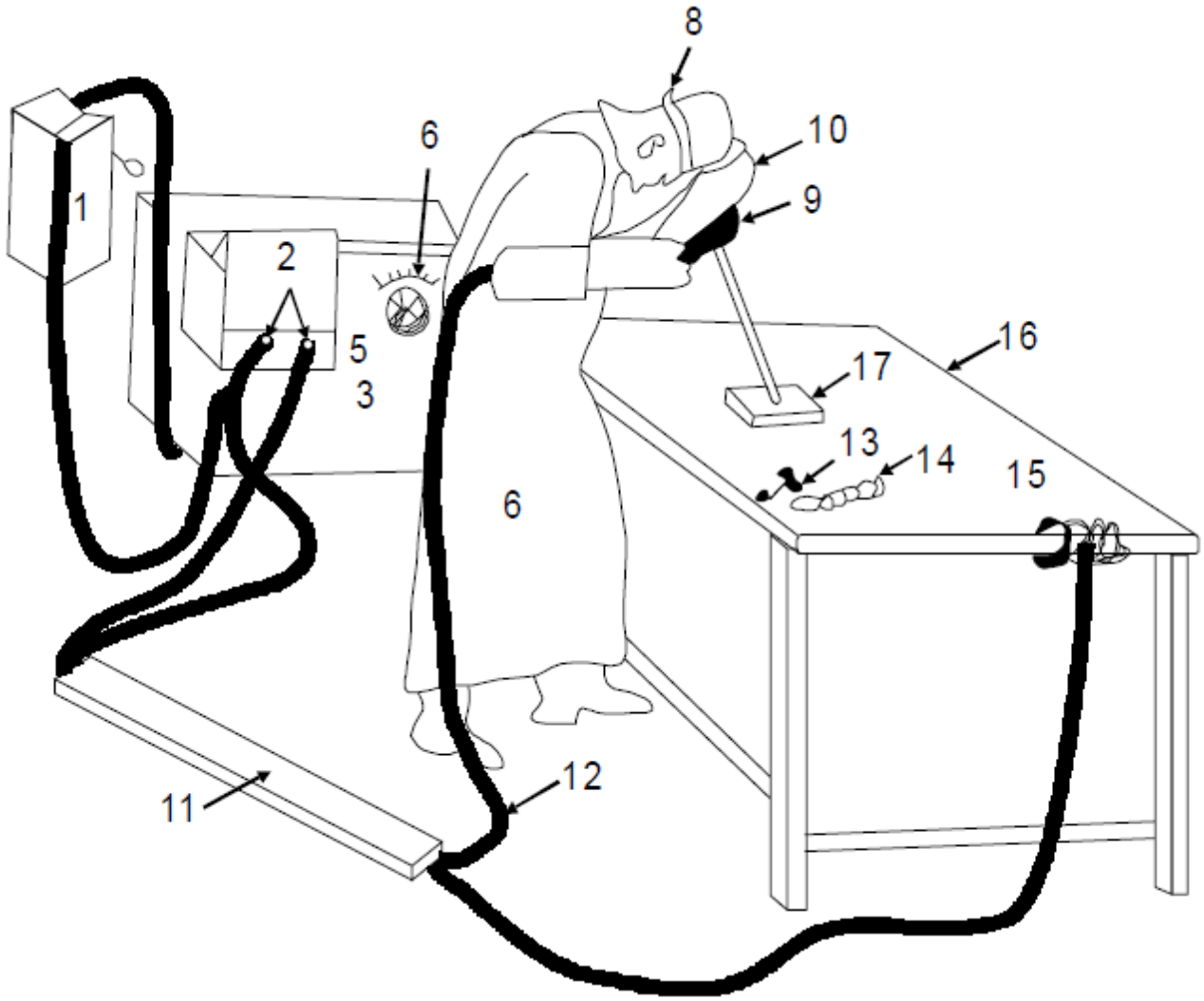
The ten various types of arc welding processes are mentioned below:

1. Carbon Arc Welding
2. Shielded Metal Arc Welding (SMAW)
3. Flux Cored Arc Welding (FCAW)
4. Gas Tungsten Arc Welding (GTAW)
5. Gas Metal Arc Welding

6. Plasma Arc Welding
7. Atomic Hydrogen Welding
8. Electroslag Welding (ESW)
9. Stud Arc Welding
10. Electrogas Weldin (EGW)

2. Arc Welding Equipment

Arc welding equipment, setup, related tools, and accessories are shown in Fig



(1) Switch box. (2) Secondary terminals. (3) Welding machine. (4) Current reading scale. (5) Current regulating hand wheel. (6) Leather apron. (7) Asbestos hand gloves. (8) Protective glasses strap. (9) Electrode holder. (10) Hand shield. (11) Channel for cable protection. (12) Welding cable. (13) Chipping hammer. (14) Wire brush. (15) Earth clamp. (16) Welding table (metallic). (17) Job.

2.1. Meaning of Electric Arc Welding:

The arc welding is a fusion welding process in which the heat required to fuse the metal is obtained from an electric arc between the base metal and an electrode.

The electric arc is produced when two conductors are touches together and then separated by a small gap of 2 to 4 mm, such that the current continues to flow, through the air. The temperature produced by the electric arc is about 4000°C to 6000°C.

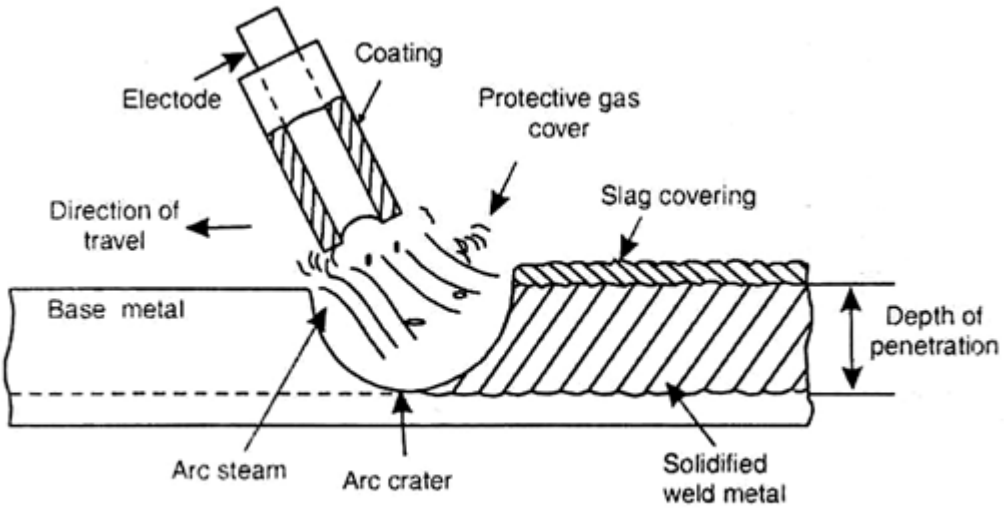


Fig. 7.14. Cut away view of the arc welding with a coated electrode.

A metal electrode is used which supplies the filler metal. The electrode may be flux coated or bare. In case of bare electrode, extra flux material is supplied. Both direct current (D.C.) and alternating current (A.C.) are used for arc welding.

The alternating current for arc is obtained from a step down transformer. The transformer receives current from the main supply at 220 to 440 volts and step down to required voltage i.e., 80 to 100 volts. The direct current for arc is usually obtained from a generator driven by either an electric motor, or patrol or diesel engine.

An open circuit voltage (for striking of arc) in case of D.C. welding is 60 to 80 volts while a closed circuit voltage (for maintaining the arc) is 15 to 25 volts.

2.2. Procedure of Electric Arc Welding:

First of all, metal pieces to be weld are thoroughly cleaned to remove the dust, dirt, grease, oil, etc. Then the work piece should be firmly held in suitable fixtures. Insert a suitable electrode in the electrode holder at an angle of 60 to 80° with the work piece.

Select the proper current and polarity. The spot are marked by the arc at the places where welding is to be done. The welding is done by making contact of the electrode with the work and then separating the electrode to a proper distance to produce an arc.

When the arc is obtained, intense heat so produced, melts the work below the arc, and forming a molten metal pool. A small depression is formed in the work and the molten metal is deposited around the edge of this depression. It is called arc crator. The slag is brushed off easily after the joint has cooled. After welding is over, the electrode holder should be taken out quickly to break the arc and the supply of current is switched off.

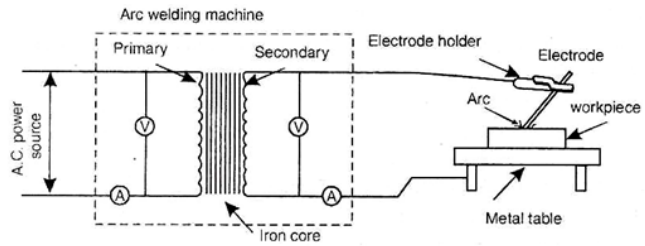


Fig. 7.15. The arc welding setup.

3. A Guide to Selecting Welding Equipment

3.1. Welders

The voltage power, AC/DC settings, and duty cycle are some of the most important factors to consider when choosing a welder. The welder will need both the power and a

sufficient operating time (the duty cycle) in order to complete every project. Choosing between stick, MIG, and TIG welders is a matter of balancing cost, skill, portability, convenience, and the nature of the project. MIG welding is simple to use, but it is costly and not as portable as the simple stick welding process. TIG welding creates high quality, clean welds, but it is much more difficult to learn.
Read Baker's Guide to Choosing a Welder

3.2. Electrodes

There are specific electrodes that match each of the three main welding processes. Stick welding uses a consumable electrode that is melted in order to create the weld joint. The E6010 electrode is one of the most popular electrodes, though the E6011, E6013, and E7018 are frequently listed by welders as excellent choices.

MIG welding uses a consumable electrode wire that is fed through the welding torch. Most projects use wire in the following range of thickness: .023, .030, .035, and .045, though a thicker wire may be needed for larger projects.

TIG welders use non-consumable electrodes that come in five main varieties. Ceriated and lanthanated electrodes are both good choices for most TIG welding applications. Avoid thoriated electrodes since they emit radiation when used and require a respirator.
Read Baker's Guide to Choosing the Best Electrode

3.3. Clamps

Clamps are a small part of the welding process, but they are critically important for keeping a weld joint lined up properly. If a workpiece shifts, the weld could be crooked and result in the loss of significant time if it has to be ground down and welded again.

The more clamps, the better. Some welders have stopped in the middle of their projects in order to buy more clamps, which shows just how important clamps are for welding.

3.4. Angle Grinders

Angle grinders are critical for preparing metal prior to welding, especially for MIG and TIG welding. An angle grinder is a portable tool that has the arbor at 90 degrees in relation to the tool. Depending on their size, grinders vary from 500 to 2500 watts. Pick an angle grinder with enough power to clean the metal sufficiently prior to welding. Every welding project is different, so choosing a grinder with more power and durability can make a significant difference when planning for future projects.
Explore Angle Grinders

4. A Guide to Welding Safety Gear

4.1. Helmets

Welding emits ultraviolet light rays that are generated by the electric arc. The extreme brightness generated by welding can cause inflammation of the cornea and burn the retinas of your eyes. Some people even go blind because they do not use the right welding equipment. Dark face plates are good for preventing exposure to the ultraviolet rays.

Welding helmets are a critical piece of equipment because they protect your face from sparks and your eyes from harmful rays. The best choice for a welding helmet is an auto-

darkening helmet that allows welders to keep both hands on task without having to reach up to put on the darkening visor.

A good weld can go bad if a torch shifts even an inch. Therefore experienced welders recommend the auto-darkening helmets since they can position their torch right where it belongs and start working immediately. The time it takes to darken a helmet is plenty of time to shift the position of a weld torch.

4.2. Gloves

The best welding gloves are made from top-grain leather, which is the high-quality outer layer of an animal's hide. Welding gloves balance flexibility with heat protection and will vary depending on the welding process used. Stick welding creates the highest heat and requires stiff, heavy-duty gloves that can withstand high temperatures, while TIG welding produces the least amount of heat and can use a lighter and flexible glove.

Goatskin leather gloves are quite popular and are typically ideal for TIG and MIG welding. Deerskin gloves offer the advantage of shaping themselves to a welder's hand over time and make for an extremely comfortable fit. The best glove options for stick welding include top-grain pigskin, elk skin, and cowhide.

4.3. Grounding Clamps

Grounding clamps are a critical safety measure that protect welders from electric shocks. In addition, a good grounding clamp will make it easier to start an arc and will protect your welder. The best ground clamps are made of copper, not just lined with copper on the edges of the clamp.

Grounding clamps will be most effective if they maintain constant contact with the work piece. Some welders modify their set ups by adding a large piece of copper cable to their clamps in order to improve the amount of contact with the surface.

4.4. Clothing

No one wants to work on a welding project and discover sparks and flames on his/her shirt. Synthetic shirts that aren't specifically made for welding work can be particularly dangerous for welders when the sparks begin to fly.

Long sleeves are especially important for welding work since the rays from welding can cause sunburn on exposed skin. There are many solutions for welding clothing, but oftentimes the temperature of a work site or shop will determine what a welder wears.

Leather clothing is the safest choice, but it is also the warmest. Therefore, many welders wear leather sleeves, longer gauntlet gloves, a leather apron, or a kind of modified welding bib with long sleeves and an open back. Usually a cotton shirt is the best choice to wear under protective gear since it's not as flammable as synthetic clothing.

Лекція Практичне заняття №45-46

Тема лекції: «Альтернативні види зварювання. Лазерне зварювання.Дифузне зварювання»

План лекції

1. Alternative types of welding
2. Laser welding
2.1. What Lasers are recommended for welding?
2.2. 5 Key Benefits of this type of welding
3. The process of Diffusion-welding
3.1. Advantages
3.2. Limitations
3.3. Variables
3.4. Equipment and materials

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Зміст лекції

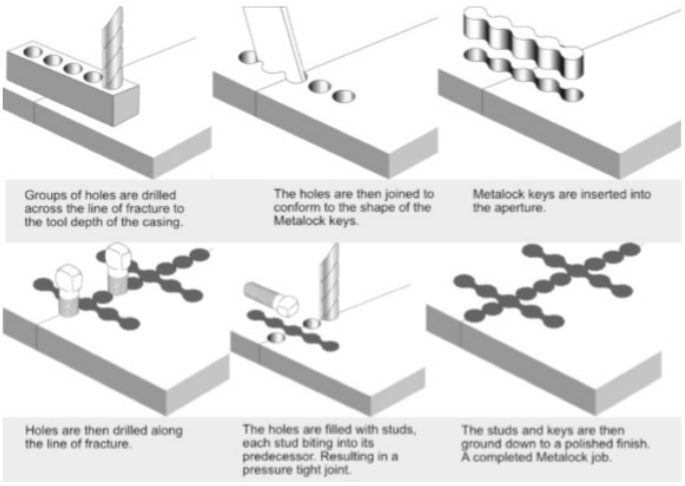
1. Alternative types of welding

When an urgent repair to a cracked piece of metal machinery occurs onboard, welding is often the go-to solution, but alternatives exist, explains Andre Mortimer, president of Metalock International Association

Although the Metalock process is a well-established, permanent in-situ repair for cracked metal machinery, many chief engineers trained in the last 30 years are unfamiliar with the technique. Instead, the turn to the technology they do know: welding. In many cases this is the wrong tool, at best a sticking plaster. Where welding is completely impossible, removal and replacement are frequently seen as the only remaining solution, again the Metalock process is an overlooked option.

The metal stitching technique, codified and certified continually by the Metalock International Association (MIA) since 1953, delivers permanent repairs, in-situ, requiring neither the removal of machinery or hot work.

Although chiefly applied to cast iron machinery, the process is also applicable to other metals, including steel and aluminium. Metalock technicians are trained to recognise the best approach for the circumstances and will recommend the most appropriate action, including welding.



2. Laser welding

Today many companies use Lasers to weld parts together during the manufacturing stage of product design. These companies come from a wide range of industry sectors including medical, automotive and aerospace. There are many reasons why Laser welding is increasingly becoming the preferred technology in these industries; read on to discover some of the key reasons and benefits for adopting this technology.

The three main types of Lasers used for welding are Fiber Lasers, Nd: YAG pulse Lasers and continuous wave Lasers.

2.1. What Lasers are recommended for welding?

There are a number of different types of Lasers that can be used for welding. These include Fiber Lasers, Nd: YAG pulsed Lasers and continuous wave Lasers. The type of Laser welding solution you choose will depend on the application you require it for.

Laser welding specialists will be able to help you identify the best solution for your business, though it is likely that they will recommend one of the three types of Lasers detailed here:

1. **Fiber Lasers**

Fiber Lasers can be used for a variety of applications from welding very small parts together commonly used by manufacturing businesses in the engineering, medical and electronics industries, through to welding thicker materials in the automotive and aerospace industries. Fiber Lasers are a versatile, low cost way of achieving high quality spot welds.

2. **Nd: YAG Pulsed Lasers**

Nd: YAG Pulsed Lasers create discrete pulses of controllable energy which can be shaped to create the ideal weld. This type of Laser is suitable for producing large spot welds, as well as deep spot and seam welds.

3. **Continuous Wave Lasers**

Continuous wave Lasers are ideal for high speed welding and deep penetration welding. They produce welds with a very low heat input.

2.2. 5 Key Benefits of this type of welding

To help new users understand why Laser technology is the best welding solution for manufacturing companies, we have compiled the top five benefits for you here:

1) Ultimate precision

One of the main benefits of Laser welding is that it offers a high level of accuracy and control. The fact Laser technology is so precise means that it can be used to weld the smallest of parts together, without causing any damage to them.

2) Capable of creating complicated joins

Laser technology is capable of handling complicated joins. Using Laser welding technology you can weld dissimilar materials, as well as areas which would be too difficult to reach using more traditional welding techniques.

3) Low heat application

The fact Laser welding technology uses a low heat application, minimises the distortion of the components. This is why it is the preferred method of welding for those creating luxury products, such as bespoke jewellery. Lasers use very localised energy, allowing for contact-free application which results in less thermal strain being placed on the parts.

4) Consistent and repeatable welds

Manufacturers choose Lasers as their number one choice of welding method as it allows for consistent and repeatable welds to be made. It is a much faster welding technique than other more traditional techniques, and is also much more versatile.

The same Laser can be used for cutting and drilling too (Pulsed Fiber Lasers can also be used for marking). The fact that Lasers allow for excellent repeatability and are so versatile helps businesses make significant unit cost reductions.

5) High strength welds

Laser technology allows manufacturers to make high strength welds. There is no need for a filler material to be used. Lasers provide excellent weld quality and clean processing, which is why they are favoured by manufacturers, particularly in the medical industry where the safety of medical devices and parts is paramount.

Laser welding creates high strength joins required by businesses in the medical, automotive and aerospace sectors.

3. The process of Diffusion-welding

Diffusion-welding is a **solid state** process controlled by diffusion, that produces a weld between the intended members by the long time application of considerable pressure at elevated temperatures.

The characteristic features of this process are that it does not introduce macroscopic deformations or relative motion in either of the welded parts and that it **does not melt** base metals.

The Diffusion-welding process consists in bringing **together** the smoothed surfaces to be diffusion welded after having eliminated all contaminants and surface oxides.

Then pressure is gradually applied and temperature is elevated to permit **diffusion** at the atomic level.

Local deformation at the contact points by **yield and creep** permits increasingly larger areas to touch.

Then diffusion causes the interface to **disappear** slowly while the remaining voids between the original surfaces shrink or are absorbed within the grains.

Finally the **interface cannot be seen** any more (in a metallographic section) and residual voids, if any, result no larger or frequent than those of the base metals.

