1. KPI. Our university

The National Technical University of Kyiv (Kyiv Polytechnic Institute) is one of the oldest and biggest higher educational institutions in Ukraine. At the time of its foundation, it was a leading technical school in Eastern Europe.

Kyiv Polytechnic Institute was founded on August 31, 1898 and its first rector was Professor I.Kirpichev. At that time, it had only four faculties (mechanical, chemical, agricultural, civil engineering) with 360 students enrolled.

Kiev Polytechnic, in spite of being a hundred year old establishment, is keeping abreast with the changing times. In recent years, a number of new faculties have been setup: aviation and space systems, management and industrial marketing, linguistics, law, sociology. The introduction of liberal arts faculties makes it possible for students to receive two degrees within the period of studies.

Now KPI is one of the biggest universities of its kind in Europe.

Its students enrolment is about 30 thousand people. 2,000 full and associate professors provide a high-quality tuition.

From the very outset KPI operated not only as a students training institution but as a research centre as well, turning out scientists and researchers who played a prominent role in the development of science and technology in Ukraine. Among the graduates of KPI we can find such prominent persons as academician Y.Paton, who made an important contribution to the theory and practice of electric welding, S.Tymoshenko, one of the world's leading scientists in the studies of resistance of materials, S. Korolyev, the designer and promoter of rockets and artificial earth satellites, M.Konovalov, a well-known chemist,.

Sports activities are flourishing at KPI as well. Cultural life at KPI is not lagging behind either with numerous cultural events involving hundreds of students. KPI maintains close contacts with research and industrial centres in order to provide its students with good training grounds and its graduates with opportunities for finding good jobs.

The KPI graduates now as well as many years ago feel proud to have studied at the Polytech. They are as always in the vanguard of the technological progress in Ukraine.

2. Ukraine and its capital

Ukraine is a country in Eastern Europe. It has an area of six hundred thousand sq. km, making it the largest country entirely within Europe.

The Ukrainian landscape consists mostly of fertile plains (or steppes) and plateaus, crossed by rivers such as the Dnipro, Seversky Donets, Dniester and the Southern Buh.

The country's only mountains are the Carpathian Mountains in the west, of which the highest is Mountain Hoverla at 2,061 metres, and the Crimean Mountains on Crimea.

Ukraine is a Unitarian republic, which is composed of the Autonomous Republic of Crimea, 24 oblasts, rayon's, cities, rayons in cities, settlements and villages. The capital of Ukraine is Kyiv.

The state language in Ukraine is Ukrainian. The state symbols of Ukraine are the State Flag, the State Emblem and the State Anthem of Ukraine.

Ukraine is a republic under a semi-presidential system with separate legislative, executive, and judicial branches. The country is home to 46 million people, 78 percent of whom are ethnic Ukrainians, with sizable minorities of Russians (17%), Belarusians and Romanians. Ukrainian is the official language of Ukraine but Russian is also widely spoken.

Kyiv is the capital and the largest city of Ukraine, located in the north central part of the country on the Dnipro River. The population of Kiev consists almost 3 million making it at least eighth largest city in Europe.

Kiev is an important industrial, scientific, educational, and cultural centre of Eastern Europe. It is home to many high-tech industries, higher education institutions and world-famous historical landmarks.

During its history, Kiev, one of the oldest cities in Eastern Europe, passed through several stages of great prominence and relative obscurity. The city probably existed as a commercial centre as early as the 5th century.

Following the collapse of the Soviet Union and Ukrainian independence in 1991 and during the country's transformation to a market economy and democracy, Kiev has continued to be Ukraine's largest and richest city.

The centre of Kiev (Independence Square and Khreschatyk Street) becomes a large outdoor party place at night for having a good time in nearby restaurants, clubs and outdoor cafes.

Kiev's most famous historical architecture complexes are the St. Sophia Cathedral and the Kiev Pechersk Lavra, which are recognized by UNESCO as a World Heritage Site.

3. USA and its capital

The United States of America stretches from the Atlantic Ocean on the east to the American Pacific islands on the west covering the territory of 9,5 million sq.km.

