

Tashkent University of Information Technologies  
Telecommunication Technologies Faculty



TASHKENT UNIVERSITY  
OF INFORMATION  
TECHNOLOGIES

# Independent work

## Fall Semester Module 1

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## Our University

**Tashkent University of Information Technology** (Ташкентский Университет Информационных Технологий, Tashkent University of Information Technology, often abbreviated TATU, TUIT), in Tashkent, Uzbekistan, is the largest university in Uzbekistan. The Tashkent University of Information Technology was founded as the Tashkent Electro Technical Institute of Communication in 1955. The aim of this institute was training communication engineers for Central Asia and Kazakhstan regions.

### History

At the beginning, the institute was situated on the territory of the Tashkent Communication Polytechnic founded in 1930 (nowadays the Tashkent Vocational College of Communication)



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and was functioning there until the beginning of the academic year 1961-62. The duties of the head (rector) of the institute were temporarily entrusted to N. B. Matskevich, chief of the Technical School of Communication. In the first academic year, 150 students were admitted to the University only on one specialization: telephone and telegraph communication. So the telephone and telegraph communication (TTC) faculty and four united departments were established. The first graduation of engineers took place in 1960.

In the academic year of 1957-58 the radio and broadcasting faculty (RBF) was opened and the institute began training radio and broadcasting engineers. In 1957 general-technical departments were established to train students in such specializations as telephony, telegraphy, communication lines, telecommunication, and power supply of communication enterprises. Since 1960 such departments as theoretical fundamentals of radio engineering; radio receivers; radio transmitters; broadcasting and television and some others were established.

Since the academic year of 1964-65 on the base of TTC faculty the institute began to train students in two specializations: automatic telecommunication and multi-channel telecommunication. The TTC faculty was renamed the Automatic and Multi-Channel Telecommunication faculty (AMCTCF). In academic year 1969-70 two independent faculties — Automatic Telecommunication (ATC) and Multi-Channel Telecommunication (MCTC) — were established. Since academic year 1964-65 some existing departments were reorganized or new ones established: the theory of linear electric network; the theory of signal transmission and the theory of nonlinear electric network; technical electrodynamics and antenna-feeder devices; measurements in communication engineering; automatic telecommunication; multi-channel telecommunication; transmission of discrete messages and telegraphy, etc.

In 1957, the institute opened night and correspondence departments with the following specializations: telephone and telegraph communication; radio and broadcasting. Since 1968 the institute has been paying particular attention to training working students — they introduced a new position of pro-rector for the night and correspondence departments.

Towards the end of the 1960s, the admittance of students to the daytime department was 400-450 persons; to the night and correspondence departments was 300 persons. Toward the second half of the

1970s, the number of daytime students came to 2000-2500 persons and night and correspondence students came to about 2000.

Since the end of the 1950s, some special departments began scientific researches on the basis of economic contracts. For example, the communication lines department made research to determine the specific electro-conductivity of the ground in Central Asia, the department of theoretical fundamentals of radio engineering investigated magnetostrictive sifters. The first research laboratories with independent staff of research officers were established at that time.

In the 1970s the institute reached the level of training engineers with education quality, which wasn't inferior to other graduates of the same institutes established earlier. The institute became one of the prestigious educational institutions of the Republic with rather big scientific potential and a large number of lecturers with academic status and degrees. At that time the institute began to carry out big state budget and contract researches on developing new means of communication and new ways of signal transmitting, receiving and handling. At the same time the institute researched other adjacent spheres of national economy.

In 1991 the university opened a post-graduate course on two specialties and a special academic council on defending Ph.D. theses started. Nowadays this post-graduate course prepares highly qualified specialists in five professions.

Since 1993 a special military faculty has been functioning at the university. This faculty prepares communication officers mainly for troops of the Ministry of Defense and other power structures of the Republic.

Since 1996 the Central-Asian Telecommunication Training Center for raising the level of engineers' skills has been functioning at the University. This Center uses the grant TESIS TEMPUS under the program of the European Union Commission. About 100 lecturers and post-graduates raised the level of their skills in training centers of Belgium and Greece under this program. At the University there is also a Center for training women in information and telecommunication technologies established by the Trade and Development Agency and, besides that, there are courses under the CISCO program (USA). All the preparations are being made to organize the joint Uzbek-Indian Training Center of Information Technologies. The University has established close friendly and business relationships with many relative higher education institutions of the world.