3.1. Advantages:

- This solid state process avoids pitfalls of fusion welding
- Dissimilar materials welds are possible
- Properties and microstructures remain similar to those of base metals
- Multiple welds can be made in one setup at the same time
- Produces a product finished to size and causes minimal deformation
- Presents less shrinkage and stresses compared to other welding processes
- Highly automated process does not need skillful workforce

3.2. Limitations:

- Costly equipment especially for large weldments
- Costly preparation with smooth surface finish and exceptional cleanliness
- Protective atmosphere or vacuum required
- Long time to completion
- Not suited to high production rates
- Difference in thermal expansion of members may need special attention
- Limited nondestructive inspection methods available

3.3. Variables

Temperature is the most important variable in Diffusion-welding.

It should be selected and controlled so as **not to interfere** with metallurgical changes or transformations that may occur in the materials.

Time needed to perform atomic diffusion is temperature dependent.

Longer times become **less and less effective**. The time needed cannot be determined simply but has to be found experimentally.

Once welding is performed, longer times will not add to the properties.

Pressure directly affects the outcome of Diffusion-welding and its importance is great, especially in the initial stages of the process.

It can be linked to the yield point of the metals involved but it is **difficult to deal in theory** as a predetermined value.

Although local deformation is introduced at the contact point as an essential stage in the process, **macroscopic** deformations are avoided.

Pressure is generally **limited to the minimum** required to get good results, because of the high equipment costs associated with high compression.

Pressure and temperature are practically selected so that they will permit the performance of suitable welds in **acceptable time**.

Although filler metal is in principle **not required** for Diffusion-welding, it has been found that a foil of suitable materials placed at the interface **can sometimes facilitate** the process.

The reasons are for providing a **soft layer** to maximize surface contact in the first stage, or to avoid the formation of brittle compounds, or to promote diffusivity, or to scavenge impurities.

This may result in the opportunity to reduce one or more of the three essential variables (Pressure, Temperature, Time), with consequent **economic gain**.

3.4. Equipment and materials

Most of the equipment, especially tooling, has to **be built** specially for the items to be welded.

Presses or autoclaves should be adapted for providing the **required atmosphere** and the needed heat source to the parts, sometimes embedded in ceramic molds.

Can be Diffusion-welded: Titanium alloys, nickel alloys, aluminum alloys, as well as **different combinations** of materials not easily joined by traditional means.

Steels are preferably welded by alternative **more economic** methods.

But large, flat surfaces of low carbon steel have been Diffusion-welded **without filler metal** under the proper conditions.

Лекція Практичне заняття №47-48

Тема лекції: «Джерела живлення»

План лекції

1. Introduction
2. Different types of welding power sources

3. Some useful definitions
4. A discussion on different types
4.1.Fixed current welding transformer
4.2. Variable current welding transformer (magnetic shunt type).
4.3. Thyristorised welding rectifier.
5. What is an inverter?
6. Characteristics of power semiconductor devices used in inverters
6.1.thyristers / scrs (silicon controlled rectifiers)
6.2. Bjts (bipolar junction transistors)
6.3. Mosfets(metal oxide semiconductor field effect transistors)
6.4. Igbts (insulated gate bipolar transistors).
7. Design topologies.
7.1. Resonant power sources
7.2. Pwm power sources
8. How arcraft's equipment is better than others?
9.comparision

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Зміст лекції

1. INTRODUCTION

- **W**elding is a process of joining two metals. To make a joint of two metals immense heat is required. This heat is created in the form of an electric arc. To create this arc a power source is required.
- **E**ver since the process of welding entered the engineering field there is continuous innovations in the field of welding power sources.
- **T**he choice of a welding power source depends upon the process of welding.
- **T**here are two types of welding power sources. 1.constant current power sources. 2.constant voltage power sources.
- **A** constant current power source is used in MMAW and TIG welding processes.

- MMAW stands for manual metal arc welding.
- TIG stands for tungsten inert gas welding.
- **A** constant voltage power source is used in MIG/MAG and SUBARC welding processes.
  1.MIG stands for metal inert gas welding.
  2.MAG stands for metal active gas welding.
  3.SUBARC stands for submerged arc welding.
- **O**ur discussion will cover power sources that are used in MMAW and TIG welding processes
- We may understand that welding can be carried out using
  1.AC power source.
  2.DC power source.
- The following are the types of welding power sources that can be differentiated based on value based parameters.

2. DIFFERENT TYPES OF WELDING POWER SOURCES

AC power sources

A1.Fixed current welding transformer.
A2.Variable current welding transformer (magnetic shunt type).
a) Moving iron
b) Moving coil

DC power sources

B1.Transductor type welding power source (welding rectifier).
B2.Thyristorised welding rectifier.
B3.Chopper based welding power source.
B4.Inverter based welding power source.

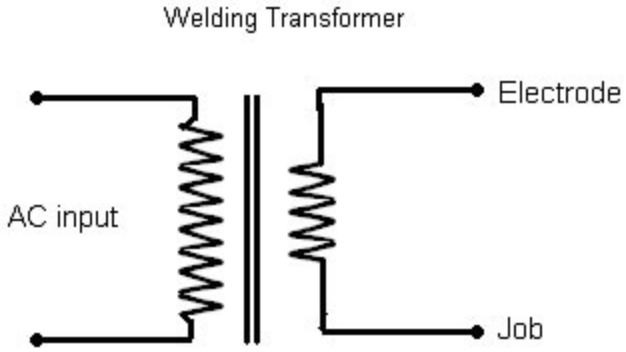
3. SOME USEFUL DEFINITIONS

1. Power factor: It is the ratio between active power and the sum of active and reactive power. It should be noted that it is a vector sum not an algebraic sum.
2. Input KVA: It is the product of voltage applied and current drawn from the input power supply.
3. Input KVA single phase : Input voltage X Input current
4. Input KVA three phase : %3 X Voltage input X Input current
5. Input power :%3 X Voltage input X Input current X power factor
6. Output power : Output voltage X Output current
7. Output power : Input power X Efficiency
8. Open circuit voltage :This is the voltage available at the output terminals of welding power source when welding is not being carried out.
9. Load voltage: This is the voltage available at the output terminals of welding power source when welding is being carried out, given in Volts.
10. Welding current: This is the current drawn from the output of welding power source given in Amperes.
11. No load input current: This is the current drawn from the input power supply when welding is not being carried out.
12. deposition rate: It is the weight of material deposited in unit of time given in Kg/Hr or Kg/Min, under a given set of conditions. It is dependent of the power source also. It is

reduced due to spatter and fumes. In a typical test it increases by about 15 to 20 % when welding inverters are used.
13. Melting/Burn off rate: It is the rate at which the electrode of specific size is melted by a set current and is expressed in cm/min. It increases rapidly as current is increased specifically for small diameter electrodes.

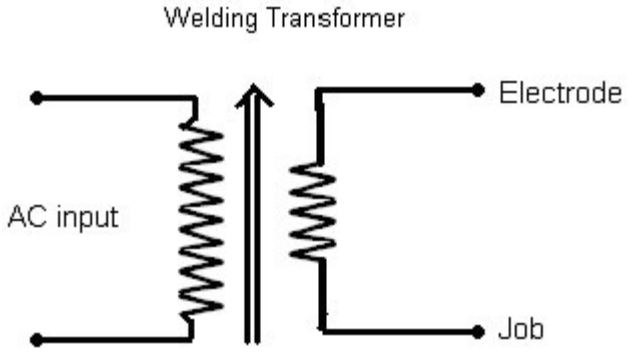
4. A DISCUSSION ON DIFFERENT TYPES

4.1. Fixed current welding transformer



Advantages:
1.Very low initial investment
2.Simple to use and service.
Disadvantages:
1.Very high no load current.
2. There is no control of current. Current is fixed, will also depends on the electrode and input voltage.
3.Very inefficient.
4.Very low power factor.
5.Due to 1 and 2 draws very large current from the electricity establishment. (see the table).
6.Due to 3 running cost is high.
7.Poor quality of weld.
8.Brute force of current.
9.Welding at low currents is not at all possible.
10.Bulky equipment, thus occupies large floor space.
11.Poor portability.
12.TIG / Argon welding not possible.
13.Welding of non- ferrous metals not possible.
14.Lower deposition rate and deposition efficiency.

4.2. Variable current welding transformer (magnetic shunt type).



Moving core
or
Moving Iron

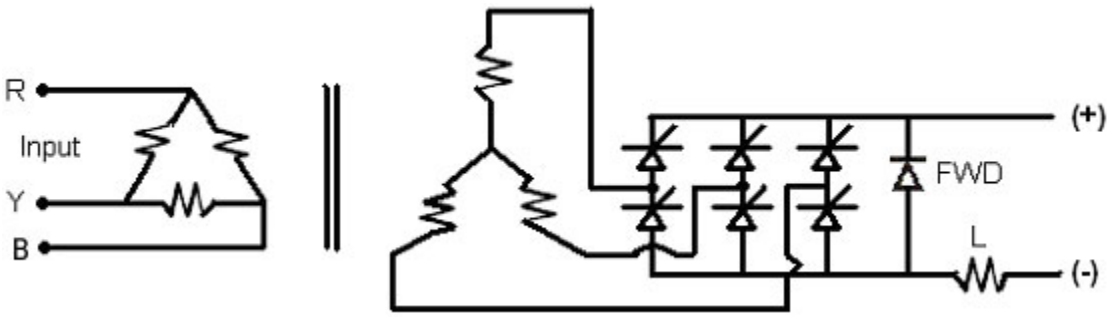
Advantages:

1.Very low initial investment
2.Simple to use and service

Disadvantages:

1.Very high no load current.
2.Very inefficient.
3.Very low power factor.
4.Due to 1 and 2 draws very large current from the electricity establishment. (see the table).
5.Due to 3 running cost is high.
6.Poor quality of weld.
7.Better control of current compared to the previous type but not satisfactory.
8.Bulky equipment, thus occupies larger floor space.
9.TIG / Argon welding not possible.
10.Welding at low currents is not possible.
11.Poor deposition rate and efficiency

4.3. Thyristorised welding rectifier.



Advantages:

1.Moderate initial investment
2.Simple to use.
3.Moderate skill required to service the equipment.

Disadvantages:

1.High no load current.
2.Efficiency is better than the earlier cases but not high.

3.Low power factor.
4.Due to 1 and 2 draws large current from the electricity establishment.
5.Due to 3 running cost is high.
6.Low speed of control.
7.Better quality of weld compared to the previous types.
8.Better control of current compared to previous types.
9.Bulky equipment, hence occupies large floor space.
10.Poor portability.
11.Averaage deposition rate and efficiency.

5. WHAT IS AN INVERTER?

An inverter used in the welding application functions as below.

- AC Line voltage is taken as the input to the welding equipment.
- It is suitably RFI/EMI filtered and rectified.
- This rectified voltage is filtered to make it pure DC.
- This Dc voltage is taken as the input to the switching device through a high frequency power transformer.
- As this switching frequency is very high the size of this transformer becomes very small compared to its counter parts.
- The transformer output is suitably stepped down.
- This stepped down AC voltage is again rectified using fast recovery diodes.
- This output is used for welding.
- Suitable controls and feedback techniques are used.

5. CHARACTERISTICS OF POWER SEMICONDUCTOR DEVICES USED IN INVERTERS

6.1.Thyristers / SCRs (Silicon Controlled Rectifiers)

- Very large capacity devices are available, which are very rugged.
- Very low frequency of operation, which is well within the audio range.
- Gate drive is simple and efficient.
- Hence size and weight of the equipment is large.
- As the frequency of operation falls well in the audio range, welding is very noisy.
- As the commutation is forced, large and more number of components.
- Speed of current control is slow and hence a very low welding current is not possible.
- Large initial surge currents.
- High spatter and fumes. Poor quality of weld.
- Large internal heat due to large circulating current.

6.2. BJTs (Bipolar Junction Transistors)

- All the above Drawbacks are eliminated, but It requires bulky and inefficient base drive, which is complicated and not suitable at high powers.
- High power transistors are extremely expensive.
- As the technology is advanced with IGBTs and MOSFETs there are no takers for these devices in welding application.

6.3. MOSFETs(Metal Oxide Semiconductor Field Effect Transistors)

- In this device base is replaced by a gate. Gate drive is simple and extremely efficient. Very high switching speed, and hence transformer size becomes small. Operation up to100KHz is easily possible.
- At larger duty cycles and higher power capacities size of transformer core has to be suitably selected to accommodate the adequate size of copper conductor.
- Large capacity devices are not popular due to their cost and availability.
- Hence used in low and medium capacity power sources.

6.4. IGBTs (Insulated Gate Bipolar Transistors).

- It is a combination of BJT and MOSFET.
- Very simple and efficient gate drive.
- Large capacity devices are available at reasonable cost.
- Reduces assembly and servicing time. Operation possible well above audio range and hence noise free operation.
- Only device available for large capacity power sources. Power loss is comparable to MOSFETs at low powers and lesser at medium and higher powers.
- And hence building block design concepts can be applied.

6. DESIGN TOPOLOGIES.

6.1. **Resonant power sources** carry the disadvantage of large circulating current, bulky size due to commutating circuits. Hence they are less efficient. They offer less control bandwidth and hence wide variation of current is not possible. They produce less electromagnetic interference. Hence they are old generation for welding application. They are used at very high frequency typically 400KHz to 1000KHz in the field of communications, where EMI is a serious concern.

7.2. PWM power sources are the choice of the day as they offer large and fast control. EMI problem is suitably reduced using filters. They provide wide control of current typically from 3 to 400A, which is a very wide range. They provide a great opportunity to incorporate more features. The speed of correction is exceptionally advantageous to control current surges which is a necessity in TIG welding application. The PWM technique offers a smooth short circuit current control, a very good arc re-striking capability. And hence it is the latest and best choice for welding application.

8. HOW ARCRAFT'S EQUIPMENT IS BETTER THAN OTHERS?

1.Designed for wider input voltage fluctuations.
2.Designed for wider ambient temperature fluctuations.
3.Protected for under voltage, over voltage, single phasing and over temperature.
4.As many features are provided as required by the customer's choice.
5.Ther is no surge of current, starts from the set value of current.
6.Very large number of models to choose from.
7.Tried and tested for quality.
8.Indegeniously designed and hence easy serviceability.
9.Trained manpower to provide service at your doorstep.
10.Very low down time as all the spares are easily available.

11.Due to high operating frequency of the inverter, very low ripple and due to this the welding current is smooth and stable. Excellent weld quality is produced.
12.Uniform weld beads, low spatter, and lesser fumes.
13.Very high deposition rate and efficiency.
14.Latest PWM technology using IGBTs.

9.COMPARISION

- Let us take 4mm arc welding electrode is being used
- It requires 160A welding current at approximately 24V
- Output power = 160 A X 24 V = 3840 W or 3.840 KW
- Input voltage is 230V AC in the case of single phase and 415V AC in the case of three phase input power supply. While comparing in an actual measurements the input voltage and output voltage has to accurately measured.

Parameter	**Welding Transformer**	**Welding Rectifier**	**Welding Inverter**
No load current	4 to 5 A	4 to 5 A	0.3 to 0.5 A
No load power factor	0.2	0.2	0.99
No load power	400 to 500 W	400 to 500 W	50 to 100 W
Output power	3.84KW	3.84KW	3.84KW
Efficiency	0.6	0.6	0.9
Input power	6.4 KW	6.4 KW	4.27 KW
Input power factor	0.5 to 0.6	0.6	0.95
Input KVA	12.8 to 10.66 at 230V,1ph	10.66 at 415V, 3 ph	4.5 at 415V, 3 ph
Input current	55 A to 46 A	14.8 A	6.3 A
Power consumption for 8 hrs a day	51.2 KWH	51.2 KWH	34.16 KWH
Power consumption for 250 day of a year	12,800 KWH	12,800 KWH	8540 KWH
Cost of electricity @ Rs 5 per KWH	Rs 64,000	Rs 64,000	Rs 42,700
Excess in cost compared to Inverter	Rs 21,300	Rs 21,300	--
Excess input current from supply	48 A	8.5 A	--
Saving in running cost as above	**--**	**--**	**Rs 21,300**
Saving in input current	**--**	**--**	**8.5A to 48A**
Saving in installed capacity	**--**	**--**	**6.1KVA to 11.0KVA**

Therefore there is a saving of Rs 21,300 per anum if a machine is used for one year for 250 days @ 8 hrs a day, that is 2000Hrs per anum. We can calculate the same for the given number machines and hours used which will substantially reduce the cost burden Also we can calculate the saving in the installed capacity, which will also saves on electricity bill.
This calculation is for 4mm electrode and for larger electrode sizes the savings will further increase.

Лекція Практичне заняття №49-50

Тема лекції: «Два методи зварки неплавким електродом»

План лекції

1. Types of Welding Electrodes explained
2. Non-consumable or Refractory Electrodes
3. Main features of non-consumable welding electrode
4. Consumable Electrodes

4.1. Main features of Consumable welding electrode

5. Welding Electrode Explained in details

5.1. Need of filler metal

5.2. Core Wire composition

5.3. The size and length of the welding electrode

5.4. Current Requirements

5.5. Welding electrode numbering system

5.6. Electrode coating

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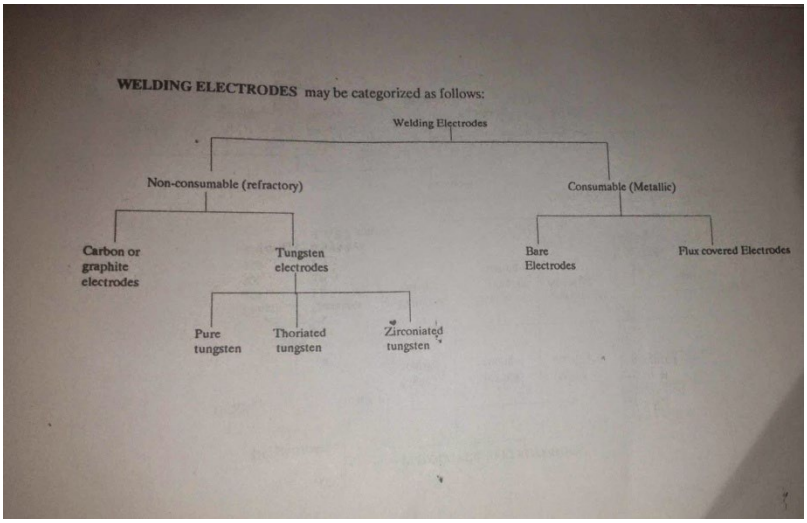
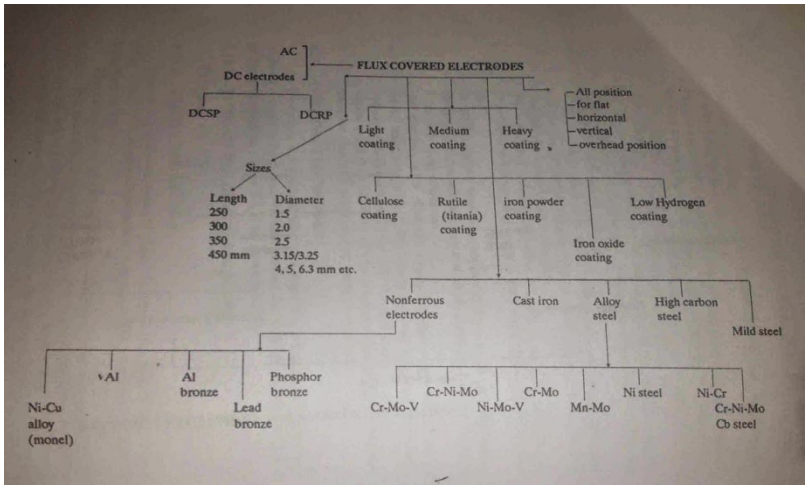
4. https://www.quora.com/Whats-the-purpose-of-non-consumable-electrodes-in-welding

Зміст лекції

1. Types of Welding Electrodes explained

As a non-consumable electrodes tungsten or carbon electrodes can be used. In gas-tungsten arc welding a tungsten electrode is used in place of the metal electrode used in shielded metal-arc welding. A chemically inert gas, such as argon, helium, or carbon dioxide is used to shield the metal from oxidation. The heat from the arc formed between the electrode and the metal melts the edges of the metal. Metal for the weld may be added by placing a bare wire in the arc or the point of the weld. This process can be used with nearly all metals and produces a high-quality weld. However, the rate of welding is considerably slower than in other processes.