The United States is generally divided into four regions: the Northeast, the Middle West, the South, and the West. The population of the United States is more than 270 million people.

The major cities include New York, Los Angeles, Chicago, Philadelphia, Detroit, San Francisco, Washington, Dallas, Houston, Boston, and Baltimore.

The country also holds a leading position in the world's industrial production. In each branch of industry there are a number of big corporations concentrating most of the production, e.g., in the automobile industry: General Motors, Ford, Chrysler; in petroleum: Mobil Oil, Exxon; in electrical and electronic engineering: General Electric, IBM; in chemicals: Dow Chemical, Kodak, Polaroid.

The Government of the U.S.A. is based on the Constitution, a document written in 1787.

The federal government of the United States is divided into three main branches: the legislative, which represented by the Congress with its parts the Senate and the House of Representatives, the executive, which includes the President, Vice President and the President's cabinet, and the judicial, which consists of the Supreme Court of the United States and the system of federal courts.

The United States of America is a Federal Union of fifty states plus the District of Columbia.

Washington, the capital of the United States of America, is situated on the Potomac River in the District of Columbia. It is not the largest city in the USA with only 640,000 inhabitants.

The city's main output are laws and government decisions. Besides, Washington, named by the first President of the USA, George Washington, has the White House, which is the residence of the President and the Congress of the United States.

According to the French conception of city, Washington has long wide avenues, gardens, beautiful parks and no skyscrapers at all. It also contains the Capitol, the seat of the American Congress, the Supreme Court, the Pentagon, the offices of the Defense Department.

Washington is also a place of culture. It has several universities, the National Gallery of Art, the largest complex of museums with its Air and Space Museum and the National museum of American History.

4. Great Britain and its capital

The United Kingdom of Great Britain and Northern Ireland, commonly known as the United Kingdom (UK) or Britain, is a sovereign state in Europe with its territory of about 244 square kilometres and its population of over 65 million.

It consists of four parts: England, Wales, Scotland and Northern Ireland with their capitals, Cardiff, Edinburgh and Belfast, respectively.

The major cities are London, Birmingham, Glasgow, Liverpool, Manchester, Edinburgh, and Cardiff.

The UK is considered to have a high-income economy and is categorised as very high in the Human Development Index.

It was the world's first industrialised country and the world's foremost power during the 19th and early 20th centuries. The UK remains a great power with considerable economic, cultural, military, scientific, and political influence internationally.

It has been a member state of the United Nations Security Council, the European Union, the Council of Europe, the G7, NATO and the World Trade Organization.

It is a constitutional monarchy with a parliamentary system of governance. The current monarch—since 1952—is Queen Elizabeth II. The Queen is formally the head of state. But in practice it is ruled by the elected government with a Prime Minister at the head.

The capital and most populous city of England, United Kingdom and the European Union is London, an important global city and financial centre with an urban population of 8,000,000.

London is a world cultural capital. It is the world's most-visited city as measured by international arrivals and has the world's largest city airport system measured by passenger traffic. London's 43 universities form the largest concentration of higher education institutes in Europe. In 2012, London became the first city to host the modern Summer Olympic Games three times.

London contains four World Heritage Sites: the Tower of London; Kew Gardens; the site comprising the Palace of Westminster, Westminster Abbey, and St Margaret's Church; and the historic settlement of Greenwich. Other famous landmarks include Buckingham Palace, the London Eye, Piccadilly Circus, St Paul's Cathedral, Tower Bridge, Trafalgar Square, and The Shard.

London is home to numerous museums, galleries, libraries, sporting events and other cultural institutions, including the British Museum, National Gallery, Tate Modern, British Library and 40 West End theatres. The London Underground is the oldest underground railway network in the world.

5. Science in Ukraine

Scientists of Ukraine make a valuable contribution in our science. The development of Ukraine science has its beginning since the 18th century, when the Kyiv Mohyla Academy became a noted research centre.