Two lyceums are functioning under the patronage of the University: Boarding School Lyceum and Academic Lyceum, each of them trains about 200,250 students. The classrooms of the lyceums are equipped with sufficient computers, including computers connected to the Internet. The library fund of the university has over 300,000 books and it is constantly increasing and renovating. There is also an electronic library connected to the local network of the university and to the Internet.

The university has a house of students for 700 persons, which has all necessary conditions for living, relaxation and sports. According to the president's decree dated May 30, 2002, the Tashkent Electro Technical Institute of Communication was reorganized into the Tashkent University of Information Technologies. The teaching staff got the instruction to fulfill their duties more properly and raise the level of education of Bachelors and Masters in information and computer technologies including information security and electronic commerce.

The Resolution of the Cabinet of Ministry of the Republic dated June 2, 2005 "About development of the staff training system in the sphere of information technologies" determined the Tashkent University of Information Technologies as the main educational institution preparing specialists in the sphere of information and communication technologies. There has been made a decision to open regional branches of the University in Nukus, Karshi, Samarkand, Fergana and Urgench.

## Faculties

The university trains Bachelors in 11 directions of education and Masters in 13 specialties. For 50 years, the university has trained over 30,000 engineers, both holders of Bachelor's and Master's degrees. Among its graduates there are more than 150 Doctors of Science and Candidates of Science. In the Tashkent University of Information Technologies there are six faculties:

- Computer Engineering
- Software Engineering
- Telecommunication technologies
- Radioengineering, radio and television
- Economics and management
- Professional education
- Special and five branches
  - Karshi branch
  - Nukus branch
  - Samarkand branch
  - Urgench branch
  - Fergana branch



### Computer Engineering Faculty (CIF)

The CIF consists of the following departments:

- Information technologies
- Programming technology
- Electronic commerce
- Information security
- Application programming
- Telematics
- Informatics
- Engineering and computer graphics

The CIF trains Bachelors in the following directions of education:

- Informatics and Information technologies
- Information security
- Electronic commerce

The CIF trains Masters in the following specialties:

- Computing machinery, complexes, systems and networks
- Automated control systems and information processing
- Mathematical and software support for computing machinery, complexes, systems and networks
- Theoretical fundamental sofinformatics

#### **Software Engineering Faculty (SEF)**

The SE Software engineering is a systematic and disciplined approach to developing software. It applies both computer science and engineering principles and practices to the creation, operation, and maintenance of software systems. At the Tashkent University of Information Technologies, Software Engineering is an independent, interdisciplinary program supported by both the Faculty of Mathematics and the Faculty of Engineering. Graduates of this program will earn a Bachelor of Software Engineering (BSE) degree.

#### **Telecommunication Technologies Faculty (TTF)**

The TTF consists of the following departments:

- Telecommunication transmission systems
- Telematics systems
- Transport networks and telecommunication lines
- Telecommunication systems security
- Telecommunication networks and commutation systems
- Sociology and political science
- Electronics and circuit engineering
- Theory of electric network
- Control systems for telecommunication

The TTF trains Bachelors in the following directions of education:

- Telecommunication Engineering

The TTF trains Masters in the following specialties:

- Telecommunication Engineering.

#### **Radio Engineering, Radio and Television Faculty (RERTF)**

The RERTF consists of the following departments:

- Radio engineering and radio communication
- Antenna-feeder devices
- Radio communication devices
- Radio engineering systems
- Television and broadcasting
- Power supply of communication devices
- Higher mathematics

- Physics

The RERTF trains Bachelors in the following directions of education:

- Radio engineering
- Television, radio and broadcasting

The RERTF trains Masters in the following specialties:

- Radio engineering devices and means of communication
- Mobile communication systems

### Professional Education Faculty (PEF)

The PEF consists of the following departments:

- Professional pedagogics
- Information technologies in pedagogics
- Methods of teaching of professional disciplines
- Electronic pedagogics
- Pedagogics and psychology
- Uzbek and Russian languages
- Foreign languages
- Physical training and sports

The PEF trains Bachelors in the following directions of education:

- Professional education (informatics and information technologies)
- Professional education (telecommunications)

The PEF trains Masters in the following specialties:

- Methods of teaching of professional disciplines (telecommunications)
- Methods of teaching of professional disciplines (informatics and information technologies)

### Special Faculty (SF)

The Special Faculty consists of 10 departments. The SF mainly prepares communication officers for troops of the Ministry of Defense and other power structures of the Republic. The graduates of SF are forwarded to military units to continue with active duty under the distribution. After graduation they get a diploma in the corresponding specialty and lieutenancy. In the first and second years of study they are considered ordinary students; in the third year after their attestation they continue with their study and duty as cadets. The SF students and cadets are provided with a hospice (barracks) and three free meals a day.