For having a clear knowledge about different electrodes I would advisable to have a look at the above mentioned images.

Welding electrode is mainly classified into two broad categories

1.Non-consumable electrodes

2. Consumable electrodes

2. Non-consumable or Refractory Electrodes

Non-consumable electrodes are those which do not melt away or consumed during the welding process. These electrodes involves the use of high melting point materials such as carbon - MP 6700 degree Fahrenheit, pure tungsten MP 6150 degree Fahrenheit, or alloy tungsten.

3. Main features of non-consumable welding electrode

- While welding with these electrodes a filler metal is needed to fill up the gap between the two metal parts.
- These are used in carbon arc welding and Tungsten Inert Gas (TIG) welding .
- Tungsten electrodes are much costlier than carbon or graphite electrodes. Tungsten alloy electrodes are costlier.

4. Consumable Electrodes

This electrodes are low melting point electrodes. When electrode and job is struck the arc starts to melt the end of the electrode. The molten electrode is transferred to the job in the form of metal droplets.

4.1. Main features of Consumable welding electrode

- these are more thermally efficient than non consumable electrodes.
- They are made of different materials depending upon the need and the chemical composition of metals to be joined.
- These are used in MIG welding in the form of bare electrode.
- Most commonly used core material is mild steel, low alloy steel and nickel steel.

Consumable electrodes can be classified in the following groups
1. Bare electrodes: They don't have any flux coating only the alloy or the metal wire.
2. Light coated electrodes: These are electrodes having coating factor of 1.25 . coating factor = diameter of the electrode / diameter of the core wire . example : Citobest electrode from AO or Advani Oerlikon.
3. Medium coated electrodes: These have coating factor of about 1.45 . example : Overcord
4. Heavily coated electrode : Coating factor is between 1.6 and 2.2 . example : citofine .

Covered electrodes can be classified as follows :

- electrodes having cellulose
- Rutile (titania)
- Electrode having iron oxide
- Electrode with iron powder
- Low hydrogen electrode

5. Welding Electrode Explained in details

5.1. Need of filler metal

Depending upon the material of the electrode, it may melt and supply filler metal; if it is non-consumable, a separate filler metal addition becomes necessary.

5.2. Core Wire composition

The core wire is prepared by keeping in mind the type of metal to be welded. The composition of core wire is different for each metal. When mild steel is needed to be welded the core wire must have have similar composition to get a homogeneous weld joint.

5.3. The size and length of the welding electrode

The size (diameter) of the electrode core wire totally depends on the amount of metal deposition needed and the type of gap between the two metal plates to be joined. The length of the core depends of the electrical resistance, rigidity and diameter of the electrode. Typical coated electrode dimensions are 150 to 460 mm (6 to 18 in.) in length and 1.5 to 8 mm (j to in.) in diameter. As the thickness of the sections to be welded decreases, the required current and electrode diameter also decrease.

5.4. Current Requirements

If bigger diameter welding electrodes are used then the requirement of the current will also be higher.

- Specification of the welding electrodes

Specifications for electrodes and for filler metals, including dimensional tolerances, quality control procedures, and processes, are stated by the American Welding Society (AWS) and the American National Standards Institute (ANSI); some appear in the Aerospace Materials Specifications (AMS) by the Society of Automotive Engineers (SAE).

5.5. Welding electrode numbering system

Electrodes are identified by numbers and letters (Table 27.2), or by color code, particularly if they are too small to imprint with identification

TABLE 27.2 Designations for Mild Steel Coated Electrodes

The prefix "E" designates arc welding electrode.
The first two digits of four-digit numbers and the first three digits of five-digit numbers indicate minimum tensile strength:

E60XX	60,000 psi minimum tensile strength
E70XX	70,000 psi minimum tensile strength
E110XX	110,000 psi minimum tensile strength

The next-to-last digit indicates position:

EXX1X	All positions
EXX2X	Flat position and horizontal fillets

The last two digits together indicate the type of covering and the current to be used.
The suffix (Example: EXXXX-A1) indicates the approximate alloy in the weld deposit:

—A1	0.5% Mo
—B1	0.5% Cr, 0.5% Mo
—B2	1.25% Cr, 0.5% Mo
—B3	2.25% Cr, 1% Mo
—B4	2% Cr, 0.5% Mo
—B5	0.5% Cr, 1% Mo
—C1	2.5% Ni
—C2	3.25% Ni
—C3	1% Ni, 0.35% Mo, 0.15% Cr
—D1 and D2	0.25–0.45% Mo, 1.75% Mn
—G	0.5% min. Ni, 0.3% min. Cr, 0.2% min. Mo, 0.1% min. V, 1% min. Mn (only one element required)

Among other requirements, the specifications state that (a) the wire diameter must not vary more than 0.05 mm (0.002 in.) from nominal size, and (b) the coatings must be concentric with the wire.

Welding Electrode is sold by weight and are available in a wide variety of sizes and specifications. Selection and recommendations for electrodes for a particular metal and its application can be found in supplier literature and in the various handbooks

5.6. Electrode coating

Claylike materials are used to coat the electrodes. These materials include silicate binder as well as powdered materials such as various oxides, metal alloys, fluorides and carbonates and cellulose. Cellulose includes cotton cellulose and wood flour.

Brittle electrode coatings has some functions and they take part in complex interactions at the time of welding. The basic functions are

a) they help in stabilizing the arc.

b) Act as shield against the surrounding environment by producing gases. The gases produced are mainly carbon dioxide CO_2 and water vapor and small amounts of carbon monoxide CO and Hydrogen.

c) They control the rate at which the electrode melts.

d) Act as a flux and protect the weld joint against the formation of oxides and other inclusions. The resulting slag also protects the molten weld pool.

e) These coatings add alloying elements in the weld zone and enhances the properties of the weld joint. Deoxidizers help the joint from becoming brittle.

To ensure a good weld the deposited coating or slag must be removed after each pass. A wire brush can be used for cleaning the deposited coating.

Bare electrodes are also available which are made of stainless steel of aluminum alloys.

Лекція Практичне заняття №51-52

Тема лекції: «Атомно-водневе зварювання»

План лекції

1. Atomic Hydrogen Welding
2. Oxy Hydrogen Welding.

2.1. Atomic hydrogen welding principle

2.2. Atomic hydrogen welding advantages

3. Experience in an Atomic Hydrogen Welding (AHW)

Література:

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.

2. https://www.youtube.com/watch?v=-058mJ0liaM

3. https://www.slideshare.net/ilyashussain6/atomic-hyrogen-arc-welding

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Зміст лекції

1. **Atomic Hydrogen Welding**

The **atomic hydrogen welding** is one kind of arc welding process where welding joint is made by heating the work piece with an arc is maintained between two electrodes and same time a hydrogen steam atmosphere is made in **welding** zone. This stem of hydrogen gas act as a shielding gas also. A filler rod may or may not be used additionally.
A process in which the welding heat is generated by passing a stream of hydrogen through an electric arc between two inclined tungsten electrodes.

The arc is maintained independently of the workpiece or parts being welded. The hydrogen gas is normally diatomic (H_2), but where the temperatures are over 600 °C (1100 °F) near the arc, the hydrogen breaks down into its atomic form, simultaneously absorbing a large amount of heat from the arc. When the hydrogen strikes a relatively cold surface or the weld zone, it recombines into its diatomic form releasing the energy associated with the formation of that bond. The presence of H_2 also acts as shielding gas.

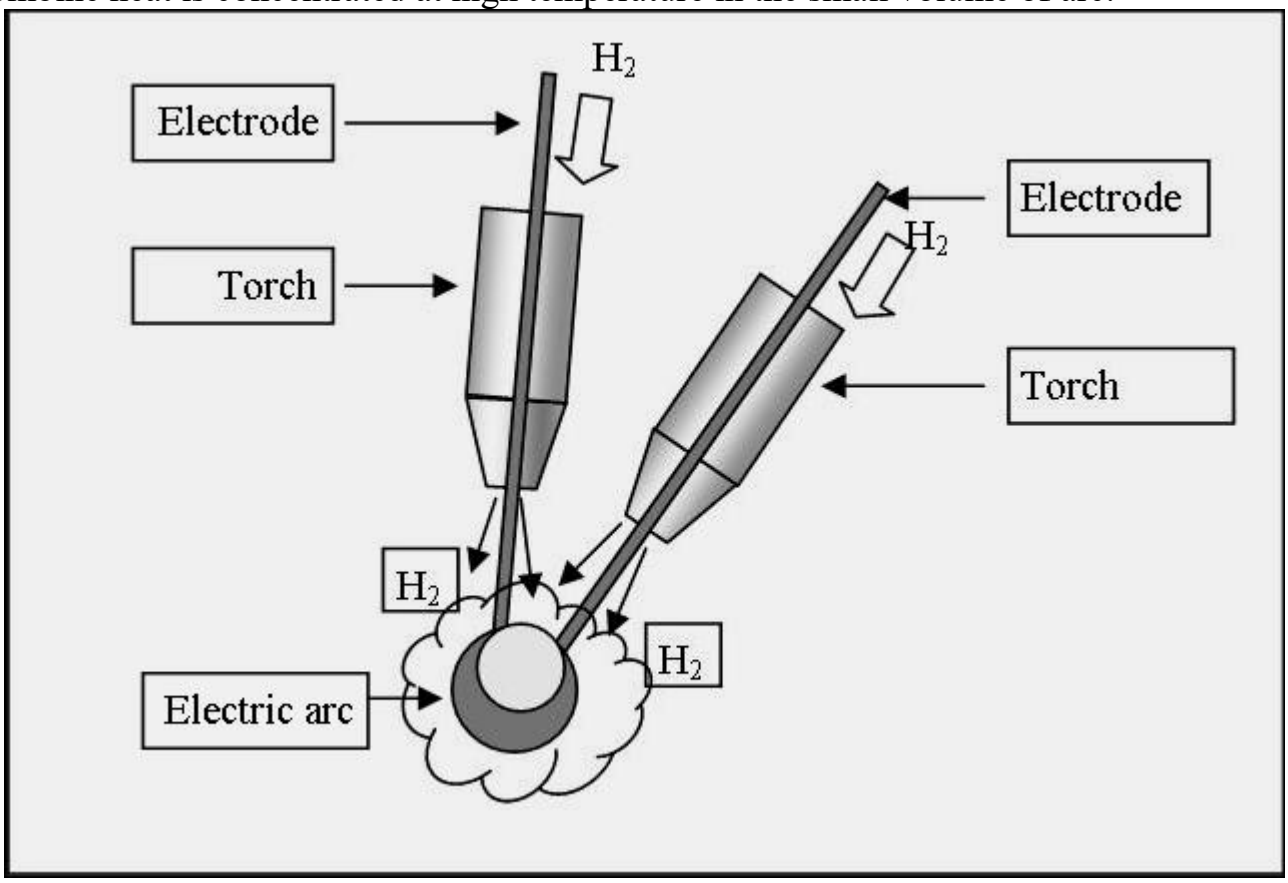
2. **Oxy Hydrogen Welding**.

The coalescence of metal is produced by oxygenhydrogen flame.The Oxy hydrogen process was once used extensively to weld low temperature metals such as aluminium, lead, and magnesium but it is not as popular today because of more versatile and faster welding processes like TIG and MIG welding.

2.1. Atomic hydrogen welding principle

In Atomic hydrogen welding the work piece consist may not part of electrical connection for completing electrical circuit. The arc is produced only between two tungsten electrodes. The molecular hydrogen when passing through the electrical arc and then it is broken into atomic hydrogen form. That time it is absorbed heat energy which is supplied from arc. The arc supplies the energy for chemical reaction.

These hydrogen atoms recombine again to form of molecular stage. This recombination take place in the comparatively lower temperature zone as outer zone of arc. This time it releases extra amount of heat energy. This extra heat is added with main arc temperature and it produces much amount of heat, which is utilized for welding purposes. This combine heat is concentrated at high temperature in the small volume of arc.



2.2. Atomic hydrogen welding advantages

No flux or any kind of shielding gas is required for this welding process.
Due to high concentration of heat, it can carried out high rate of fusion.
A uniform and strong weld joint can be produced.

3. Experience in an Atomic Hydrogen Welding (AHW)

Shows the AEI welding power source

My job often involves working on interesting and unusual welding related projects and can take me to many a far-flung corner of the world. One such welding project involved a welding process you may have never even heard of, and I will confess, up to a few years ago I was only aware of it in books. The process is called Atomic Hydrogen.

A client of mine for many years, part of the BDC Group, is involved with welding and repairing lifting chains and continues to use this welding process, even today, because it offers a perfect solution for his application. Although, I am aware that they are on their last machine, after robbing parts from all their other machines for some time now.

This is not just a nostalgic, historical look about a welding process that has all but passed us by, but more to show you a process that was common place in the 1930's, and even today offers the best solution to a welding problem, in this case, welding of lifting chains.

Shows the torch and the position of the two tungstens

It is true I wanted to provide some information, for those of you whom are interested, and shoot some video footage, as I am acutely aware that when their welder retires, this may be the end for this process, at least for me, and it is most unlikely I shall ever come across the use of Atomic Hydrogen welding in a commercial environment ever again.

The process was invented by Dr Irving Langmuir in 1926 and was used extensively before WW2, particularly in Germany.

AHW is an arc welding process that uses an arc between two tungsten electrodes in a shielding gas atmosphere of hydrogen. Filler may or may not be used. A jet of hydrogen is disassociated as it passes through an electric arc. $H2 > H + H = 422kJ$. The temperature of the arc is in excess of 3700 °C.

The arc is maintained entirely independently of the work. The work is part of the electrical circuit only to the extent that a portion of the arc comes into contact with the work, at which time, a voltage exists between the work and the electrodes. The hydrogen can be thought of as simply a transport mechanism to extract energy from the arc plasma and transferring it to the work. It produces a flame as heat is liberated by the chemical reaction. Iron can be melted without contamination with carbon, oxygen or nitrogen. Because of the powerful reducing action of the atomic hydrogen, alloys can be melted without fluxes and without surface oxidation.

Shows macro of completed weld in a 12mm steel bar

A feature of the flame is the speed by which it can deliver heat to the workpiece. When an arc is established in hydrogen, between two electrodes, the molecular hydrogen dissociates into atomic hydrogen. In the process of disassociation, large amounts of heat is absorbed from the arc by the hydrogen. This heat is released on recombination of the hydrogen atoms at the work surface due to hydrogen atoms recombining in their molecule form.

The operator can control the heat by varying the distance of the arc stream between the two electrodes and the distance to the workpiece.

The power source is a transformer that has an open circuit voltage (OCV) of up to 300 volts to strike the arc, but welding current is low, with generally amperages of 10-20 being used, although this particular AEI model offers a maximum of 50 amps.

Лекція Практичне заняття №53-54

Тема лекції: «Електрошлакове зварювання»

План лекції

1. Electroslag Welding Process
2. Principle
3. Equipments or Main Parts
4. Working of Electroslag Welding
5. Advantages and Disadvantages

5.1. Advantages

5.2. Disadvantages

6. Application

Література:

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.

2. https://www.youtube.com/watch?v=z6LDVrixmGs

3. https://en.wikipedia.org/wiki/Electroslag_welding

4. https://www.fhwa.dot.gov/bridge/steel/180510.pdf

5. http://steelmecsald.it/eng/electroslag_welding.asp

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Зміст лекції

1. Electroslag Welding Process

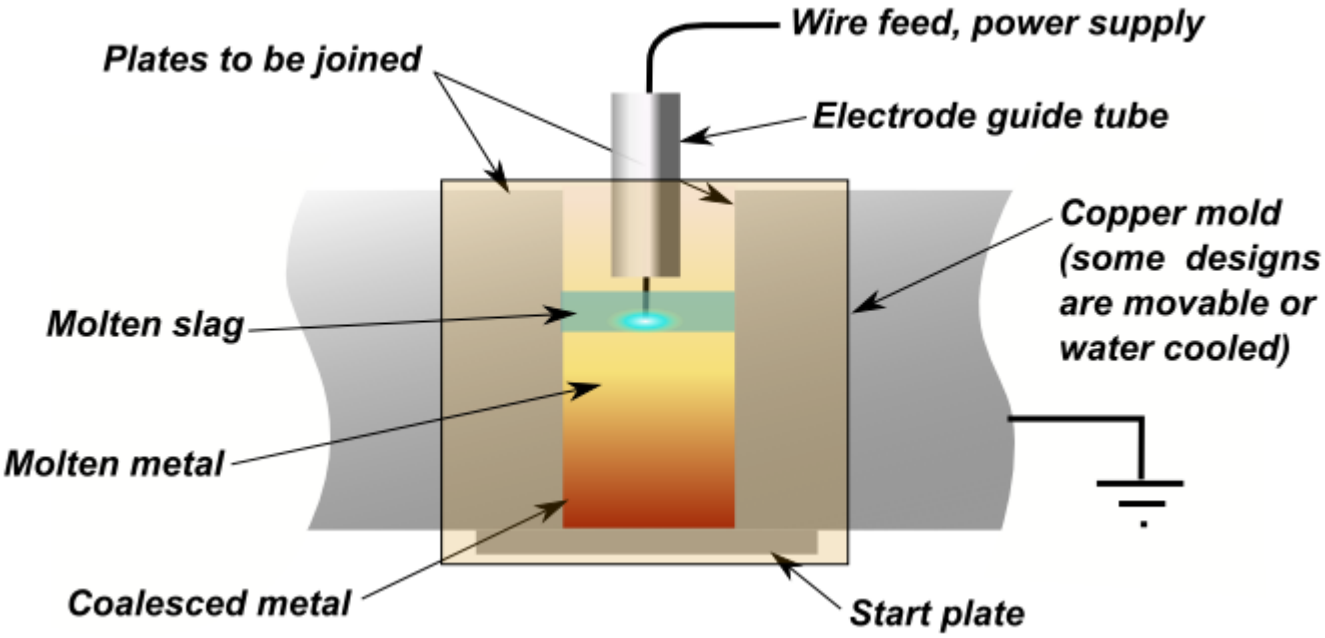
Electroslag Welding Process is a process in which the job is welded through the molten slag covering which is a result of high quantity of heat which is generated by the circulation of electric current through the electrode and the job.

Robert K Hopkins discovered this welding process in February, 1940 at Paton Institute, Kiev, USSR. This welding process is a single pass high productive welding process which is used for welding thick (25-300 mm) materials in vertical or close to vertical positions.

2. Principle

Electroslag welding process works on the principle of heat generation due to arc and electric resistance. Arc is made between welding electrode and the workpiece which starts melting the filler metal to fill the filler cavity. Now the heat is produced due to electric resistance when the current passes through the surface. The heat further starts melting the filler metal which is continuously fed from the roller. This filler wire melts and fills the weld and makes it a strong joint.

3. Equipments or Main Parts



1. **Electrodes:** Generally two types of electrodes that are solid and metal-cored are used. Though solid electrodes are more popular than the metal-cored electrodes.

2. **Flux:** Flux is the most important consumable material of Electroslag Welding. In its molten state it transforms the electrical energy into heat energy which helps in melting the electrode wire and the base metal to form a weld joint. It is also required to protect the molten weld metal from the atmosphere and to ensure stability. The flux in its molten state is required to conduct electricity but at the same time it should offer sufficient resistance to its flow for generating enough heat to do welding.

Arcing results when the resistance is less than the minimal required quantity**.** The slag must also have minimum viscosity so that it does not be too thick to stop good circulation and nor too thin to result in excessive leakage.