Science is a major factor allowing Ukraine to be ranked among the world's advanced countries in the twenty-first century. By the beginning of the year 2000, Ukraine's scientific potential of Ukraine comprised 1,500 scientific institutions and organizations, 120,000 persons who are directly engaged in research and engineering activities. These include more than 4,000 doctors and over 20,000 candidates of sciences.

Six state academies are leaders in Ukrainian science. The Ministry of Education and Science of Ukraine is responsible for the governmental management of scientific and scholarly activities.

A great page in Ukraine’s history was the Ukrainian Academy of Sciences. Its founder was a very talented man with the world – known name- Volodymyr Vernadsky. The group of famous people made a valuable contribution into Ukraine’s science from its first steps. They were noted historians Antonovych, Hrushevsky, a mathematician Boholiubov, scientists in medicine Filatov, Yanovsky, Bohomolets and others.

Among the graduates of KPI were Academician Y. Paton who made an important contribution to the theory and practice of electric welding, S. Korolyev, the designer and promoter of rockets and artificial earth satellites, M. Konovalov, a well-known chemist,.

Ukrainian scientists and scholars can boast major achievements, such as the artificial nuclear reaction to split the lithium nucleus; production of heavy water; a procedure for automatically welding lank bodies; the Europe's first computer; new areas pioneered in metallurgy, development of unique rockets and spacecraft, etc.

Nowadays Ukraine is proud to comply with many trends directly related to the manufacture of the high tech science-intensive products increasingly demanded by foreign scientific institutions and industrial firms.

During the years of independence, a basic advance has been made by Ukraine in the social sciences and humanities. This contributed much to the nation's rethinking in the historical and cultural development and today's position of Ukraine in the international and European civilizing process.

6. Constitution of Ukraine

The Verkhovna Rada of Ukraine adopted the Constitution - the fundamental Law on June 28, 1996. The day of its adoption is a state holiday - the Day of the Constitution of Ukraine. The Constitution establishes the country's political system, assures rights, freedoms and duties of citizens, and is that basis for its laws. The Constitution of Ukraine consists of 15 chapters, 161 articles.

It asserts that Ukraine is a sovereign and independent, democratic, social, legal state.

The Constitution defines the territorial structure of Ukraine. Ukraine is a Unitarian republic, which is composed of the Autonomous Republic of Crimea, 24 oblasts, rayon's, cities, rayons in cities, settlements and villages. The capital of Ukraine is Kyiv.

The state language in Ukraine is Ukrainian. The state symbols of Ukraine are the State Flag, the State Emblem and the State Anthem of Ukraine.

The Constitution states that every person has the right to the free development of his/her personality, and has obligations before society where free and full development of the personality is guaranteed. Citizens have equal Constitutional rights and freedoms and are equal before the law. There are no privileges or restrictions based upon characteristics of person.

The Constitution defines the structure of the national government and specifies its powers and duties. Under the Constitution, the powers of the government are divided into the three branches - the legislative which consists of the Verkhovna Rada, the executive, headed by the President, and the judicial, which is led by the Supreme Court.

The parliament - the Verkhovna Rada – consists of 450 people’s deputies who are elected for a term of four years. The Verkhovna Rada's main function is making laws, adopting the State Budget for the period from January 1 to December 31, and controlling the execution of it.

The President of Ukraine is the head of the state and speaks on behalf of it. He is elected directly by the voters for a term of five years with no more than two full terms.

The highest body of the executive power is the Cabinet of Ministers. It is responsible to the President and is accountable to the Verkhovna Rada.

7. Science in Great Britain

Science and technology in the United Kingdom has a long history, producing many important figures and developments in the field.

England and Scotland were leading centres of the Scientific Revolution from the 17th century and the United Kingdom led the Industrial Revolution from the 18th century, and has continued to produce scientists and engineers credited with important advances.

Scientific research and development remains important in British universities, with many establishing science parks to facilitate production and co-operation with industry. Between 2004 and 2008 the UK produced 7% of the world's scientific researches, the third-highest in the world after the United States and China.