The special academic councils are admitting Ph.D. theses on the above-mentioned specialties.

## The faculty I study at

The faculty of telephone and telegraphic communication was the first faculty of the university which was organized in 1955, subsequently after a number of renamings the faculty has received the name of telecommunication technologies.

The faculty trains specialists for designing, building and operation of digital and analog telecommunication transferring systems which work on fiber-optical, satellite, radio relay and cable communication lines.

### Faculty departments

#### Data transmission networks and systems

##### *The History of the Department:*

In June 2008, by order of the rector TUIT, Professor S.S Kosymov, the department "Telematics Systems" and "Management of telecommunications networks" have been united and renamed into "Network and data transmission systems." Starting with April 20 the department in charge of associate professor, Ph.D. Amirsaidov U B.

Departments united in "SiSPD" have their own history.

##### The department "Telematics Systems"

In 1958, the Department settled "Telegraph" on the basis of the Polytechnic of communication. The first lecture of the course "Foundations of Telegraphy" reading assistant professor, Ph.D. Bazilevich S B, laboratory studies conducted IB Zorin

In 1958-1960. Department in charge of associate professor, Ph.D. Milovidov ED At this time, lectures on the subject "Fundamentals of telegraphy," read Emelyanov, GA From September 1960 to work as assistants Askarov MB (In 1957 graduated from the MEIS) and Aripov MN In

December of that year by the Department "Telegraph" Aripov MN was sent to study in graduate school in the MEIS.

In the 1967-1968 academic year the department was renamed the "Telegraphy and transmission of discrete messages."

In the 1968-2000 years. Department in charge of Aripov MN. Research work was aimed at protecting information by using error-correcting codes, control and technical diagnostics of digital devices. According to the research, Professor Aripov MN has written six books and over 100 scientific papers. Under the leadership of Aripova MN PhD thesis defended Yusupov SZ, MZ Yakubov, Tukubaev ZB, MI Jalilov and Bychkov, ED On the part of professors, lecturers and researchers have been published over 200 scientific articles and about 100 teaching aids.

Since 1999, the Department began to prepare bachelors and masters in "Telecommunications".

Since 1996, the department was renamed the "telematics systems."

2001 to March 2005 the department "Telematics Systems" was headed by Associate Professor, Ph.D. Usmanov NB

In 2005-2007. Head of the Department worked Kamalov JK

In 2008-2009. academic year, the department began to head chief "Uzbektelecom", 2009-2010 Chief, "the Uzbek Agency for Communication and Information," Associate Professor, Ph.D. Mukhitdinov JA

Teachers of the department have been adequately rewarded by the state for effective work, including in 1998, to celebrate the 7th anniversary of Independence Juraev RH was awarded the "A'lo darazhali mutahassis" ("highly specialist").

In 2005, during the event, the 50th anniversary of TUIT, a senior lecturer Tursunhodzhaevoy TZ awarded the Order "Mehnat shuhrati."

To celebrate the 15th anniversary of Independence of Uzbekistan Usmanov NB was awarded the Order "Kukrak Nishon."

Also Associate Professor of Usmanov, NB member of IEEE, in 2006, Postgraduate of Koushakov N. received a presidential scholarship, postgraduate student in 2005, Yuldashev, MD became a Fellow of the company «Alcatel».

During the period of the Department has prepared more than 1,500 engineers, bachelors and masters. They continue their activities not only in Uzbekistan but also in foreign countries.