3. Electrode Guide Tube: It is used to guide the electrode wire at desired position where the welding is to be done.

4. Working of Electroslag Welding

It works as follows:

- Firstly current flows from welding electrode to base plate. This establishes an arc between electrode and base plate which heats the flux. This heat which is produced during arc formation results in melting the filler metal and deposits into the weld cavity.
- Now the cooled copper shoe starts its function of solidifying the filler metal into weld cavity. This this is done to avoid flowing of weld metal outside.
- As the filler metal solidifies into weld cavity, the current flows through it. Then it generates heat due to electric resistance. This heat is further used to continue the melting of the filler metal into weld Cavity. Which means that heat is regenerated, which results in less waste of heat or energy.
- Roller arrangement continuously provides the filler metal.
- During welding of the metals both copper shoe and feed mechanism moves upward until the whole cavity is formed.
- This will create a strong joint in single one pass. The single or multi-pass weld is used according to plate thickness

5. Advantages and Disadvantages

5.1. Advantages

1. Cooling rate is very low so there is no problem of cold cracking.
2. There is no problem of slag inclusion or porosity.
3. The process is semi-automatic and faster.
4. Heavier section can be welded in single pass.
5. High productivity can be achieved.
6. Low cost for joint preparation.

5.2. Disadvantages

1. Too high heat input to base.
2. High temperature of welding needs cooling arrangement.
3. Slow rate of cooling give columnar grain in weld.
4. When the heat input is very high then the weld quality can be poor, including low toughness caused by the coarse grains in the fusion zone and the heat-affected zone.
5. In Electroslag welding, it has some tendency towards hot cracking and notch sensitivity in the heat affected zone.
6. It is restricted to vertical position welding, because of large molten metal pools and slag.
7. It is difficult to close cylindrical welds
8. It tends to produce large grain sizes..
9. If you are creating joints below 60 mm than Submerged Arc Welding (SAW) is more economical than electroslag welding process

6. Application

1. It is used in heavy industries where plate thickness is up to 80 mm to be joined.
2. Welding of thick walled large diameter pipes is done by this welding process.
3. Welding of storage tanks is done by it.
4. It is used to construct big and thick parts of ships.

Лекція Практичне заняття №55-56

Тема лекції: «Ацетилен. Конструкція балона»

План лекції

1. Background
2. Raw Materials
3. The Manufacturing Process
   3.1. Chemical reaction process
   3.2. Thermal cracking process
4. Storage and Handling
5. Quality Control and the Future
6. Handling and Use of Gas Cylinders and Equipment
7. What should I do when storing compressed gas cylinders?
8. What should I avoid doing?
9. What should I do with empty or out of service cylinders?
10. How should I move the cylinders?
    10.1. DO NOT
    10.2. When should I "crack" the cylinder?

Література:

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Зміст лекції

1. Background

Acetylene is a colorless, combustible gas with a distinctive odor. When acetylene is liquefied, compressed, heated, or mixed with air, it becomes highly explosive. As a result special precautions are required during its production and handling. The most common use of acetylene is as a raw material for the production of various organic chemicals including 1,4-butanediol, which is widely used in the preparation of polyurethane and polyester plastics. The second most common use is as the fuel component in oxy-acetylene welding and metal cutting. Some commercially useful acetylene compounds include acetylene black, which is used in certain dry-cell batteries, and acetylenic alcohols, which are used in the synthesis of vitamins.

Acetylene was discovered in 1836, when Edmund Davy was experimenting with potassium carbide. One of his chemical reactions produced a flammable gas, which is

now known as acetylene. In 1859, Marcel Morren successfully generated acetylene when he used carbon electrodes to strike an electric arc in an atmosphere of hydrogen. The electric arc tore carbon atoms away from the electrodes and bonded them with hydrogen atoms to form acetylene molecules. He called this gas carbonized hydrogen.

By the late 1800s, a method had been developed for making acetylene by reacting calcium carbide with water. This generated a controlled flow of acetylene that could be combusted in air to produce a brilliant white light. Carbide lanterns were used by miners and carbide lamps were used for street illumination before the general availability of electric lights. In 1897, Georges Claude and A. Hess noted that acetylene gas could be safely stored by dissolving it in acetone. Nils Dalen used this new method in 1905 to develop long-burning, automated marine and railroad signal lights. In 1906, Dalen went on to develop an acetylene torch for welding and metal cutting.

In the 1920s, the German firm BASF developed a process for manufacturing acetylene from natural gas and petroleum-based hydrocarbons. The first plant went into operation in Germany in 1940. The technology came to the United States in the early 1950s and quickly became the primary method of producing acetylene.

Demand for acetylene grew as new processes were developed for converting it into useful plastics and chemicals. In the United States, demand peaked sometime between 1965 and 1970, then fell off sharply as new, lower-cost alternative conversion materials were discovered. Since the early 1980s, the demand for acetylene has grown slowly at a rate of about 2-4% per year.

In 1991, there were eight plants in the United States that produced acetylene. Together they produced a total of 352 million lb (160 million kg) of acetylene per year. Of this production, 66% was derived from natural gas and 15% from petroleum processing. Most acetylene from these two sources was used on or near the site where it was produced to make other organic chemicals. The remaining 19% came from calcium carbide. Some of the acetylene from this source was used to make organic chemicals, and the rest was used by regional industrial gas producers to fill pressurized cylinders for local welding and metal cutting customers.

In Western Europe, natural gas and petroleum were the principal sources of acetylene in 1991, while calcium carbide was the principal source in Eastern Europe and Japan.

2. Raw Materials

Acetylene is a hydrocarbon consisting of two carbon atoms and two hydrogen atoms. Its chemical symbol is C_2H_2. For commercial purposes, acetylene can be made from several different raw materials depending on the process used.

The simplest process reacts calcium carbide with water to produce acetylene gas and a calcium carbonate slurry, called hydrated lime. The chemical reaction may be written as $CaC_2 + 2\,H_2O \rightarrow C_2H_2 + Ca(OH)_2$.

Other processes use natural gas, which is mostly methane, or a petroleum-based hydrocarbon such as crude oil, naphtha, or bunker C oil as raw materials. Coal can also be used. These processes use high temperature to convert the raw materials into a wide variety of gases, including hydrogen, carbon monoxide, carbon dioxide, acetylene, and others. The chemical reaction for converting methane into acetylene and hydrogen may be written $2\,CH_4 \rightarrow C_2H_2 + 3\,H_2$. The other gases are the products of combustion with oxygen. In order to separate the acetylene, it is dissolved in a solvent such as water, anhydrous ammonia, chilled methanol, or acetone, or several other solvents depending on the process.

3. The Manufacturing Process

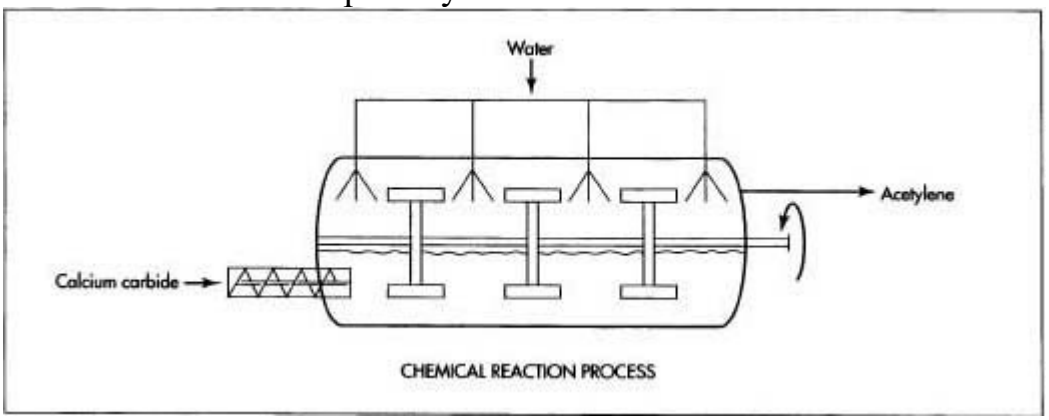
There are two basic conversion processes used to make acetylene. One is a chemical reaction process, which occurs at normal temperatures. The other is a thermal cracking process, which occurs at extremely high temperatures.

Here are typical sequences of operations used to convert various raw materials into acetylene by each of the two basic processes.

3.1. Chemical reaction process

Acetylene may be generated by the chemical reaction between calcium carbide and water. This reaction produces a considerable amount of heat, which must be removed to prevent the acetylene gas from exploding. There are several variations of this process in which either calcium carbide is added to water or water is added to calcium carbide. Both of these variations are called wet processes because an excess amount of water is used to absorb the heat of the reaction. A third variation, called a dry process, uses only a limited amount of water, which then evaporates as it absorbs the heat. The first variation is most commonly used in the United States and is described below.

1. Most high-capacity acetylene generators use a rotating screw conveyor to feed calcium carbide granules into the reaction chamber, which has been filled to a certain level with water. The granules measure about 0.08 in x 0.25 in (2 mm x 6 mm), which provides the right amount of exposed surfaces to allow a complete reaction. The feed rate is determined by the desired rate of gas flow and is controlled by a pressure switch in the chamber. If too much gas is being produced at one time, the pressure switch opens and cuts back the feed rate.
2. To ensure a complete reaction, the solution of calcium carbide granules and water is constantly agitated by a set of rotating paddles inside the reaction chamber. This also prevents any granules from floating on the surface where they could over-heat and ignite the acetylene
3. The acetylene gas bubbles to the surface and is drawn off under low pressure. As it leaves the reaction chamber, the gas is cooled by a spray of water. This water spray also adds water to the reaction chamber to keep the reaction going as new calcium carbide is added. After the gas is cooled, it passes through a flash arrester, which prevents any accidental ignition from equipment downstream of the chamber.
4. As the calcium carbide reacts with the water, it forms a slurry of calcium carbonate, which sinks to the bottom of the chamber. Periodically the reaction must be stopped to remove the built-up slurry. The



CHEMICAL REACTION PROCESS

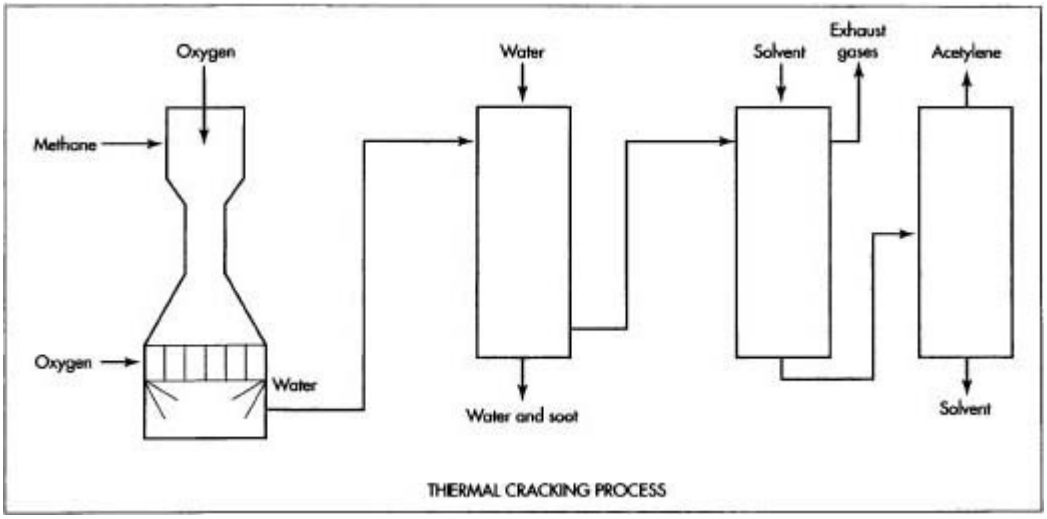
Acetylene may be generated by the chemical reaction between calcium carbide and water. This reaction produces a considerable amount of heat, which must be removed to prevent the acetylene gas from exploding.

3.2. Thermal cracking process

Acetylene may also be generated by raising the temperature of various hydrocarbons to the point where their atomic bonds break, or crack, in what is known as a thermal cracking process. After the hydrocarbon atoms break apart, they can be made to rebond to form different materials than the original raw materials. This process is widely used to convert oil or natural gas to a variety of chemicals.

There are several variations of this process depending on the raw materials used and the method for raising the temperature. Some cracking processes use an electric arc to heat the raw materials, while others use a combustion chamber that burns part of the hydrocarbons to provide a flame. Some acetylene is generated as a coproduct of the steam cracking process used to make ethylene. In the United States, the most common process uses a combustion chamber to heat and burn natural gas as described below.

1. Natural gas, which is mostly methane, is heated to about 1,200° F (650° C). Preheating the gas will cause it to self-ignite once it reaches the burner and requires less oxygen for combustion.
2. The heated gas passes through a narrow pipe, called a venturi, where oxygen is injected and mixed with the hot gas.
3. The mixture of hot gas and oxygen passes through a diffuser, which slows its velocity to the desired speed. This is critical. If the velocity is too high, the incoming gas will blow out the flame in the burner. If the velocity is too low, the flame can flash back and ignite the gas before it reaches the burner.
4. The gas mixture flows into the burner block, which contains more than 100 narrow channels. As the gas flows into each channel, it self-ignites and produces a flame which raises the gas temperature to about 2,730° F (1,500° C). A small amount of oxygen is added in the burner to stabilize the combustion.
5. The burning gas flows into the reaction space just beyond the burner where the high temperature cause about one-third of the methane to be converted into acetylene, while most of the rest of the methane is burned. The entire combustion process takes only a few milliseconds.
6. The flaming gas is quickly quenched with water sprays at the point where the conversion to acetylene is the greatest. The cooled gas contains a large amount of carbon monoxide and hydrogen, with lesser



THERMAL CRACKING PROCESS

Acetylene may also be generated by raising the temperature of various hydrocarbons to the point where their atomic bonds break, or crack, in what is known as a thermal cracking process.

7. The gas passes through a water scrubber, which removes much of the carbon soot. The gas then passes through a second scrubber where it is sprayed with a solvent known as N-methylpyrrolidinone which absorbs the acetylene, but not the other gases.

8. The solvent is pumped into a separation tower where the acetylene is boiled out of the solvent and is drawn off at the top of the tower as a gas, while the solvent is drawn out of the bottom.

4. Storage and Handling

Because acetylene is highly explosive, it must be stored and handled with great care. When it is transported through pipelines, the pressure is kept very low and the length of the pipeline is very short. In most chemical production operations, the acetylene is transported only as far as an adjacent plant, or "over the fence" as they say in the chemical processing business.

When acetylene must be pressurized and stored for use in oxy-acetylene welding and metal cutting operations, special storage cylinders are used. The cylinders are filled with an absorbent material, like diatomaceous earth, and a small amount of acetone. The acetylene is pumped into the cylinders at a pressure of about 300 psi (2,070 kPa), where it is dissolved in the acetone. Once dissolved, it loses its explosive capability, making it safe to transport. When the cylinder valve is opened, the pressure drop causes some of the acetylene to vaporize into gas again and flow through the connecting hose to the welding or cutting torch.

5. Quality Control and the Future

Grade B acetylene may have a maximum of 2% impurities and is generally used for oxyacetylene welding and metal cutting. Acetylene produced by the chemical reaction process meets this standard. Grade A acetylene may have no more than 0.5% impurities and is generally used for chemical production processes. Acetylene produced by the thermal cracking process may meet this standard or may require further purification, depending on the specific process and raw materials.

The use of acetylene is expected to continue a gradual increase in the future as new applications are developed. One new application is the conversion of acetylene to ethylene for use in making a variety of polyethylene plastics. In the past, a small amount of acetylene

had been generated and wasted as part of the steam cracking process used to make ethylene. A new catalyst developed by Phillips Petroleum allows most of this acetylene to be converted into ethylene for increased yields at a reduced overall cost.

6. **Handling and Use of Gas Cylinders and Equipment**

- When moving and storing cylinders, make sure the cylinder valves are closed, caps are on, and the space is dry. If acetylene is being used, properly ventilate. Tilt and roll on bottom edges. Avoid dropping. Cylinders must be secured in a vertical position.
- Remove regulators unless secured on a cylinder cart and have a 10 pound ABC rated fire extinguisher on cart. Remove regulators from oxygen/acetylene cutting assemblies/rigs unless properly secured on a cylinder cart. Note: Regulators are to be removed from the cylinders after use unless it can be determined that the cutting assembly/rig will be in use within the following twenty-four (24) hours.
- When hoisting cylinders, use pallet, cradle, or sling board. Do not use choker sling or magnet.
- When cutting or welding, protect cylinders from sparks, hot slag or flame by separating them, or use fire-resistant shields or blankets
- Use friction lighters (not matches, cigarettes, etc.) to light torches.
- When work is finished or cylinders are empty, make sure cylinder valves are closed and the caps are on the cylinders
- Store regulators, hoses, etc. in a clean, dry, well ventilated space.
- Oxygen and acetylene cylinders must be separated by a fire wall or a minimum of 20 feet when in storage.
- Flashback safety valves must be used on all hoses and lines at the gauges and manifolds.

7. **What should I do when storing compressed gas cylinders?**

- Check your fire code for guidelines regarding the storage of flammable gas cylinders.
- Store cylinders in a clearly identified, dry, well-ventilated storage area that is not exposed to heat or the direct rays of the sun, and away from doorways, aisles, elevators, and stairs.
- Post "no smoking" signs in the area.
- Store cylinders, both empty and full, in the upright position and secure with an insulated chain or non-conductive belt.
- During storage, close the cylinder valves with the protective caps in place.
- With outside storage, place on a fireproof surface and enclose in a tamper-proof enclosure.
- Protect cylinders from contact with ground, ice, snow, water, salt, corrosion, and high temperatures.
- Protect cylinders from falling. Use a chain or adequate support system. Consider securing each cylinder separately to prevent other cylinders from falling when items are removed from storage.
- Store oxygen cylinders and fuel gas cylinders separately. Indoors, separate oxygen from fuel gas cylinders by at least 6.1 m (20 ft), or by a wall at least 1.5 m (5 ft) high with a minimum half-hour fire resistance. (From: CSA W117.2-12

(R-2017) "Safety in welding, cutting and allied processes". Local jurisdiction requirements may vary.)

- Cylinders must also be separated away from flammable and combustible liquids and from materials that easily ignite (such as wood, paper, oil, grease, etc.) by similar requirements as oxygen cylinders (6.1 m, or a fire wall at least 1.5 m high with ½ hr fire resistance).

8. What should I avoid doing?

- Do not use a cylinder as an electrical ground connection.
- Do not fasten cylinders to a work table or to structures where they could become part of an electrical circuit.
- Do not strike an arc on a cylinder.
- Do not use a flame or boiling water to thaw a frozen valve. Valves or cylinders may contain fusible plugs which can melt at temperatures below the boiling point of water. Warm water is acceptable.
- Do not use pry bars under valves or valve protection devices to pry cylinders loose when frozen to the ground. Use warm water.
- Do not place or store cylinders in unventilated enclosures such as lockers or cupboards.
- Do not use full or empty cylinders as rollers or supports.
- Do not tamper with or alter safety devices.
- Do not use a cylinder for any purpose other than to contain the gas for which the cylinder was designed.
- Do not place acetylene cylinders in a horizontal position.
- Do not accept compressed gas cylinders from the supplier unless they are properly labelled and have protective valve caps in place.

9. What should I do with empty or out of service cylinders?

- Mark or label them as "Empty cylinder" and store empty cylinders away from full cylinders.
- Return empties to the supplier.
- Remove regulators when not in use and store these away from grease and oil. Put protective caps on the fittings when in storage.
- Keep cylinders and fittings from becoming contaminated with oil, grease or dust.
- Do not use a cylinder that is not identified or if the label is not legible. The colours of industrial gas cylinders are not standardized.

10. How should I move the cylinders?

- To close the cylinder valves, remove the regulator and replace the valve protection cap and hand tight before moving a cylinder.
- Move cylinders with appropriate trolleys and secure the cylinders in an upright position.
- Use proper lifting cradles or a suitable platform when hoisting cylinders by a crane, derrick, or other hoisting mechanism.
- Call the supplier to remove leaky cylinders immediately.

- Secure cylinders in an upright position when cylinders are transported by motor vehicle.