Major theorists from the UK include Isaac Newton whose laws of motion and illumination of gravity have been seen as a keystone of modern science, James Maxwell with the unification of electromagnetism, Charles Darwin whose theory of evolution by natural selection was fundamental to the development of modern biology, made an important contribution to our world-view.

Major scientific discoveries include hydrogen by Henry Cavendish, penicillin by Alexander Fleming, and the structure of DNA, by Francis Crick and others have changed our casual life and increased life expectancy.

Michael Faraday, who invented the electric motor, largely made electricity viable for use in technology.

Such invention as the first commercial electrical telegraph, the first practical telephone, patented by Alexander Bell, the world's first working television system, and colour television, the first digital computer and creating the World Wide Web by Tim Berners-Lee increased the speed of transmitting information all over the world and hitched the world to the information revolution.

Nowadays scientists from the UK continue to play a major role in the development of science and technology and major technological sectors include the aerospace, motor and pharmaceutical industries.

The latest invention such as the theoretical breakthrough of the Higgs mechanism to explain why some particles have mass by Peter Higgs and theories in cosmology, quantum gravity and black holes by Stephen Hawking can change our future life on the Earth and in our Galaxy.

8. Higher education in Great Britain

After finishing secondary school or college, you can apply to a university, polytechnic, college of education or you can continue to study in a college of further education.

The academic year in Britain's universities, Polytechnics, Colleges of education is divided into 3 terms.

There are 46 universities in Britain. The oldest and best-known universities are located in Oxford, Cambridge, London, Manchester, Liverpool, Edinburgh, Cardiff and Birmingham.

Good A-level results in at least two subjects are necessary to get a place at a university. And then universities choose their students after interviews.

English universities greatly differ from each other in date of foundation, size, history, tradition, general organization, methods of tuition and way of student life.

After three years of study at university graduate will leave with the Degree of Bachelor of Arts, Science, Engineering, Medicine, etc. Some courses, such as languages and medicine, may be one or two years longer. Later he/she may continue to take Master's Degree and then a Doctor's Degree.

The two intellectual eyes of Britain – Oxford & Cambridge Universities – date from the 12 & 13 centuries. They are known for all over the world and are the oldest and most prestigious universities in Britain. Only education elite go to Oxford and Cambridge.

During the nineteenth, the government set up 30 Polytechnics. The Polytechnics, like the universities, offer first and higher degrees. Colleges of Education provide two-year courses in teacher education or sometimes three years if the graduate specializes in some Particular subjects.

After the leaving school people have the possibility to go to a further education college where they can follow a course in typing, engineering, town planning, cooking, or hairdressing, full-time or part-time. Further education colleges have strong ties with commerce and industry.

9. My department & My future speciality

Computer engineers are concerned with analyzing and solving computer-oriented problems. Computer engineers understand both the hardware and the software of computers. This enables them to choose the solution that is best, not just the one they know. The knowledge of both the "body" and the "mind" of a computer helps computer engineers work at the microscopic level and on a large, system-wide scale.

Department of Computing Technique of Faculty of Informatics and Computing Technique of KPI was established in 1960. This is the first and leading department in Ukraine, which trains specialists in the aspect of software and hardware of computers, parallel and distributed systems and networks.

Department of Computer Engineering trains bachelors in "Computer systems and networks".

Highly qualified teachers and researchers, including 7 professors and 19 associate professors, make training and research work. For large part of the disciplines, the teachers of the department published guidelines and manuals.

Our students receive a fundamental knowledge of programming, mathematics, telecommunications theory and means, computer and microprocessor technique, theory and control systems and design.

Graduates work as specialists in computerized control systems, data processing and programming, data protection, development and use of microcontrollers for various purposes, as administrators of computer networks, project managers, engineers, and field engineers, testers of complex electronic, computer and automated equipment, as well as engineers-researchers.

As for advantages of our profession is its universality: specialist can work in any area of IT, of course with previous learning of necessary knowledge of it. On the other hand, computer engineering graduates typically have some of the highest starting salaries in engineering.

To conclude, computer engineers continually push the capability and applicability of computers in every industry and every facet of modern life.