#### Department of "Managing telecommunications networks"

Department "Digital technology and telecommunications systems management" (TCB) was established in 1985 by order of the Ministry of Communications of the USSR of 28 November 1984. In the educational process and training in "Telecommunications Systems Management" have been invited leading professors of departments' Automatic telecommunication "and" Telegraphy and transmission of discrete messages. " It is known that by 1980, to foreign countries and the Soviet Union began the introduction of electronic switching systems, managed programs. Exactly the same automatic station began to take on the territory of Central Asia. For the preparation of new professionals has become necessary to open a new special department "Digital technology, telecommunications systems management." The first were the organizers of the Department of TsTiUSE TEIS Rector, Professor, Doctor of Technical Sciences, Academician ANUz Abdullaev, JA, Professor, Ph.D. Son V., Associate Professor, Ph.D. V. Suvorov, Associate Professor, Ph.D. Yunusov ZH.YU., Associate Professor, Ph.D. Jalilov MI, p. Teachers Kurmysheva AA, Kolesnikov VA Abramov, GI Assistant, Head of the Laboratory Aliyev, BA

The first ran Chair Professor, Ph.D., Academician ANUz Abdullaev JA

In the preparation of specialists in different years, their activities were Associate Professor, Ph.D. Amirsaidov UB, Associate Professor, t.k.n. IU Leventhal, Associate Professor, Ph.D. Shesterova NA, p. Lecturer Kravariti TA, assistants Mukhammedov AA, BB Khashimov, Safiyazov BJ

In February 1992, Rector and Head of the Department of TEIS Abdullaev JA became Minister of the Ministry of Higher and Secondary Education RU, and the chair of associate professor, Ph.D. Suvorov, VI

In 1993-2004. Department in charge of associate professor, Ph.D. Yunusov ZH.YU.. The department has organized its activities with the departments' TC and SC ", " TAS ", " RRT "special and absentee faculties. In 2004-2008. Abdullaev, JA carried out its activities as head of the department.

For the Bachelor of directions: "Digital technology" and "Control Systems Communication" organized by the department of discipline "Theory of Communication Networks", "Theory and design of telecommunication systems", "Database Management Systems", "Theory of providing telecommunication systems", "Complex Systems management of telecommunications, "" Digital technology and microprocessors ", " Office of Economic Information ", " Information foundations of computer systems ", and for the Masters -" Management of telecommunications networks ", " Internet Systems and Services. "

Beginning with the 1999-2000 school year to prepare the master had also organized the following areas:

- Control of digital technology and telecommunications;
- Theory of telecommunication systems;

For bachelor's and master's degrees were operating two research laboratories. We studied the device and the digital technology of microprocessors and their application and framework software. During the period of the department were trained in the specialty "Telecommunications Systems Management" More than 500 engineers and bachelors. They continue their activities not only in Uzbekistan but also in foreign countries.

At the present time in order to obtain in-depth knowledge of students in the learning process introduced new teaching technologies, in particular, to perform virtual laboratory work, training in special multi-media classrooms, are connected to the Internet.

## Telecommunication engineering

### *The history of the Department*

The department was founded in 1957 and named "The Department of telephony" of the Tashkent Electrotechnical Institute of Communications (TEIS) on the base of Tashkent Polytechnical college. The first head of the department was a professor V.E Korotkevich.

The following subjects: telephony, telegraphy, the electrical providing of devices of communication were conducted at that time. The following years, the number teaching subjects has increased up to 16. Currently, the number of teaching subjects in the direction of bachelors and masters - 10.

The great assistance was done by the specialists of the Institute of Communication in the formation and developing of the department in the period of the Soviet Union. In particular, great contribution was carried by the c.t.s, senior lecturer N.V.Zapletin. In the year of the department's foundation 153 students were admitted.

After graduating from the TEIS they have successfully worked and continue their activity in the position of business leaders of Enterprises of Communication of the Republic of Uzbekistan, the Central Asian republics and the other republics.

Since 1959 to 1961 the head of the department was a graduator of the TEIS c.t.s N.V.Reshetnikov, since 1962 to 1970 the head of the Department was a senior teacher V.V.Semchenko, since 1970 to 1982 –

senior lecturer M.Sh.Zahidov , since 1982 to 1994 – senior lecturer Allaev E.H, since 1994 to 2005 - Professor V.M.Son, since 2005 to 2006, c.t.s senior lecturer N.H.Gulturaev, since 2006 to 2007 – senior lecturer Allaev E.H, since 2007, the department is headed by c.t.s senior lecturer Eshmuradov A.M.

An employee of the Uzbek Ministry of Communications V.K.Obidin graduates of TEIS V.M.Son and LV Suslov were the first lecturers of the department.

Later the Department of telephony was renamed under the Department of Automatic Telecommunication (NPP). The great practical and methodical assistance in restoration activities was provided by the similar departments of the Leningrad (now St. Petersburg), Moscow and Odessa Institutes of communication, in particularly by professors M. Zhdanov, R.A.Avakov, O.N.Ivanova, Z.S.Kohanova, V.N.Roginsky, B.S.Livshits and others.