10.1. **DO NOT**

- Do not lift a cylinder by the valve cap. Never sling with ropes or chains or lift with electromagnets.
- Do not drag, slide, or drop cylinders. They can be rolled for short distances on their base.
- Do not allow the cylinders to strike each other violently.
- Never place cylinders on their sides as rollers to move equipment.
- Do not lay acetylene cylinders on their sides. If an acetylene tank has accidentally been left on its side, set it upright for at least one hour before it is used.
- Do not try to refill a cylinder or mix gases in a cylinder.

10.2 When should I "crack" the cylinder?

Before attaching the regulator, wipe clean the valve outlet with a clean cloth free of oil and lint and "crack" a secured cylinder by opening the valve slightly then closing it immediately to blow out dust or dirt from the valve outlet. Use two hands on the valve and stand at the side of the valve - never stand directly in front of or behind the valve outlet.

Do not crack fuel gas cylinders due to the chance for the gas to ignite by friction, heating, or other ignition sources. Never crack hydrogen cylinders since the release of compressed hydrogen may ignite by itself.

Document last updated on October 3, 2017

Лекція №57

Тема лекції: «Обладнання електрогазозварника»

План лекції

1. A Guide to Selecting Welding Equipment
1.1. Electrodes
1.2. Clamps
1.3. Angle Grinders
2. A Guide to Welding Safety Gear
2.1. Helmets
2.2. Gloves
2.3. Grounding Clamps
2.4. Clothing
2.5. Safety Products

Література:

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.
2. https://www.machinemart.co.uk/c/welders-accessories/
3. https://www.lincolnelectric.com/en-us/equipment/Pages/welders.aspx
4. https://www.bakersgas.com/welding-equipment-protective-gear.php

Зміст лекції

1. A Guide to Selecting Welding Equipment

1.1. Electrodes

There are specific electrodes that match each of the three main welding processes. Stick welding uses a consumable electrode that is melted in order to create the weld joint. The E6010 electrode is one of the most popular electrodes, though the E6011, E6013, and E7018 are frequently listed by welders as excellent choices.

MIG welding uses a consumable electrode wire that is fed through the welding torch. Most projects use wire in the following range of thickness: .023, .030, .035, and .045, though a thicker wire may be needed for larger projects.

TIG welders use non-consumable electrodes that come in five main varieties. Ceriated and lanthanated electrodes are both good choices for most TIG welding applications. Avoid thoriated electrodes since they emit radiation when used and require a respirator.

1.2. Clamps

Clamps are a small part of the welding process, but they are critically important for keeping a weld joint lined up properly. If a workpiece shifts, the weld could be crooked and result in the loss of significant time if it has to be ground down and welded again.

The more clamps, the better. Some welders have stopped in the middle of their projects in order to buy more clamps, which shows just how important clamps are for welding.

1.3. Angle Grinders

Angle grinders are critical for preparing metal prior to welding, especially for MIG and TIG welding. An angle grinder is a portable tool that has the arbor at 90 degrees in relation to the tool. Depending on their size, grinders vary from 500 to 2500 watts. Pick an angle grinder with enough power to clean the metal sufficiently prior to welding. Every welding project is different, so choosing a grinder with more power and durability can make a significant difference when planning for future projects.

2. A Guide to Welding Safety Gear

2.1. Helmets

Welding emits ultraviolet light rays that are generated by the electric arc. The extreme brightness generated by welding can cause inflammation of the cornea and burn the retinas of your eyes. Some people even go blind because they do not use the right welding equipment. Dark face plates are good for preventing exposure to the ultraviolet rays.

Welding helmets are a critical piece of equipment because they protect your face from sparks and your eyes from harmful rays. The best choice for a welding helmet is an auto-darkening helmet that allows welders to keep both hands on task without having to reach up to put on the darkening visor.

A good weld can go bad if a torch shifts even an inch. Therefore experienced welders recommend the auto-darkening helmets since they can position their torch right where it belongs and start working immediately. The time it takes to darken a helmet is plenty of time to shift the position of a weld torch.

2.2. Gloves

The best welding gloves are made from top-grain leather, which is the high-quality outer layer of an animal's hide. Welding gloves balance flexibility with heat protection and will vary depending on the welding process used. Stick welding creates the highest heat and requires stiff, heavy-duty gloves that can withstand high temperatures, while TIG welding produces the least amount of heat and can use a lighter and flexible glove.

Goatskin leather gloves are quite popular and are typically ideal for TIG and MIG welding. Deerskin gloves offer the advantage of shaping themselves to a welder's hand over time and make for an extremely comfortable fit. The best glove options for stick welding include top-grain pigskin, elk skin, and cowhide.

2.3. Grounding Clamps

Grounding clamps are a critical safety measure that protect welders from electric shocks. In addition, a good grounding clamp will make it easier to start an arc and will protect your welder. The best ground clamps are made of copper, not just lined with copper on the edges of the clamp.

Grounding clamps will be most effective if they maintain constant contact with the work piece. Some welders modify their set ups by adding a large piece of copper cable to their clamps in order to improve the amount of contact with the surface.

2.4. Clothing

No one wants to work on a welding project and discover sparks and flames on his/her shirt. Synthetic shirts that aren't specifically made for welding work can be particularly dangerous for welders when the sparks begin to fly.

Long sleeves are especially important for welding work since the rays from welding can cause sunburn on exposed skin. There are many solutions for welding clothing, but oftentimes the temperature of a work site or shop will determine what a welder wears.

Leather clothing is the safest choice, but it is also the warmest. Therefore, many welders wear leather sleeves, longer gauntlet gloves, a leather apron, or a kind of modified welding bib with long sleeves and an open back. Usually a cotton shirt is the best choice to wear under protective gear since it's not as flammable as synthetic clothing.

2.5. Safety Products

Depending on the nature of your work and your shop set up, your safety needs will vary. At the very least every shop needs a fire extinguisher and some form of ventilation. Fume extraction systems represent the best option, but many home welders can get by with an open garage door or a simple ventilation system set up in a window. However, ventilation is not optional since certain welding processes can give off toxic fumes depending on the materials being welded.

If welding at home, it's important to set up welding screens to protect passing pedestrians or fire retardant barriers to prevent sparks from catching on any cloth, cardboard, or saw dust in the garage. For particularly messy welding projects, these screens also save on clean up.

For shops or garages that have lots of fuel cannisters on hand, Baker's offers fuel storage solutions that will keep them upright and safe. In a garage or shop where the unexpected can happen, securing fuel and shielding everything from sparks is critical.

The gear and products in this article are just some of the basics for welding, but welders will need to purcahse shielding gas and other materials depending on their work

Лекція №60

Тема лекції: «Використання комп'ютерних систем у зварюванні»

План лекції

1. Start Up
2. Continuous Welding

2.1. Automation of Electron Beam Process

3. Control of following sub systems is required:
4. Industrial Robots for Manufacturing Material Removal Processes
5. Artificial Intelligence (AI) Techniques in Production
6. Virtual Manufacturing

7.Virtual Reality—A logical Evolution of Existing Human-Computer Interfaces

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4. http://www.cweldtech.com/presentation/CWT%20New%20Product%20Line%20Presentation.pdf
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Зміст лекції

1. Start Up

Most important application of computer in welding is for the setting of welding parameters. Computer is used to control the welding process with regard to both static and dynamic characteristics.

A computerised welding process controller is designed to handle the various phenomena occurring during the welding process, viz., the start-up sequence, continuous welding-including parameter setting, and the termination sequence.

The pressing of the gun switch is sensed and it gives a start reference for the welding current. The arc voltage is also measured. Before the wire has reached the workpiece, open circuit voltage is sensed. When a number of subsequent arc voltage readouts show values below a correspondingly adapted minimum level, the processor concludes that the wire is in contact with the workpiece and it emits a maximum current reference to ensure instant striking of the arc.

2. Continuous Welding

The different settings set by operator are: the desired wire feed speed, the desired arc voltage, and the desired arc trim (i.e. dynamic response of current on measured arc voltage variations). From these settings and measured arc voltage, the process controller continuously calculates the new reference values for the welding current. Any change in the preset arc voltage value implies a parallel offset of the static characteristics of the machine, and a change of the arc trim setting changes the dynamic characteristics of the machine.

During start up the welding process controller starts operating with an increased voltage reference and a decreased arc trim value. These start up parameters remain in force until such time as the power source has completed three subsequent short-circuiting. From then on the process control is carried out by way of the normal values as set by the welder.

When computer has sensed the release of gun switch, it emits a current pulse at a value considerably higher than the latest momentary value as calculated by the computer and with doubled voltage reference value.

2.1. Automation of Electron Beam Process

Electron beam machine generates, controls and directs a flow of highly charged electrons towards a target with a view to melt, drill, transform surface, welding etc. Electron beam welding is a high energy fusion process, achieved by bombarding the joint to be welded with a focused beam of electrons.

The electrons are produced from thermionic emission of a tungsten emitter and accelerated to two-third the speed of light by application of very high potential between the source electrodes. The accelerated beam of electrons in the evacuated enclosure, can be aligned, focused and deflected towards its target. Generation and control of beam intensity is achieved by electrical means and the positioning of the beam by electro-magnetic influences.

3. Control of following sub systems is required:

(i) High voltage supplies
(ii) Electromagnetic supplies
(iii) Evacuation systems, including vacuum measurement
(iv) Remote manipulation controls
(v) Remote optical viewing
(vi) Inter-locking between above systems from safety consideration.

Fig. 44.1 shows a block diagram to achieve such controls and automation.

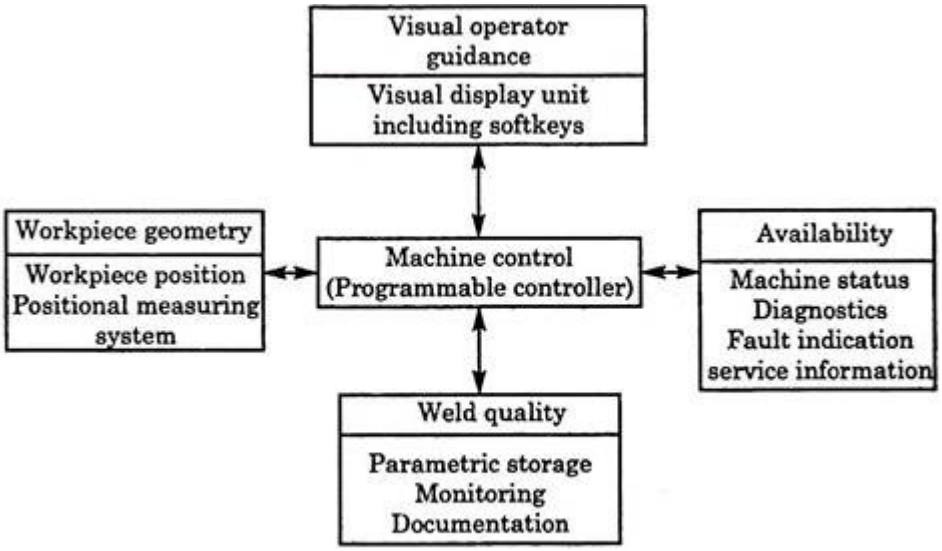

Fig. 44.1

Such a machine will respond to manual controls from the operator. Manual initiation will trigger the machine to perform a complex logic array, for example, evacuation of the work chamber requiring control of several pumps, valves and vacuum sensors.

Visual operator guidance provides guidance to the operator to control by displaying a series of options on screen. Provision for text/graphic information relating to the equipment is available. Faults are indicated from the sensors located around the machine. Diagnostic routines, allowing the testing of system are also available.

Weld quality is achieved by incorporating pre-programmable weld data unique to a particular component. When workpiece geometry data is fed, then program contains all necessary movements required to bring the weld joint line under the beam's axis.

Computerised numerical control is necessary when the process requires two or more dimensional axes to be controlled simultaneously and/or multiple electrical parameters require high speed changes independently from each other.

Weld quality is affected by the integrity of weld parameters. On line monitoring of parameters which can influence the desired fusion geometry is made and compared to pre-determined levels. Deviations from these tolerance bands trigger audible and visual alarms alerting the operator.

4.Industrial Robots for Manufacturing Material Removal Processes

While robots have been successfully used in non- contact manufacturing applications (like painting, welding, glueing, etc.) and achieved increased productivity and quality; attempts are now being made to exploit their capabilities in contact type manufacturing applications (like grinding, milling, deburring, polishing, etc.)

The former tasks required only the position control of the robot manipulator with limited requirements of robot positioning accuracy and repeatability. However, in latter application, new understanding and insights into position/force control system is required.

The industrial robots in use of material removal differ from conventional machine tools in the geometrical rigidity and motion axes. Conventional tools are structurally very stiff because of use of massive structural support members (of the order of 2×10^8 N/m).

On the other hand industrial robots have structural and control stiffness of the order of 2×10^5N/m. Thus vibrations and chattering have to be tackled very carefully in the design of robot system. The conventional machine tools are designed with translational orthogonal

motion axes but robot may use combinations of rectangular, cylindrical, spherical and revolute movements.

In order to avoid the passing of impulsive nature of the tool cutting action to the robot structure, the active end- effector device is designed to isolate high impulsive forces from the industrial robot arm by filtering them into a quasi-constant force. A tool guiding mechanism as a bracing structure has also been used to increase the robot stiffness, but the arm motion has been constrained.

In order to make robots successful in material removal applications, lot of work is being done in:

(i) Force and motion control,
(ii) Robot structural behaviour,
(iii) Material removal characteristics,
(iv) Workpiece fixturing,
(v) Programming.

5.Artificial Intelligence (AI) Techniques in Production:

AI systems are finding more and more application in production techniques. These concern knowledge based systems and expert system. Knowledge base contains information together with relevant rules which are executed by an inference engine. Expert system has four modules-knowledge base, knowledge acquisition, inference engine, and explanatory interface.

Expert system applies rules based on human expertise so as to use the information in the knowledge base to solve real world problem. Such a system can be integrated into larger systems to alter real advantages to CAD/CAM system. The success of system depends on ability to elicit knowledge in the form of specific codifiable rules.

Further such systems have self-learning capability so that they can modify rules and knowledge as the system is used over a period of time. Standard packages can also be integrated into these systems to obtain overall best advantages.

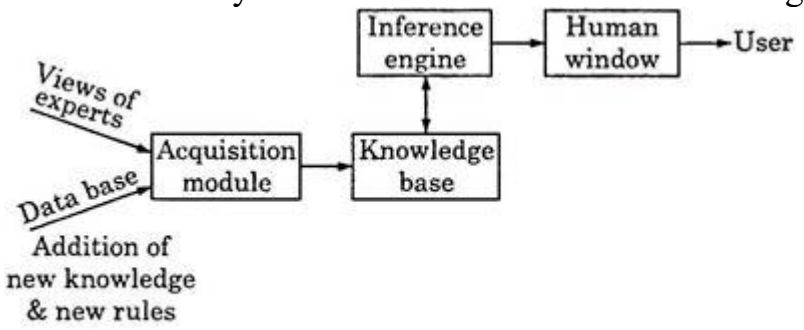

Fig. 44.5

6.Virtual Manufacturing:

A virtual manufacturing system can be built within a computer and carry out machining in this virtual factory (Refer Fig. 44.10)

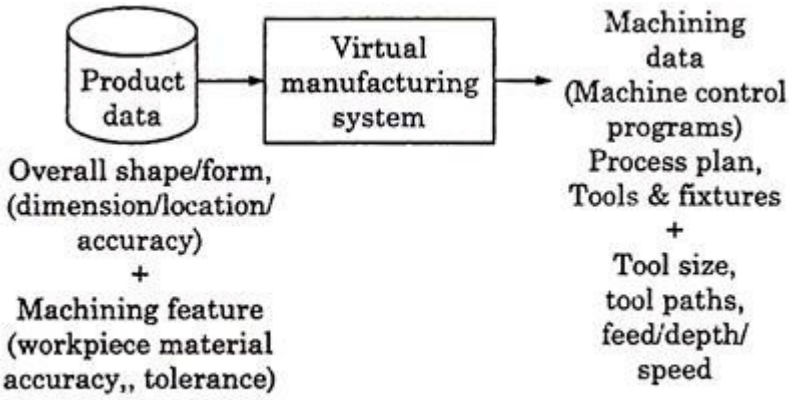

Fig. 44.10

A product is described using design features. NC data generation system calculates cutter paths based on tools and machining features.

Machining data consists of machine control programs. The accuracy of machining data depends on consideration of all constraints. It is necessary to consider machining environment data, i.e., machine specification and the dynamic condition data generated by simulation.

In virtual manufacturing system, first machining features are extracted through preliminary operation of the appropriate virtual manufacturing device (VMD). Next machining is simulated by precise operation of VMD.

Then the machining data is evaluated and verified using the results of simulation (VMD is a computer model which represents the specification, function and behaviour of a physical manufacturing device and thus VMD is a controlled object in the virtual factory).

Virtual manufacturing factory thus acts as a mechanism to generate optimum machining data.

6. Virtual Reality—A logical Evolution of Existing Human-Computer Interfaces:

The techniques of interacting with computer have changed from time to time, starting from punch cards to terminal and keyboard to windows operating environment. Virtual reality techniques provide unique way of interacting with computer data and images.

These remove the barriers of keyboard, monitor and mouse and allow user to experience the reality of a computer-generated scene. This would open up new opportunities to expand the use of computer technology for engineers in areas of design, prototyping, maintenance and assembly, factory layout and planning, etc.

The graphic models in virtual reality technique appear to occupy three-dimensional space within the viewing area. The natural motions of human (hand and head movement) act as interface to system. A person can look under, around, walk into the computer image of a design.

This technology provides immersive, interactive, multi-sensory, viewer-centred, three-dimensional computer generated environments and user gets a feeling of moving around inside and occupying a position in the computer-created world.

Objects in the computer environment occupy space and the user navigates through the space as if it were the real environment. The images in the environment change positions as the user moves in the space such as they would change positions in the real world.

Sensory inputs are supplied that support the illusion that the user is a part of the computer environment. Thus virtual reality technique offers a new and innovative way to

interact with the complex data and designs and presents the opportunity to design in a 3-D environment.

Sense of immersion can be created using high-end computers, virtual reality software, visual displays, tracking devices, interaction devices, audio devices, and haptic devices. Head mounted display (helmet) is very commonly used visual display. The helmet contains LCD or CRT screens, one for each eye.

Position trackers (ultrasonic or electromagnetic receivers/transmitters) on helmet provide spatial coordinates to the computer as the user moves around in the space. The spatial coordinates change the image presented in the helmet based on the orientation and location of the user's head. 3-D mouse has also been developed. Instrumented gloves (having sensors for position of hand) are also used to interact in the virtual environment.

A unique virtual reality environment is provided by Care Automatic Virtual Environment in which stereo computer images are projected on three walls and the floor of a room. Multiple users may be present in the room but only one person controls the view with a position tracker.

Users wear stereo shutter glasses that convert the images on the walls and floors into stereo images. Haptic devices provide the user with information about touching virtual objects. Stereo head-phones mounted in helmets provide 3-D sound.

Virtual prototypes can be developed using these techniques and studies like whether a part fills properly, whether the knob or dial is accessible, assessment of visibility, rechangeability, accessibility, clearances, comfort, aesthetics can be performed. In this way, need of developing several prototypes is eliminated and significant savings can be realised in design of any machine tool.