Year by year, material -technical base of the department was enriched and strengthened , increased the number of audiences.

If at the beginning of the activity of the department was only one laboratory, later the Department subsequently had four large and bright lecture halls, except these, there were branches of the department, located at 133 and 135 telephone stations.

Laboratory equipment is gradually replaced, starting with step-by-step analogue and switching coordinate systems to digital switching systems.

Now the department has a switching system NEAX-61 of Japanese production, company NEC (U.S. \$ 500,000), switching system S-12 of Chinese production , the company "SHANGHAI-BELL" (\$ 270,000 U.S.), switching system DTS-1100A of Korean production , Corporation DAEWOO (\$ 70,000 U.S.), switching system EWSD of German production, company SIEMENS (40 000 Germ. marks).

Currently, the department was renamed as the Department of "Telecommunication networks and switching systems" - TC and SC. Number of faculty members has risen up to 21.

For preparing highly qualified specialists of communication the staff of the department improve their skills on scientific and pedagogical, scientific-methodological and engineering-technical sphere in accordance with the schedule of training.

To achieve this, lecturers were trained in special courses and foreign companies.

Lecturers of the department are actively involved in national and international seminars and conferences, also they continuously improve their self-knowledge.

Over the past 10 years, the following lecturers improved their skills abroad : prof. V.M. Son in the Korean corporation DAEWOO-five months, the ass. A.D.Normuradov in the Belgian city of Antwerp under the TACIS program, 12 months, the assistant A D Mirzayev and V B Kim in the Greek of the University of Pastrascu TACIS, 1 week, c.t.s Usmanova N B and ass. Erkinbayeva in the Chinese firm «SHANGHAI-BELL» - 3 months, as well as senior teachers S.A.Sadchikova, MAbduzhapparova, ass. LT Erkinbaeva were 1.5 months in the company «SHANGHAI-BELL».

In subsequent years, it was adjusted providing of the text books, published in the official language. In particular, for the direction of bachelor textbooks have been published on subjects of Switching Systems ", " Fundamentals of automatic switching ", " The theory of the distribution of information, ""

Telecommunications networks ", " Telecommunication Systems and Networks ", and were published manuals on practical and laboratory classes conducted on these subjects.

#### Fiber-optic lines and measurement systems

##### *History of the Department*

The department began its existence since 1955 and was originally called the "Long Communication" at the Faculty of telephone and telegraph communications Tashkent Electrotechnical Institute of Communications. The department was headed by: Associate Professor Chernenko, Alexander, associate professor of BerganovRahmonovichIskandar, Associate Professor SharipovhimoAshrafovna. Today the chair is Associate Professor Isaev RI

When the faculty of "Telephone-telegraph" was divided into departments, "Automatic electric" and "multi-channel telecommunications" department was called "multi-channel telecommunications." After the independence of the Republic of Uzbekistan State Department has called the "Telecommunications transmission systems."

#### Mobile communication technologies

##### *History of the Department*

Department «The devices and the systems of radio communication" (D and SR) was established in 2008 by the merger of two departments, "the radio" and "Radio-technical systems."

##### *History of the Department "Radio Communication Devices"*

The department was organized in 1960 and was named "Radio receivers." Head of the Department was appointed Senior Lecturer Mansurov RI. During that time it was led by the candidate of technical sciences, senior lecturers Prakhov VI (1969 - 1980 y.) And Vasiliev M.G. (1980 - 1993 y.). Since 1993, department was led by doctor of physical - mathematical sciences, professor, academician of the RU Radjabov T.D .He is also an academician of the International Academy of Communications, New - York Academy of Production and the Academy of San - Francisco, Association of Scientists of the natural and social sciences.

In 1997 classes in radio transmitting device was given to the department, it was named the department of "radio communication devices."

In the department worked: Mansurov R.I., Prahova V.I., Vasilyeva M.G., and also docents L. Goldfeld, V. Spirin, V. Lisowski, Halle A. Maslov, A., Karimov R.K., S. Sazonov, A. Chan L. Korsuntsev P.P worked there in different years., senior teachers Filgus J.E., Starikov A.G., Dyachenko N.P., Karelin E.V. and Tsarev A.N., TM Morozova, N. Baev N., Tarasov AV, Kondrashechkin A. Nigmanov W., G.N .Kuzmina, who gave lectures, laboratories and practical classes.