Лекція №60

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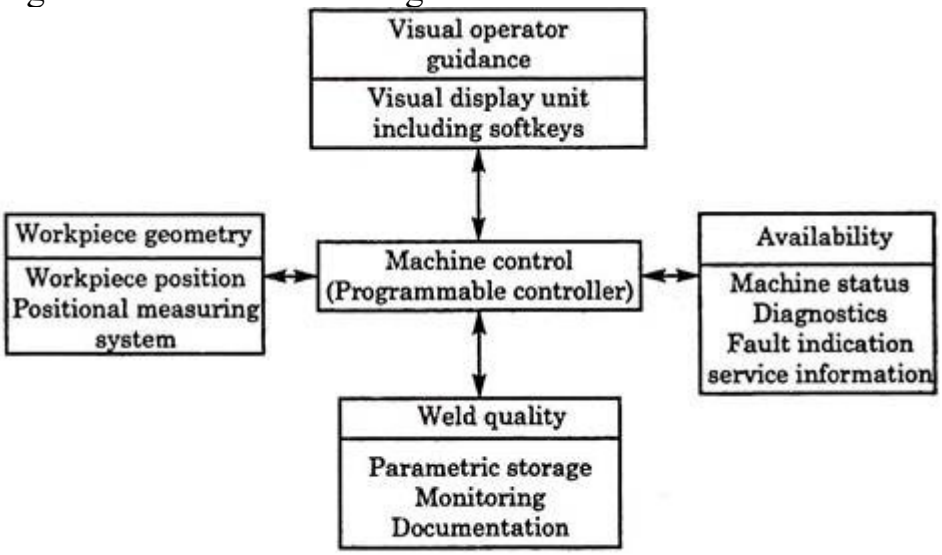

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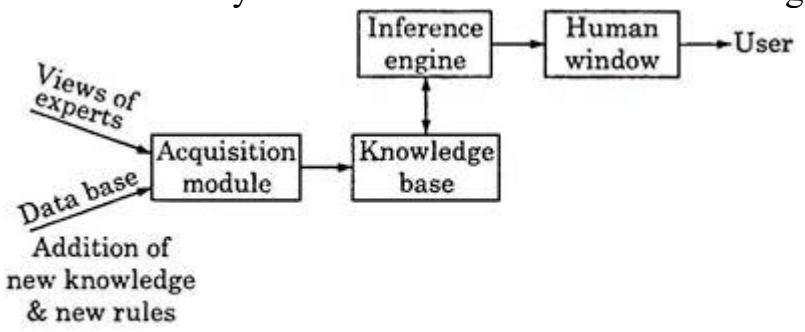

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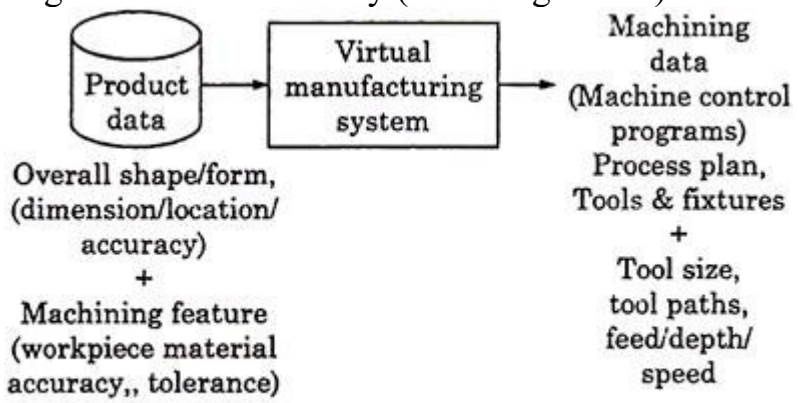

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The techniques of interacting with computer have changed from time to time, starting from punch cards to terminal and keyboard to windows operating environment. Virtual reality techniques provide unique way of interacting with computer data and images.

These remove the barriers of keyboard, monitor and mouse and allow user to experience the reality of a computer-generated scene. This would open up new opportunities to expand the use of computer technology for engineers in areas of design, prototyping, maintenance and assembly, factory layout and planning, etc.

The graphic models in virtual reality technique appear to occupy three-dimensional space within the viewing area. The natural motions of human (hand and head movement) act as interface to system. A person can look under, around, walk into the computer image of a design.

This technology provides immersive, interactive, multi-sensory, viewer-centred, three-dimensional computer generated environments and user gets a feeling of moving around inside and occupying a position in the computer-created world.

Objects in the computer environment occupy space and the user navigates through the space as if it were the real environment. The images in the environment change positions as the user moves in the space such as they would change positions in the real world.

Sensory inputs are supplied that support the illusion that the user is a part of the computer environment. Thus virtual reality technique offers a new and innovative way to interact with the complex data and designs and presents the opportunity to design in a 3-D environment.

Sense of immersion can be created using high-end computers, virtual reality software, visual displays, tracking devices, interaction devices, audio devices, and haptic devices. Head mounted display (helmet) is very commonly used visual display. The helmet contains LCD or CRT screens, one for each eye.

Position trackers (ultrasonic or electromagnetic receivers/transmitters) on helmet provide spatial coordinates to the computer as the user moves around in the space. The spatial coordinates change the image presented in the helmet based on the orientation and location of the user's head. 3-D mouse has also been developed. Instrumented gloves (having sensors for position of hand) are also used to interact in the virtual environment.

A unique virtual reality environment is provided by Care Automatic Virtual Environment in which stereo computer images are projected on three walls and the floor of a room. Multiple users may be present in the room but only one person controls the view with a position tracker.

Users wear stereo shutter glasses that convert the images on the walls and floors into stereo images. Haptic devices provide the user with information about touching virtual objects. Stereo head-phones mounted in helmets provide 3-D sound.

Virtual prototypes can be developed using these techniques and studies like whether a part fills properly, whether the knob or dial is accessible, assessment of visibility, rechangeability, accessibility, clearances, comfort, aesthetics can be performed. In

this way, need of developing several prototypes is eliminated and significant savings can be realised in design of any machine tool.

Лекція Практичне заняття №61-62

Тема лекції: «Моя майбутня професія – електрогазозварник. Працевлаштування. Написання автобіографії»

План лекції

1. How to become a welder?
2. Job Description of a Welder
3. Welder Career Video Transcript
4. The 6 Things You Need to Know to Start Welding
   5.Autobiography
   5.1. The Emergence Of Autobiography
   5.2. Types Of Autobiography
   6. Tips For Writing Your Autobiography

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Зміст лекції

1. How to Become a Welder

Most welders have a high school diploma or equivalent and a professional certification. Certifications can be gained at vocational schools, community colleges, or private programs. On-the-job training is often included in these training programs. Courses usually included are blueprint reading, shop mathematics, mechanical drawing, physics, chemistry, and metallurgy classes. A welder can also gain certification through the American Welding Society.

2. Job Description of a Welder

Welders primary duty is joining metal parts together. They work on metal components of a various of building or construction industries. Examples include but are not limited to pipelines, bridges, power-plants, or refineries. They may also work in manufacturing cars or ships. Welders maintain the machinery and equipment they work with. Because of the wide variety of work and industries welders work in there are more than 100 different welding processes they can use, the most common is arc welding.

Welders work full-time and often must work overtime. They can work up to 10 hours a day if needed. They primarily work outdoors and are exposed to hazardous situations on a daily basis. Some examples include confined spaces, on scaffolding, or inclement weather. Welders with the highest skill levels and a willingness to relocate have the greatest advantage for solid employment.

3. Welder Career Video Transcript

Welders, cutters, solderers, and brazers use hand-held or remotely controlled equipment to join or cut metal parts, or to smooth surfaces. These workers study sketches and

specifications to understand the full picture of the structure and materials before they start their work. Welders' and cutters' tools use high heat to soften the material.

Welders use these tools to join metal in a wide variety of industries, from car racing and manufacturing to steel beam construction. Cutters cut and trim metal objects, or dismantle large objects such as ships and railroad cars. Work may be outdoors on a scaffold or high platform, or indoors in confined areas. Bending, stooping, and heavy lifting are common. Soldering and brazing workers use molten metal to join two pieces of metal. Soldering involves precision tasks such as forming joins in electronic circuit boards, while brazing uses metals at higher temperatures to, for example, apply coatings to parts for protection against wear and corrosion. Other workers in this field manage machines or robots that perform welding, brazing, soldering, or heat treating tasks. These workers may also operate laser cutters or laser-beam machines.

Hazards include very hot materials and the intense light created by the arc. While employers are required to provide safely ventilated areas, these workers typically wear safety equipment to prevent injuries. Most positions are full-time; evenings, weekends, and overtime hours are common. High school education, along with technical and on-the-job training, is typically required to enter these fields. A certification or other skill credential is attractive to employers.

4. The 6 Things You Need to Know to Start Welding

1. Safety: Absolutely NOT optional.

Before you even think about welding, make sure you have the right gear, including fire resistant jacket, safety glasses, welding gloves and an approved welding helmet. Helmets have come a long way in recent years. To make things easier, look for an auto darkening helmet like these Viking helmets from Lincoln Electric. Make sure you have adequate ventilation or make use of a fume extraction system. Also, don't weld on or near flammable materials; choose a location that will give you plenty of room to let sparks fly.

2. Weld Processes: MIG, Stick Flux-Cored and TIG.

Don't get buffaloed by these terms. They are explained below, from the easiest to get started with, to the ones that will take more skill and experience to master.

Wire welding uses spools of wire fed through a gun, and the constant feed of wire minimizes starts and stops making it easy for relatively inexperienced welders to create good looking joints. It's also faster, more economical, and better suited to welding thin sheet metal.

There are two types of wire welding: MIG (metal inert gas) and flux-cored. MIG welding relies on a constant stream of shielding gas to protect the weld from contamination. The gas is plumbed into the welding gun from a gas bottle. The limitations to MIG welding are that it can be difficult to use outdoors (wind can blow away your shielding gas), and you have to

cart around the gas bottle. Flux-cored welding uses wire that is specifically designed for use with or without shielding gas depending upon the wire being used. Those designed for use without gas (self-shielded) are often recommended for outdoor work.

Stick (also called SMAW) Stick welding is frequently the best choice for quick repairs and is often the first process that most beginners learn. It's easy to set up and as the name suggests, it uses a stick electrode like Excalibur 7018, so you don't need a wire feeder. Stick is slower than MIG welding, but often more forgiving when working with dirty or rusty metal. Stick is not recommended for this sheet metal welding.

TIG (tungsten inert gas) welding is preferred for architectural work or automotive work where the weld has to look good. It's also a good way to weld thin metal and sheet metal and achieve a seamless look. On the difficulty scale, TIG is usually considered the hardest to learn, but it's not out of your grasp if you put the effort into it.

3. Input Voltage: Really just two choices here—110v or 230v—both available in most homes or garages.

In general, the lower input voltages are sufficient for thinner materials; higher input voltage will allow you to penetrate thicker materials. Most beginner welders would benefit from a machine that offers dual voltage (both 110v and 230v) that they can "grow into" so that as they get more confident, they won't be limited.

4. User Interface: Look for one that is intuitive and easy to use.

It can be tricky for a novice to "dial in" welding settings, so look for a machine that does this for you with a logical progression that allows you to select your process, the thickness and material type you're going to weld and the type of consumable (wire or electrode) that you're going to weld with. Good machines will automatically know what input voltage you're plugged into and will adjust settings accordingly (or tell you that your selections are out of range).

5. Material: Some processes and consumables are better for welding certain materials, andvsometimes can require additional tools.

For example, you can weld aluminum with the MIG process, but you will get better results using a spool gun to feed the consumable (aluminum doesn't feed well through a wire feeder and a long cable). Look for guidance from the manufacturer of the welder you're considering purchasing and think about the projects you have in mind. Can you weld a variety of materials like aluminum, mild steel and stainless in a variety of thicknesses? If so, you can be pretty sure that you're getting a machine that will grow with you.

6. Consumables: "Consumable" is the industry term for the wire, electrode or filler material used in welding.

You need to match your consumable with the welding process (see above) as well as the material you're welding on. As you get more proficient, you'll begin to recognize the nuances among consumables and will likely gravitate towards a particular brand. Lincoln Electric offers consumables for just about every material or alloy, so they are always a great place to start.

5.Autobiography

Autobiography, the biography of oneself narrated by oneself. Autobiographical works can take many forms, from the intimate writings made during life that were not necessarily intended for publication (including letters, diaries, journals, memoirs, and reminiscences) to a formal book-length autobiography.

Formal autobiographies offer a special kind of biographical truth: a life, reshaped by recollection, with all of recollection's conscious and unconscious omissions and distortions. The novelist Graham Greene said that, for this reason, an autobiography is only "a sort of life" and used the phrase as the title for his own autobiography (1971).

5.1. The Emergence Of Autobiography

There are but few and scattered examples of autobiographical literature in antiquity and the Middle Ages. In the 2nd century BCE the Chinese classical historian Sima Qian included a brief account of himself in the *Shiji* ("Historical Records"). It may be stretching a point to include, from the 1st century BCE, the letters of Cicero (or, in the early Christian era, the letters of Saint Paul), and Julius Caesar's *Commentaries* tell little about Caesar, though they present a masterly picture of the conquest of Gaul and the operations of the Roman military machine at its most efficient. But Saint Augustine's *Confessions*, written about 400 CE, stands out as unique: though Augustine put Christianity at the centre of his narrative and considered his description of his own life to be merely incidental, he produced a powerful personal account, stretching from youth to adulthood, of his religious conversion.

Confessions has much in common with what came to be known as autobiography in its modern, Western sense, which can be considered to have emerged in Europe during the Renaissance, in the 15th century. One of the first examples was produced in England by Margery Kempe, a religious mystic of Norfolk. In her old age Kempe dictated an account of her bustling, far-faring life, which, however concerned with religious experience, reveals her personality. One of the first full-scale formal autobiographies was written a generation later by a celebrated humanist publicist of the age, Enea Silvio Piccolomini, after he was elevated to the papacy, in 1458, as Pius II. In the first book of his autobiography—misleadingly named *Commentarii*, in evident imitation of Caesar—Pius II traces his career up to becoming pope; the succeeding 11 books (and a fragment of a 12th, which breaks off a few months before his death in 1464) present a panorama of the age.

The autobiography of the Italian physician and astrologer Gironimo Cardano and the adventures of the goldsmith and sculptor Benvenuto Cellini in Italy of the 16th century; the uninhibited autobiography of the English historian and diplomat Lord Herbert of Cherbury, in the early 17th; and Colley Cibber's *Apology for the Life of Colley Cibber, Comedian* in the early 18th—these are representative examples of biographical literature from the Renaissance to the Age of Enlightenment. The latter period itself produced three works that are especially notable for their very different reflections of the spirit of the times as well as of the personalities of their authors: the urbane autobiography of Edward Gibbon, the great historian; the plainspoken, vigorous success story of an American who possessed all talents, Benjamin Franklin; and the introspection of a revolutionary Swiss-born political and social theorist, the *Confessions* of Jean-Jacques Rousseau—the latter leading to two autobiographical explorations in poetry during the Romantic period in England, William Wordsworth's *Prelude* and Lord Byron's *Childe Harold*, cantos III and IV.

5.2. Types Of Autobiography

An autobiography may be placed into one of four very broad types: thematic, religious, intellectual, and fictionalized. The first grouping includes books with such diverse purposes as *The Americanization of Edward Bok* (1920) and Adolf Hitler's *Mein Kampf* (1925, 1927). Religious autobiography claims a number of great works, ranging from Augustine and Kempe to the autobiographical chapters of Thomas Carlyle's *Sartor Resartus* and John Henry Cardinal Newman's *Apologia* in the 19th century. That century and the early 20th saw the creation of several intellectual autobiographies, including the severely analytical *Autobiography* of the philosopher John Stuart Mill and *The Education of Henry Adams*. Finally, somewhat analogous to the novel as biography is the autobiography thinly disguised as, or transformed into, the novel. This group includes such works as Samuel Butler's *The Way of All Flesh* (1903), James Joyce's *A Portrait of the Artist as a Young Man* (1916), George Santayana's *The Last Puritan* (1935), and the novels of Thomas Wolfe. Yet in all of these works can be detected elements of all four types; the most outstanding autobiographies often ride roughshod over these distinctions.

6. 9 Tips For Writing Your Autobiography

Writing your autobiography can be a great way to tell your life story and provide a keepsake for friends and family. And you don't need to be a famous person or a professional writer to do it. Read on to find out how to compose an autobiography that's both informative and interesting…

You don't have to be famous to write your own autobiography. Some people create a memoir simply because they enjoy writing, while others want to preserve their life story for future generations. They may not intend it to be read by anyone other than their own family. Unfortunately, many of those who want to document their life shy away from the project, fearing that composing an autobiography is too difficult for the average person. In reality, anyone can write a memoir suitable for an audience of family members and close friends.

If you're afraid your life hasn't been "big enough" to merit an autobiography, don't worry. Your family will want to know about your personal history and relationships with others. They'll also be interested in how you felt about events you've lived through, and the lessons you learned along the way.

"Look for the times when your life changed the most, and when you changed the most," recommends poet and memoirist Janice Erlbaum in *The Autobiographer's Handbook*(Holt Paperbacks). "Those are the times of peak drama in your life."

Whatever your motivation for writing your autobiography – and whatever kind you want to write – these tips can help get you started.

1. Get a feel for the work.

One of the best ways to learn how to write your life story is to read some of the great autobiographies that have been committed to print. For example, Benjamin Franklin, Katharine Hepburn, Maya Angelou, Nelson Mandela and Billy Graham all wrote excellent autobiographies that are still read today.

You can find examples of how to write an autobiography in the stories of sports figures, great religious leaders, government officials, doctors, railroad workers, singers and actors, along with ordinary people who found meaning in their lives. Choose a category or person that inspires you, and read several examples of how great life stories are shared with the public.

Reading different styles of writing can also help you get a better feel for how to write an autobiography that will best suit your own story.

2. Understand your intended audience.

The next step in the writing process is to determine who your readers will be. If you're writing your life story to give to your grandchildren as a keepsake, your word choices and tone will be drastically different than if you're writing for the general public.
Writing for family members requires less detail when describing familiar settings and people. Instead, provide your own memories and perspective on events, and try to include interesting facts and anecdotes that family members may not already know.
Those outside your group of friends and family will need a more complex word picture to grasp the settings and characters in your story. Think of how you would describe these people and events to a stranger: What would someone need to know in order to understand them?

3. Develop a core concept.

Many great autobiographies have a central idea that unifies the entire life story throughout the book. Persevering love, faith in the face of hardship, overcoming tough odds, going from rags to riches, or lessons learned over time are all inspiring themes.
What is key to the story of your life? Determining one main reoccurring theme will help weave continuity and interest throughout your autobiography.

4. Jump-start your memories.

Think about all the different periods in your life. You may recall long-forgotten events and people you haven't seen in years, or discover new meaning in your memories as you string them together.
Looking through family photos and talking with parents, grandparents, your spouse and old friends can help you remember significant events that are rich with details and entertaining stories. Diaries, letters and even emails can help spur your recall.
Ask each family member to bring one favorite story from your life to the next family reunion. The person with the best story wins a prize, and all of the entries can be used as possible material for your autobiography.
Include all five senses in your writing whenever possible. Rich, detailed writing can bring your story alive for your readers. Think of how you will answer the following questions: Who? What? When? Where? How? Why?

5. Organize your story.

Determine where your journey with the reader will begin. Will you start with your birth, or skip your childhood and begin with your first true love? Some writers choose to list their story chronologically from their childhood to the present day, while others opt to arrange their book according to themes or major events.
Whichever format you choose, having a written outline will help keep you organized. Some writers benefit from making notes on index cards and organizing them in a recipe box. Others prefer compiling notes and ideas on a computer – they're easy to search, and quite a few programs and apps are available to help you keep everything organized.
As with any kind of writing, it's important to set a firm start date, as well as a weekly goal to help keep you on track. Set a specified daily word count, or decide to write one chapter per week. Determine a date when you'd like to have a first draft completed.

6. Keep your focus.

Find a quiet time to write every day – a time when you can get lost in your memories and let your thoughts flow from your fingertips. Some writers prefer early-morning hours, while other write better late at night. Find a time that fits your schedule and set a regular appointment to write your story.

It may be helpful to surround your work area with inspiring items such as family photos,

inspirational quotes and your favorite music.
Staying focused on why you're writing your autobiography may be difficult as time progresses. Write out a mission statement that describes the inspiration for writing your life story, and refer to it when you feel a drop in your motivation.

7. Keep it interesting.

After you have written out a particular scene or event, go back and read what you wrote aloud. Check for any awkward phrasing or sentences that are bogged down with too many details. Your story should move the reader smoothly from one scene to the next.
Cutting out unnecessary words and overly long sentences can help your writing flow without being interrupted.
You writing should be descriptive. The best way to do this is to "paint a mental picture" with your words. For example, simply stating that Uncle Joe smelled bad after being sprayed by a skunk is not as interesting as describing everyone's reaction to Uncle Joe when he walked into the room.

8. Use writing tools.

If you find that you're struggling, autobiography templates can help you get started. Available in books and online (including on some genealogy websites), these tools present you with a series of questions about your life. You simply answer them, and the templates arrange your answers into story form.
A good dictionary, thesaurus, and word processing program are also indispensable tools when writing an autobiography. But don't use big or complicated words in an attempt to impress your readers – instead, choose language that best helps you tell your story.

9. Edit your work.

Editing and improving your work can be a difficult process, even for a professional writer. Consider having friends and family read a draft – their suggestions could help you finish your autobiography more easily. And they may find spelling and grammar mistakes that you've missed.
Keep in mind that you don't have to make their suggested changes – as the author, you have the final say.
Before you consider the work finished, you may want to set it aside for a few weeks, then read it with fresh eyes. Does it say everything you want to say? Is it missing important events, or are there stories you still want to recount?
At the same time, don't fall under the spell of perfectionism. Your autobiography doesn't have to be the greatest book ever written for your friends and family to enjoy reading it. They want to know what really happened in your life!
Writing your autobiography can be an enlightening and enjoyable process. By following a structured plan and working to keep your focus and motivation, your life story may soon be a reality that will be treasured by your loved ones for generations to come.

Практичне заняття №63

Тема лекції: «Працевлаштування. Розмова з роботодавцем. Запит по телефону»

План лекції

1. What are Telephone Etiquettes? General rules
2. Rules for answering calls
3. Rules for making calls
4. Handling Rude or Impatient Callers
5. Taking Messages

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Зміст лекції

1. What are Telephone Etiquettes? General rules

Telephone is an important device with the help of which people separated by distance can easily interact and exchange their ideas. Got a brilliant idea and want to convey it to your friend staying out of the country, use the telephone. Telephone is one of the easiest and cheapest modes of communication.

Telephone etiquettes - An individual needs to follow a set of rules and regulations while interacting with the other person over the phone. These are often called as telephone etiquettes. It is important to follow the basic telephone etiquettes as our voice plays a very important role in creating an impression of our personality, education, family background as well as the nature of job we are engaged in. The person giving the information is called the sender and the second party is the recipient.

Let us now study the various telephone etiquettes. Please find below the various telephone etiquettes.

- Always remember your **voice has to be very pleasant** while interacting with the other person over the phone. Don't just start speaking, before starting the conversation use warm greetings like "good morning", "good evening" or "good noon" depending on the time.
- **Never call any person at odd hours** like early morning or late nights as the person will definitely be sleeping and will not be interested in talking to you.
- **In any official call, don't use words like" Any guess who I am?** "as the person on the other side might be occupied with something and can get disturbed. Always say "Is it Ted?", and do ask him, "Is it the good time to talk to you?" and then start communicating. If the person sounds busy always wait for the appropriate time.

- **Make sure your content is crisp and relevant**. Don't play with words, come to the point directly and convey the information in a convincing manner. First prepare your content thoroughly and then only pick up the receiver to start interacting.
- After dialing, always reconfirm whether the person on the other side is the desired person whom you want to interact with. Always ask "Am I speaking to Mike?" or "Is this Jenny?" before starting the conversation.
- Always carefully dial the numbers, never be in a rush or dial the numbers in dark as it would lead to a wrong call. If by mistake you have dialed a wrong number, don't just hang up, do say sorry and then keep the phone courteously.
- **Never put the second party on a very long holds**. Always keep the information handy and don't run for things in between any call as the listener is bound to get irritated.
- While interacting over the phone, don't chew anything or eat your food. First finish your food and then only dial the number. If you are reading, please leave the book aside, first concentrate what the other person wishes to convey and then continue with the book.
- After completing the conversation, don't just hang up. Reconfirm with the receiver whether he has downloaded the correct information or not and do end your conversation with pleasant words like "Take care", "nice speaking with you" and a warm bye. Never say Goodbye.
- Always speak each and every word clearly. The person on the other hand can't see your expressions so remember your tone should be apt to express your feelings in the correct form.
- **Don't take too long to pick up any call**. If you miss the call, make sure you give a call back as the other person might have an important message to convey. Avoid giving missed calls at work places as it irritates the other person.
- In professional talks, never keep the conversation too long as the other person might be busy. Always keep the content crisp and relevant and do come to the point after formal greetings.
- If you are not the correct person and the speaker needs to speak to your fellow worker always say "one moment please- I will call him in a minute". If the colleague is not in the office premises, always take a message on his behalf and don't forget to convey him when he is back.
- Decrease the volume of the television or turn off the speakers while speaking over the phone as noise acts as a hindrance to effective communication
- If there is any disturbance in the network, don't just keep speaking for the sake of it; try to call after sometime with a better line.

Remember all the above telephone etiquettes must be practiced for an effective and healthy telephonic discussion and smooth flow of information.

2. **Rules for answering calls**

- Try to answer the phone within three rings. Answering a phone too fast can catch the caller off guard and waiting too long can make the caller angry.
- Answer with a friendly greeting. (Example - "Good Afternoon, Lehigh University, Telecommunications, Lizanne speaking, how may I help you?").
- Smile - it shows, even through the phone lines; speak in a pleasant tone of voice - the caller will appreciate it.

- Ask the caller for their name, even if their name is not necessary for the call. This shows you have taken an interest in them.
- If the caller has reached a wrong number, be courteous. Sometimes a caller is transferred all over campus with a simple question and the caller gets frustrated. If possible, take the time to find out where they should be calling/to whom they should be speaking.
- Use the hold button when leaving a line so that the caller does not accidentally overhear conversations being held nearby.
- When you are out of the office or away from your desk for more than a few minutes, forward your phone to voicemail.

3. **Rules for making calls**
   - When you call someone and they answer the phone, do not say "Who am I speaking with?" without first identifying yourself: (Example - "This is Lizanne from Lehigh/Telecommunications. To whom am I speaking?")
   - Always know and state the purpose of the communication.
   - When you reach a wrong number, don't argue with the person who answered the call or keep them on the line. Say: "I'm sorry, I must have the wrong number. Please excuse the interruption." And then hang up.
   - If you told a person you would call at a certain time, call them as you promised. If you need to delay the conversation, call to postpone it, but do not make the other person wait around for your call.
   - If you don't leave a number/message for someone to call you back, don't become angry if they are not available when you call again.

4. **Handling Rude or Impatient Callers**
   - Stay calm. Try to remain diplomatic and polite. Getting angry will only make them angrier.
   - Always show willingness to resolve the problem or conflict.
   - Try to think like the caller. Remember, their problems and concerns are important.
   - If you are in a non-supervisory position: Offer to have your supervisor talk to the caller or call him/her back if the caller persists.
   - If you are supervisor: Be willing to handle irate callers. Speak slowly and calmly. Be firm with your answers, but understanding. Sometimes the irate caller just wants someone in a supervisory capacity to listen to their story even if you are unable to help them.
   - When putting a caller on hold, always ask permission. Examples: "Would you mind holding while I check?" or "Can you hold briefly while I see if Mr. Jones is available?" When taking a caller off of hold, always thank them for holding.
   - Sometimes you may have other lines ringing too. Remember to write down the names of callers holding so you avoid asking who the caller is holding for more than once.
   - If the caller needs to speak to another person or department, transfer the caller directly to the desired person's extension rather than the operator. This will

save the caller having to explain his/her requests another time, and it will cut the number of times the caller needs to be transferred.

- When transferring a caller, tell them who you are transferring them to, and announce the caller to the person you are transferring them to.
- If the called party does not wish to take the call, return to the caller (Example – “He/she is out of the office, may I take a message or would you like his/her voicemail?")

5. **Taking Messages**
   - Be prepared with pen and message slip when you answer the phone.
   - When taking messages be sure to ask for:
     - Caller's name (asking the caller for correct spelling.)
     - Caller's phone number and/or extension (including area code)
     - If the caller is a student, ask for the Student ID# (if appropriate)

     and ask about the subject of the call.
   - Repeat the message to the caller.
   - Be sure to fill in the date, time, and your initials.
   - Place the message slip in the called party's inbox or in a conspicuous place in their office, such as their chair.
   - Don't forget that you can transfer them to voicemail instead of taking a paper message, but don't forget to ask, "Would you like me to transfer you to his/her voicemail?" Do not assume that the caller would rather go to voicemail. Always ask first.

Ending Conversations There are several ways that you can end a long phone call without making up a story or sounding rude:

-
  - Leave the conversation open, and let the other party end the conversation.
  - Promise to finish your discussion at another time.
  - End on an "up" note.
  - Tell the person how much you've enjoyed speaking with him/her.
  - Before hanging up, be sure that you have answered all the caller's questions
  - Always end with a pleasantry such as : "Have a nice day" or "It was nice speaking with you"

Практичне заняття №64

Тема лекції: «Працевлаштування. Розмова з роботодавцем. Запит по телефону»

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4. Handling Rude or Impatient Callers
5. Taking Messages

Література:

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.

2. https://lts.lehigh.edu/services/explanation/telephone-etiquette

3. https://www.managementstudyguide.com/telephone-etiquettes.htm

4. https://www.humanity.com/blog/the-5-most-important-rules-of-proper-telephone-etiquette.html

Зміст лекції

1. What are Telephone Etiquettes? General rules

Telephone is an important device with the help of which people separated by distance can easily interact and exchange their ideas. Got a brilliant idea and want to convey it to your friend staying out of the country, use the telephone. Telephone is one of the easiest and cheapest modes of communication.

Telephone etiquettes - An individual needs to follow a set of rules and regulations while interacting with the other person over the phone. These are often called as telephone etiquettes. It is important to follow the basic telephone etiquettes as our voice plays a very important role in creating an impression of our personality, education, family background as well as the nature of job we are engaged in. The person giving the information is called the sender and the second party is the recipient.

Let us now study the various telephone etiquettes. Please find below the various telephone etiquettes.

- Always remember your **voice has to be very pleasant** while interacting with the other person over the phone. Don't just start speaking, before starting the conversation use warm greetings like "good morning", "good evening" or "good noon" depending on the time.
- **Never call any person at odd hours** like early morning or late nights as the person will definitely be sleeping and will not be interested in talking to you.
- **In any official call, don't use words like" Any guess who I am?** "as the person on the other side might be occupied with something and can get disturbed. Always say "Is it Ted?", and do ask him, "Is it the good time to talk to you?" and then start communicating. If the person sounds busy always wait for the appropriate time.

- **Make sure your content is crisp and relevant**. Don't play with words, come to the point directly and convey the information in a convincing manner. First prepare your content thoroughly and then only pick up the receiver to start interacting.
- After dialing, always reconfirm whether the person on the other side is the desired person whom you want to interact with. Always ask "Am I speaking to Mike?" or "Is this Jenny?" before starting the conversation.
- Always carefully dial the numbers, never be in a rush or dial the numbers in dark as it would lead to a wrong call. If by mistake you have dialed a wrong number, don't just hang up, do say sorry and then keep the phone courteously.
- **Never put the second party on a very long holds**. Always keep the information handy and don't run for things in between any call as the listener is bound to get irritated.
- While interacting over the phone, don't chew anything or eat your food. First finish your food and then only dial the number. If you are reading, please leave the book aside, first concentrate what the other person wishes to convey and then continue with the book.
- After completing the conversation, don't just hang up. Reconfirm with the receiver whether he has downloaded the correct information or not and do end your conversation with pleasant words like "Take care", "nice speaking with you" and a warm bye. Never say Goodbye.
- Always speak each and every word clearly. The person on the other hand can't see your expressions so remember your tone should be apt to express your feelings in the correct form.
- **Don't take too long to pick up any call**. If you miss the call, make sure you give a call back as the other person might have an important message to convey. Avoid giving missed calls at work places as it irritates the other person.
- In professional talks, never keep the conversation too long as the other person might be busy. Always keep the content crisp and relevant and do come to the point after formal greetings.
- If you are not the correct person and the speaker needs to speak to your fellow worker always say "one moment please- I will call him in a minute". If the colleague is not in the office premises, always take a message on his behalf and don't forget to convey him when he is back.
- Decrease the volume of the television or turn off the speakers while speaking over the phone as noise acts as a hindrance to effective communication
- If there is any disturbance in the network, don't just keep speaking for the sake of it; try to call after sometime with a better line.

Remember all the above telephone etiquettes must be practiced for an effective and healthy telephonic discussion and smooth flow of information.

2. **Rules for answering calls**

- Try to answer the phone within three rings. Answering a phone too fast can catch the caller off guard and waiting too long can make the caller angry.
- Answer with a friendly greeting. (Example - "Good Afternoon, Lehigh University, Telecommunications, Lizanne speaking, how may I help you?").
- Smile - it shows, even through the phone lines; speak in a pleasant tone of voice - the caller will appreciate it.

- Ask the caller for their name, even if their name is not necessary for the call. This shows you have taken an interest in them.
- If the caller has reached a wrong number, be courteous. Sometimes a caller is transferred all over campus with a simple question and the caller gets frustrated. If possible, take the time to find out where they should be calling/to whom they should be speaking.
- Use the hold button when leaving a line so that the caller does not accidentally overhear conversations being held nearby.
- When you are out of the office or away from your desk for more than a few minutes, forward your phone to voicemail.

3. **Rules for making calls**
   - When you call someone and they answer the phone, do not say "Who am I speaking with?" without first identifying yourself: (Example - "This is Lizanne from Lehigh/Telecommunications. To whom am I speaking?")
   - Always know and state the purpose of the communication.
   - When you reach a wrong number, don't argue with the person who answered the call or keep them on the line. Say: "I'm sorry, I must have the wrong number. Please excuse the interruption." And then hang up.
   - If you told a person you would call at a certain time, call them as you promised. If you need to delay the conversation, call to postpone it, but do not make the other person wait around for your call.
   - If you don't leave a number/message for someone to call you back, don't become angry if they are not available when you call again.

4. **Handling Rude or Impatient Callers**
   - Stay calm. Try to remain diplomatic and polite. Getting angry will only make them angrier.
   - Always show willingness to resolve the problem or conflict.
   - Try to think like the caller. Remember, their problems and concerns are important.
   - If you are in a non-supervisory position: Offer to have your supervisor talk to the caller or call him/her back if the caller persists.
   - If you are supervisor: Be willing to handle irate callers. Speak slowly and calmly. Be firm with your answers, but understanding. Sometimes the irate caller just wants someone in a supervisory capacity to listen to their story even if you are unable to help them.
   - When putting a caller on hold, always ask permission. Examples: "Would you mind holding while I check?" or "Can you hold briefly while I see if Mr. Jones is available?" When taking a caller off of hold, always thank them for holding.
   - Sometimes you may have other lines ringing too. Remember to write down the names of callers holding so you avoid asking who the caller is holding for more than once.
   - If the caller needs to speak to another person or department, transfer the caller directly to the desired person's extension rather than the operator. This will

save the caller having to explain his/her requests another time, and it will cut the number of times the caller needs to be transferred.

- When transferring a caller, tell them who you are transferring them to, and announce the caller to the person you are transferring them to.
- If the called party does not wish to take the call, return to the caller (Example – “He/she is out of the office, may I take a message or would you like his/her voicemail?")

5. **Taking Messages**
   - Be prepared with pen and message slip when you answer the phone.
   - When taking messages be sure to ask for:
     - Caller's name (asking the caller for correct spelling.)
     - Caller's phone number and/or extension (including area code)
     - If the caller is a student, ask for the Student ID# (if appropriate)

     and ask about the subject of the call.
   - Repeat the message to the caller.
   - Be sure to fill in the date, time, and your initials.
   - Place the message slip in the called party's inbox or in a conspicuous place in their office, such as their chair.
   - Don't forget that you can transfer them to voicemail instead of taking a paper message, but don't forget to ask, "Would you like me to transfer you to his/her voicemail?" Do not assume that the caller would rather go to voicemail. Always ask first.

Ending Conversations There are several ways that you can end a long phone call without making up a story or sounding rude:

-
  - Leave the conversation open, and let the other party end the conversation.
  - Promise to finish your discussion at another time.
  - End on an "up" note.
  - Tell the person how much you've enjoyed speaking with him/her.
  - Before hanging up, be sure that you have answered all the caller's questions
  - Always end with a pleasantry such as : "Have a nice day" or "It was nice speaking with you"

Лекція Практичне заняття №64-65

Тема лекції: «Працевлаштування. Написання листа-запита про працевлаштування»

План лекції

1. Application Letter
2. What to Include in a Cover Letter
3. Why This Cover Letter Works

Література:

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.
2. https://www.jobscan.co/cover-letter-examples
3. https://www.pinterest.com/pin/490399846911264177/?lp=true
4. https://blog.hubspot.com/marketing/how-to-write-cover-letter-template

Зміст лекції

1. Application Letter

An application letter is a written document addressed to an employer by a job applicant, explaining why they're interested in and qualified for an open position. More commonly known as a cover letter, this document can come in the form of an email, MS Word document, or similar application template offered by the employer.

Seems fairly basic, right? Cover letters can hold different levels of importance to an employer depending on the industry you're in and the job you're applying for. If you do plan to write a cover letter, keep in mind there are certain qualities it should have that are not included in the definition above.

2. What to Include in a Cover Letter

So, what should you include? We'll let the 10 templates below this list do most of the talking. No matter which one you download, pay attention to the following elements -- all of which should shine through in the letter you send to your future manager.

Contact Information

Cover letters shouldn't just carry *your* contact information, but also that of the company to which you're applying. Contact info includes your phone number, email address, and any social media accounts you're willing to share and receive connections to.

Home addresses aren't required, but they can be a helpful reassurance to the employer that you already live nearby and would have no trouble coming into the office.

Avoid offering phone numbers, email addresses, or actual addresses that belong to your current employer. Using your personal Gmail address over your work email, for example, ensures your correspondence with recruiters remains separate from all of your current work communication.

A Personal Address Line

For as often as you see "to whom it may concern" at the top of cover letters today, do your best to avoid writing this exhausted line.

Address lines that specify a person or company grab your reader's attention much more quickly, and show the employer that you've taken the time to tailor your application letter to them. Don't have the name of the hiring manager? *"Employers at [company name]"* will do just fine.

A Hook

A "hook" is a clever introduction that "hooks" your reader into wanting to learn more. Think about yourself as a job candidate -- what makes you unique? What about your career might a recruiter be intrigued by that you can package into an interesting first sentence?

Why You're Qualified

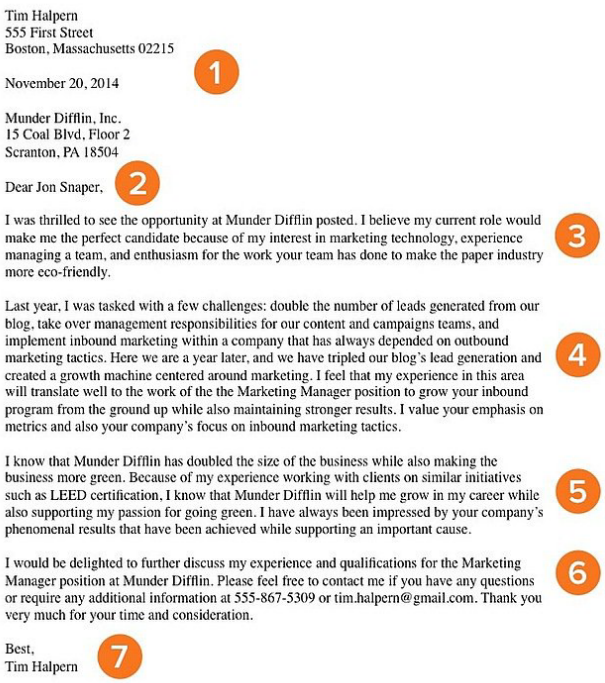
It's a no-brainer that you should summarize your professional experience in your cover letter. However, today's best applications describe *why* this experience qualifies the applicant for the job they're applying for. For example, don't just state that you spent three years writing for a company blog. Explain that this type of work lends itself to managing your new potential employer's content calendar every week.