The Teachers of the department were the first in lectures audio recordings and explaining wiring diagrams, drawings, slides in the organization of classes by disciplines in a modular and block method.

M.G .Vasiliev, Praxov V.I., Goldfeld L.N. and Senior Lecturer Karelin EV showed the relevance of particular lecturers in conducting these works.

Department in 1999, organized its branches in Tashkent television tower and the NGO "Academdevice" Academy of Sciences of RUz.

### ***History of the Department, "Radio Engineering Systems"***

The department was organized in 1970. It was separated from «radio transmitters" Department in 1960, , It was named "Radio and radio systems" department till 1986 and belonged to the faculty, "Multichannel electrical communication." , and since 1986 "the radio and the radio." Department.

In 1996 it was transferred into the staff of RRT faculty and renamed «Radio relay and satellite communication systems».

Since 2003-2004 academic years it was called as «Radio engineering systems» department (RES).

Heads of department in 1970 - 1972 years have been professor Kazan V.I., Vasilev S.A. Senior Lecturer (1972 - 1974 y.), Associate professors Abramyants O. (1974 - 1977 y.), Spirin V. (1977 - 1997 y.) And from 1997 docent Ibraimov R.R.

The senior teachers Vuloev A.I, Chizhevsky V.I, Belkind L.V, Mangeldina V.D Kravchenko E.F, Rozhkov V.N also worked in this department.

Since 1974, the Department of the enlarged PhD Ibraimov RR, Dzhahalolovym IK, Romanenko, BA Since 1977, began working Yakubov UM, Negrienko AG Leventhal MJ and Kuzmin, AP

In 2005, the staff of the department consists of employees - assistant professor Ibraimova RR, senior teachers Vasiliev SA, Belkind LV, Kavilova R.YU, Khatamov AP Rahmitdinov ES, assistant Mirzaev D . A. Madaminov HH, SA Abdukayumov

In 2004 by grant of Motorola company, the department was equipped with a computer lab where students made laboratory works on the studied subjects .

Teachers of members of the department conducted state budget and contract-based research work. A special place among them are such topics as the use of an artificial Earth satellite in the collection, processing and management of water basin of the Aral Sea, the problem of distribution of digital radio and television programs via satellite, the development and study of methods of remote sensing systems and the basic characteristics of communication channels. The results of the research published several scientific articles master's theses were protected by Arslanov A.R Leventhal I.J.

Since 2008, the department "the radio" and "Radio-technical systems" have been combined, and the department was named "Radio equipment and systems."

Teachers of the department teach classes on such subjects:

#### **TV and Radiobroadcasting**

### ***History of the Department***

The department " Television and Radio " (TV and radio ) was organized in 1960 at the Faculty of " Telecommunications and Broadcasting ." The first head of the department was appointed professor K.N.Matveenko (1960-1964 years) . In the following years, the department was headed Ph.D., Associate Professor Li Sen -san (1964-1969 years) , Senior propeodavatel MN Vaulin (1969-1970 years), Associate Professor SZ Tadzhibaev (1970-1980 years) , Professor Yu Sagdullaev (1980-2001 years) . In the period

2001-2005 , the department in charge of re- S.Z.Tadzhibaev . In 2005-2008, Ph.D., associate professor Mahmudov , and since 2008, the department was headed Ph.D., Associate Professor Tahir Gafurovich Rakhimov .

The first research laboratory of the Department was organized in 1970, who studied the principles of television and radio broadcasting. In 1981 he organized a second research laboratory.

In the years 1977-1982 in the walls of the laboratory prototype was invented color TV camera on the basis of a semiconductor device with charge coupling device (CCD) . This prototype in 1982, was presented at the All-Union Scientific Conference ( Yerevan, Armenia ) . In 1984 , the invention was awarded a silver medal at ENEA . Furthermore, in the years 1982-1985 was invented by the laboratory staff television device objects structure defining the distance. In 1988-1990 he was also invented device that converts a multi-frame image on malokadrovoe standard.

The second scientific laboratory department, under the leadership of Y.S.Sagdullaeva , worked on the creation of measuring television system control docking of spacecraft. The work was done by order of "Energy" on the basis of a business agreement . The project was led academic D.A.Abdullaev . By devices conventionally are named Stork 1, 2 , 3 , 4, and were used during docking space stations and vehicles "Mir " and "Progress " and "Union". For this achievement the project manager D.A.Abdullaev was awarded the Medal of SP The Queen and the diploma of Yuri Gagarin . By the Rector TITU from 7.09.2010 , the staff of the Department TV and radio has been extended to him the union of the department of antenna-feeder devices. As a result , the scientific direction of the Department of TV and radio expanded and the department reached 10 staff members.

From 26 March 2013 "On the training activities in the sector of information and communication technologies" by order of the numbers 905 , 29 September 2013 Department called " TV and Radio Systems" on line 1942 TITU new faculties and departments .

## Radiotechnics and electronics

### *Department history*

The department was created in 1960 as department of «Theoretical bases of a radio engineering». The senior teacher V.A.Chernousov (1960-1964 managed it.). In 1964-1965 educational year was the Theory of signaling and the theory of nonlinear electric chains »(ТПС and ТНЭЦ) is reorganized and renamed into department of «. A Cand.Tech.Sci., senior lecturer G.J.Ljahovetsky was the first head of renamed department TPS and ТНЭЦ. In different years it was headed A.A.Kropivnitsky's by senior lecturers (1978-1993rr.), S.H.Sidikov (1993-1997rr.). With 1997 on 2010 department senior lecturer A.A.Abduazizov headed. Since 2003-2004 the department is renamed into department of «Radio engineering's and radio communications» (Radio Telephone and Personal Computer).

Now the head of the department is I.R. Faziljanov, the senior teachers A.A.Jarmuhamedov, H.H.Shajusupova, U.S.Sobirova, J.T.Jusupov, assistants D.S.Juldasheva, K.B.Bojmurotov, N.A.Jadgarova.

In preparation of engineers on specialities of tele-radio broadcasting and telecommunication (1960-1994) the department spent studies on following disciplines:

## Our Republic

**Uzbekistan**, officially the **Republic of Uzbekistan** (Uzbek: *O'zbekiston Respublikasi*, Ўзбекистон Республикаси), is a doubly landlocked country in Central Asia. It is a unitary, constitutional, presidential republic, comprising 12 provinces, 1 autonomous republic, and 1 independent city. Uzbekistan is bordered by five countries: Kazakhstan and the Aral Sea to the north; Tajikistan to the southeast; Kyrgyzstan to the northeast; Afghanistan to the south; and Turkmenistan to the southwest.

Once part of the Turkic Khaganate and later Timurid Empires, the region which today includes the Republic of Uzbekistan was conquered in the early 16th century by nomads who spoke an Eastern Turkic language. This region was subsequently incorporated into the Russian Empire in the 19th century, and in 1924 it became a bordered constituent republic of the Soviet Union, known as the Uzbek Soviet Socialist Republic (Uzbek SSR). It subsequently became the independent Republic of Uzbekistan on 31 August 1991 (officially, as of the following day). Most of Uzbekistan's population today belong to the Uzbek ethnic group and speak Uzbek, a language belonging to the family of Turkic languages.

Uzbekistan's economy relies mainly on commodity production, including cotton, gold, uranium, and natural gas. Despite the declared objective of transition to a market economy, its government continues to maintain economic controls which deter foreign investment and imports in favour of domestic 'import substitution'. The policy of a gradual, strictly controlled transition to the market economy has produced beneficial results in the form of economic recovery after 1995.

Uzbekistan is a secular, unitary, constitutional republic with a diverse cultural heritage. The country's official language is Uzbek, spoken natively by approximately 85% of the population. Uzbeks constitute 81% of the population. Minorities include Russians (5.4%) and others (13.5%). A majority of Uzbeks (54%) are non-denominational Muslims. Uzbekistan is a member of the CIS, OSCE, UN, and the SCO.

## Geography

Uzbekistan has an area of 447,400 square kilometres (172,700 sq mi). It is the 56th largest country in the world by area and the 42nd by population. Among the CIS countries, it is the 5th largest by area and the 3rd largest by population.

Uzbekistan lies between latitudes 37° and 46° N, and longitudes 56° and 74° E. It stretches 1,425 kilometres (885 mi) from west to east and 930 kilometres (580 mi) from north to south.

Bordering Kazakhstan and the Aral Sea to the north and northwest, Turkmenistan to the southwest, Tajikistan to the southeast, and Kyrgyzstan to the northeast, Uzbekistan is one of the largest Central Asian states and the only Central Asian state to border all the other four. Uzbekistan also shares a short border (less than 150 km or 93 mi) with Afghanistan to the south.