General Knowledge of the Business

Grammatical errors could mean your application is thrown in the trash, but that's not the only thing that could get your letter tossed aside. Using a generic "one-size-fits-all" cover letter -- especially if you forget to change the name of the company -- will also hurt your chances of landing an interview.

So, if you take the time to write a cover letter, take the time to comment on the business itself. Why are you applying to *this* company? What about their business stuck out to you as a professional?

Now, let's take a look at an example cover letter template, what makes it effective, along with nine more cover letters you can download or draw inspiration from.



Tim Halpern
555 First Street
Boston, Massachusetts 02215

1

November 20, 2014

Munder Difflin, Inc.
15 Coal Blvd, Floor 2
Scranton, PA 18504

Dear Jon Snaper, 2

I was thrilled to see the opportunity at Munder Difflin posted. I believe my current role would make me the perfect candidate because of my interest in marketing technology, experience managing a team, and enthusiasm for the work your team has done to make the paper industry more eco-friendly. 3

Last year, I was tasked with a few challenges: double the number of leads generated from our blog, take over management responsibilities for our content and campaigns teams, and implement inbound marketing within a company that has always depended on outbound marketing tactics. Here we are a year later, and we have tripled our blog's lead generation and created a growth machine centered around marketing. I feel that my experience in this area will translate well to the work of the the Marketing Manager position to grow your inbound program from the ground up while also maintaining stronger results. I value your emphasis on metrics and also your company's focus on inbound marketing tactics. 4

I know that Munder Difflin has doubled the size of the business while also making the business more green. Because of my experience working with clients on similar initiatives such as LEED certification, I know that Munder Difflin will help me grow in my career while also supporting my passion for going green. I have always been impressed by your company's phenomenal results that have been achieved while supporting an important cause. 5

I would be delighted to further discuss my experience and qualifications for the Marketing Manager position at Munder Difflin. Please feel free to contact me if you have any questions or require any additional information at 555-867-5309 or tim.halpern@gmail.com. Thank you very much for your time and consideration. 6

Best,
Tim Halpern 7

The example above is a basic (but great) cover letter. The numbered sections are explained in more detail below.

3. Why This Cover Letter Works

1. Header

The level of formality your header has will depend on the company to which you apply. If you're applying to a formal business, it's important to use a formal header to open your cover letter, like in the sample above. Put your address, the date, and the company's address. But if you're applying to a company that isn't as formal, you don't need to include yours and the company's addresses. You can still include the date, though.

2. Greeting

Using "To Whom It May Concern" is okay, but you may want to take the time to research the name of the recruiter or hiring manager online. If you do your research and aren't confident you found the right name, then you should definitely use the generic greeting -- but if you *are* sure, then it shows you put in the effort to find their name and it will catch the recruiter's eye.

If you have the recruiter's name, do you greet them by their full name, or by their courtesy title (i.e. Mr., Ms., or Mrs.)? Similar to the header, it depends on the company's level of formality. If you're applying to a corporate business, you may want to consider using "Mr. Snaper" instead of "Jon Snaper." If you're applying to a start-up or a business with a more casual culture, you can use "Jon Snaper," as shown in the example.

3. Introduction

Your opening paragraph should, in 1-3 sentences, state why you're excited to apply and what makes you the perfect candidate. Get right to the point, and don't worry about explaining where you found the posting or who you know at the company. This isn't a place to go into detail about why you're a great candidate -- that's for the second paragraph. Here, simply list a few key reasons in one sentence to set up the rest of your letter. Keep in mind that the recruiter may cross-reference your cover letter with your resume, so make sure the two sync up.

4. Paragraph 2: Why You're a Great Fit for the Job

Next, sell yourself and your experience by choosing one or two concrete examples that show why you're a great fit for the position. What did you do at a previous company that gave you relevant experience? Which projects have you worked on that would benefit the new company? How will your prior experience help this company grow? Stay humble in your explanation of credentials while still showing that you would be an asset to the team. Use this paragraph to show you're genuinely excited and interested in the position.

5. Third Paragraph: Why the Company Is a Great Fit for You

While it's certainly important you're a good fit for the job, it's also important that the company is a good fit for you. "A cover letter typically describes why you're great for a company -- but how will *you* benefit from getting hired?" asks Emily MacIntyre, a Team Development Manager at HubSpot. "We want to know why our company appeals to you, and how it will be a mutually beneficial working relationship."

In the third paragraph, show you're serious about growing and developing your career at this new company. What impresses and excites you about the company? Is there something that you feel strongly about that aligns with the company's goals? For example, the candidate in the sample letter used this space to show his personal commitment to environmental causes aligns with the company's green initiatives.

6. Strong Closer and Signature

Don't get lazy in the final few sentences of your cover letter -- it's important to finish strong. Be straightforward about your interest and enthusiasm about the new position, and tell them you're available to talk about the opportunity at any time. Be sure to include your phone number and email address. At this point, the ball is (rightly) in the recruiter's court to decide how to follow up.

Last but certainly not least, thank them for their time and consideration. Use a formal sign-off like "Best," "All the best," or "Sincerely," and finish by typing out your full name. You don't need to sign it with a pen.

Template #2: Data-Driven Cover Letter

YOUR NAME HERE
Street Address
City, State, Zip Code
Email | Phone Number

DATE

Hiring Manager Name
Company Name
Street Address
City, State, Zip Code

Dear [hiring manager name here],

My name is ____ and I am a ____ professional currently working as a ____ at ____. I am reaching out to express my interest in the ____ position at ____.

I currently work as a [job title] at a [industry] company based in [location]. In this role, I have played an instrumental part in [action #1], [action #2], and [action #3]. With a commitment to solving for [business need], I've developed a strategy that has helped the company achieve:

- [statistic]
- [statistic]
- [statistic]

After reviewing the job description for the [job title] position at your company, I am eager to apply this experience to help your [department] team uncover and execute on [business need #1], [business need #2], and [business need #3]. I feel confident that my [area of expertise] skills and knowledge of the [industry] space positions me as a

Attached is my resume, which further details my qualifications. Thank you for taking the time to review my application, and I look forward to speaking with you about this exciting opportunity.

Best Regards,
[your name here]

When applying to a data-driven position, it might be tempting to inject your cover letter with, well, the *data* to describe what you've done for other employers. But in an application letter -- particularly for the marketing industry -- how you convey this data is just as important as the data itself.

The cover letter template above, which we created here at HubSpot, can help you present the data that's most important to you as a candidate such that it'll matter to your future employer.

Notice the three bullet points near the center of the letter above, preceded by the statement: *"... I've developed a strategy that has helped the company achieve ..."* This setup is important, because while you can add as many statistics as you want to this template, your data points should describe how your current/former business benefited from your work, rather than how you, yourself, benefited.

Dear David:

I am writing in response to the opening for xxxx, which I believe may report to you.

I can offer you seven years of experience managing communications for top-tier xxxx firms, excellent project-management skills, and a great eye for detail, all of which should make me an ideal candidate for this opening.

I have attached my résumé for your review and would welcome the chance to speak with you sometime.

Best regards,

Xxxx Xxxx

Harvard Business Review contributor David Silverman hailed the above cover letter example as "The Best Cover Letter I Ever Received." For context, Silverman believes there are only a handful of times when writing a cover letter is actually necessary:

1. When you know the name of the hiring manager.
2. When you know something about what the job requires.
3. When you've been referred to the job personally.

Under those three circumstances, a straight-to-the-point cover letter like the one above could be your best bet. Because it's so concise, however, make a point to add your own letterhead above the message itself. It might be easy for a recruiter to sift through a short and sweet cover letter like the one above, but it's just as easy for it to get lost in the shuffle of their application list without a unique design or format.

YOUR NAME HERE
Street Address
City, State, Zip Code
Email | Phone Number

DATE

Hiring Manager Name
Company Name
Street Address
City, State, Zip Code

Dear [hiring manager name here],

My name is [your name]. [Referral name], [Referral name's job title], suggested that I reach out regarding the [job title] position that [company name] is looking to fill. [Referral name] flagged this opportunity for me upon realizing that my [industry] experience aligns seamlessly with the qualifications for the opportunity at hand.

After working as a [current job title] for a [industry] company for [number] years, I am ready to transition into a position that presents an exciting new set of challenges. While my time at [current company] has led me to career milestones such as [milestone/achievement #1], [milestone/achievement #2], and [milestone/achievement #3], I'm excited by [company name]'s need for [business need #1] and [business need #2].

I feel confident that my ability to [skill #1] and [skill #2] would enable me to ramp up quickly in this position so that I could begin making an impact as soon as possible.

For more information regarding my qualifications, see my attached resume. I would greatly appreciate an opportunity to discuss this position in more detail. Thank you for considering my application.

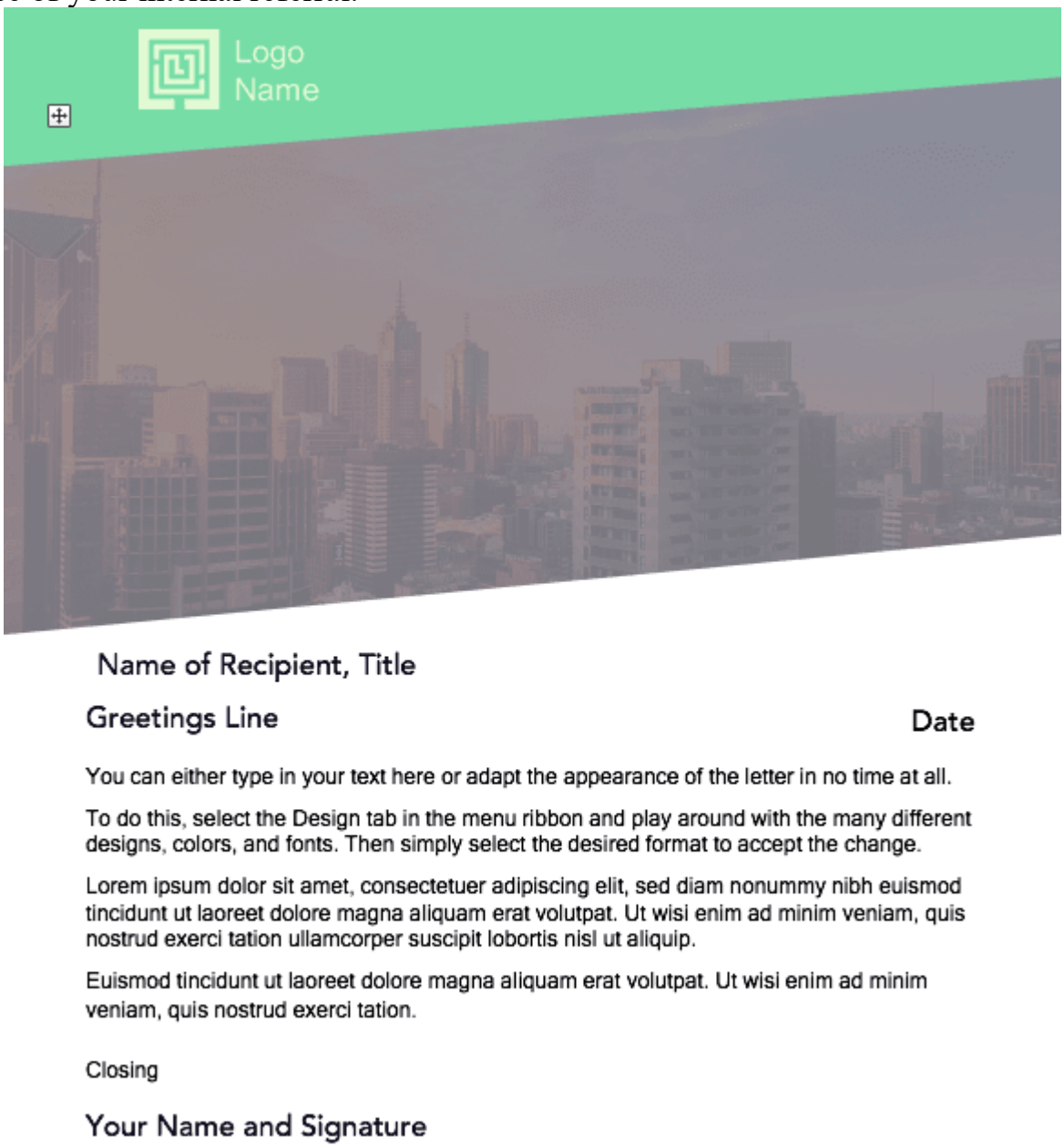
Sincerely,
[your name here]

Just because a friend or colleague recommended you for a job doesn't mean the company is all set to hire you. Therefore, the cover letter template above is written specifically for referrals. We made this one here at HubSpot. Download it here (it comes with **four other cover letter templates**, too).

As you can see in the picture above, the first paragraph of the cover letter is dedicated entirely to acknowledging the circumstances of your applying: You know someone who works there -- no harm in that. But there *might* be harm in not mentioning it to the hiring manager. Telling the reader about your connection at the company shows you're aware and confident of the actions you take to get the opportunities you're interested it.

Ultimately, it's better than the recruiter hearing about your employee connection from somebody else.

As for the rest of the cover letter, treat your message the same way you would if you had applied with no connection from within. Your skills and successes are no less important because of your internal referral.



The cover letter template above was designed by Microsoft Office, and as comprehensive as it looks, it's completely free to download and modify.

As it looks right now, this cover letter contains about half photo, half text. Feel free to shrink (and change) the image to give yourself more room to tell your story. Of course, a nice washed-out image that expresses who you are can be part of that story ...

Лекція Практичне заняття №66-67

Тема лекції: «Працевлаштування. Написання рекомендаційного листа»

План лекції

1.Why Are Recommendation Letters Important?
2.What Makes a Recommendation Letter Stand Out? 3 Key Features
3. The "Who, Why, Where, When, What, and How" of Recommendation Writing

Література:

1. Tres O'Dell, Вирджиния Эванс, Дженни Дули. Career Paths: Electrician: Student's Book 1. – Publishing, 2012. – 40 с.
2. https://blog.prepscholar.com/9-letter-of-recommendation-samples
3. https://resumegenius.com/letter-of-recommendation
4. https://www.thebalancecareers.com/letter-of-recommendation-tips-and-examples-2062979
5. https://www.thebalancecareers.com/positive-recommendation-letter-2062916

Зміст лекції

Anyone who's applied for a job knows how important recommendation letters can be to getting hired. While you've probably asked for a reference letter in the past, you may be less familiar with writing one. If someone asks you for a reference, how can you produce a great letter that will help your employee, colleague, or friend get hired?

To help you through the writing process, we're providing **nine samples of effective letters of recommendation** (scroll down to skip to the samples!)**.** By reading through these examples, you'll gain a clear understanding of how to structure your own letters.

Before getting to the free recommendation letter samples, let's briefly review the role that reference letters play in the hiring process. Why are they important, and what makes some stand out over others?

1.Why Are Recommendation Letters Important?

Many employers request recommendation letters to help them decide who to hire or internally promote. Throughout the hiring process, the applicant strives to present herself in the best light. Beyond the interview and resume, hiring managers look to recommendation letters to **confirm the candidate's qualifications and to gain insight from an outside party.**

The hiring manager wants to know what experiences the candidate will bring to the new role, how she'll contribute to the company or organization, and how she'll behave in the day-to-day. Recommendation letters can **point to a candidate's future performance by talking about her past achievements.**

Reference letters can also shed light on what it's like to manage, work with, or, in the case of a character reference, be friends with the person under consideration. They **complement the candidate's story** and suggest what she'll bring to the table in her next job.

If you get asked to write a letter for someone, it's safe to assume you want to do a good job. Helping someone get hired is not just a satisfying good deed, but it's also good professional karma! So how can you turn those good intentions into a stand-out employee letter of recommendation?

Each letter will, of course, be different, but **good letters share certain key features.** Read on to learn about three important characteristics of strong reference letters.

Your recommendation letter's not the time to be cagey about your identity! The hiring manager wants to know who you are and why you're qualified to recommend the applicant.

2.What Makes a Recommendation Letter Stand Out? 3 Key Features

Strong letters give positive descriptions of a candidate's skills in a concise and powerful way. Beyond using language that's clear and error-free, what elements should your recommendation letter include to be effective?

As you write your letter, make sure it does the following:

#1: Explains Why You're Qualified to Recommend the Candidate

In order to hold weight, a recommendation letter should **come from a reputable source.** If an employer wants a professional reference, then the writer of that letter probably worked with the candidate in a supervisory capacity. Some employers will also be interested in letters from a colleague or, occasionally, a friend, neighbor, or family member. Most letters, though, will be written by a supervisor, manager, or boss of some sort.

In the first paragraph, you should **explain who you are and how you know the candidate.** How long did you work with her and in what capacity? By explaining your relationship, you show that you're qualified to give an honest assessment.

If someone who feels like a relative stranger asks you to write a letter, you **might consider declining or recommending someone else to write it.** If you didn't get to know

the candidate's work performance or only did so in a way completely unrelated to the new position, then you might not be able to provide a helpful letter of recommendation from employer to employee.

The best letters are written by people who can speak to the candidate's skills and accomplishments. Make sure to **state clearly in the beginning of your letter who you are** and why your opinion matters.

#2: Customized to the New Position

While you should speak to the candidate's accomplishments in her past role, you should also **show why she'd make a good fit in the next one.** Even if the candidate's making a career change, you can explain why she'll be able to do well in the new industry.

Here's where open **communication with the applicant** is important. She should share the job description so you have a clear understanding of the position's requirements. As the writer, you're not expected to do much research on the new job. The candidate should provide you with everything you need to know to customize your letter.

By drawing on this information, you can **express confidence that the candidate will succeed in the new role.** Then when the hiring manager reads your letter, she'll feel reassured that the candidate would make a good fit.

#3: Uses Specific Examples and Anecdotes

Finally, and perhaps most importantly, your letter should **provide specific examples about the candidate.** Don't just list adjectives like, "friendly, intelligent, and hard-working"; instead, present circumstances in which the candidate *demonstrated* those qualities. To borrow a favorite phrase of English teachers, "show, don't just tell."

Not only will examples point to the value the candidate brought to your organization or company, but they'll also **paint a picture of how she works in day-to-day operations.** Using two to three specific anecdotes in your letter will boost its level of persuasiveness. It will also sidestep a common rec letter trap: becoming a generic list of cliches.

Just as you should only write a recommendation letter if you feel qualified to assess the candidate, you should also **only write it if you can provide a great one.** While you don't want to go over the top and sound insincere, your letter should be a strongly positive endorsement.

3. The "Who, Why, Where, When, What, and How" of Recommendation Writing

Effective recommendation letters contain the "Who, Why, Where, When, What, and How" that you may familiar with from journalism. Modified for business correspondence, this means you should explain:

- **Who** you are writing for;
- **Why** you are willing to write on the person's behalf;
- **Where** and **When** you worked with the person you're recommending;
- **What** is so special about the person (his or her unique strengths); and
- **How** he or she demonstrated these special qualities to you.

The most powerful letters provide specific examples and descriptions of the talents and contributions of the person you're recommending. Like any good piece of writing, these letters should "show" how an individual shines rather than just stating it.

As you sit down to write your letter, think of **what** has impressed you about the person you are recommending. Try to come up with at least three unique strengths. Then, come up with specific examples of **how** the person displayed these characteristics.

Is he, for example, reliable? If so, "how" has he demonstrated this – perfect attendance? Or, if she is detail-oriented, did she show this through her consistently error-free monthly reports?

Writing your letter will be easier once you've generated examples of each of the individual's strengths.