Uzbekistan is a dry, landlocked country. It is one of two doubly landlocked countries in the world (that is, a country completely surrounded by landlocked countries), the other being Liechtenstein. In addition, due to its location within a series of endorheic basins, none of its rivers lead to the sea. Less than 10% of



its territory is intensively cultivated irrigated land in river valleys and oases. The rest is vast desert (Kyzyl Kum) and mountains.

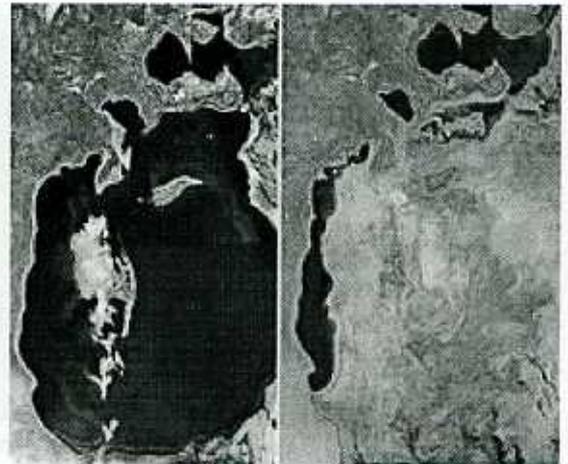
The highest point in Uzbekistan is the Khazret Sultan, at 4,643 metres (15,233 ft) above sea level, in the southern part of the Gissar Range in Surkhandarya Province, on the border with Tajikistan, just northwest of Dushanbe (formerly called Peak of the 22nd Congress of the Communist Party).<sup>[8]</sup>

The climate in the Republic of Uzbekistan is continental, with little precipitation expected annually (100–200 millimeters, or 3.9–7.9 inches). The average summer high temperature tends to be 40 °C (104 °F), while the average winter low temperature is around −23 °C (−9 °F).

## Environment

Uzbekistan has rich and diverse natural environment. However, decades of questionable Soviet policies in pursuit of greater cotton production have resulted in a catastrophic scenario with the agricultural industry being the main contributor to the pollution and devastation of both air and water in the country.

The Aral Sea used to be the fourth-largest inland sea on Earth, acting as an influencing factor in the air moisture and arid land use. Since the 1960s, the decade when the misuse of the Aral Sea water began, it has shrunk to less than 50% of its former area and decreased in volume threefold. Reliable, or even approximate data, has not been collected, stored or provided by any organization or official agency. Much of the water was and continues to be used for the irrigation of cotton fields, a crop requiring a large amount of water to grow.



Comparison of the Aral Sea between 1989 and 2014.

The question of who is responsible for the crisis remains open: the Soviet scientists and politicians who directed the distribution of water during the 1960s, or the post-Soviet politicians who did not allocate sufficient funding for the building of dams and irrigation systems.

Due to the Aral Sea problem, high salinity and contamination of the soil with heavy elements are especially widespread in Karakalpakstan, the region of Uzbekistan adjacent to the Aral Sea. The bulk of the nation's water resources is used for farming, which accounts for nearly 84% of the water usage and contributes to high soil salinity. Heavy use of pesticides and fertilizers for cotton growing further aggravates soil pollution.

## History

The first people known to inhabit the Central Asian region of modern-day Uzbekistan were Iranian nomads who arrived from the northern grasslands of what is now Kazakhstan sometime in the 1st millennium BC. These nomads, who spoke Iranian dialects, settled in Central Asia and began to build an extensive irrigation system along the rivers of the region. At this time, cities such as Bukhoro (Bukhara), Samarqand (Samarkand) and Chash (Tashkent) began to appear as centres of emerging government and high culture. By the 5th century BC, the Bactrian, Soghdian, and Tokharian states dominated and ruled over the region.



Alexander the Great at the Battle of Issus.

As China began to develop its silk trade with the West, Iranian cities took advantage of this commerce by becoming centres of trade. Using an extensive network of cities and rural settlements in the province of Mouwaurannahr (a name given the region after the Arab conquest) in Uzbekistan, and further east in what is today China's Xinjiang Uygur Autonomous Region, the Soghdian intermediaries became the wealthiest of these Iranian merchants. As a result of this trade on what became known as the Silk Route, Bukhoro and Samarqand

eventually became extremely wealthy cities, and at the time Transoxiana (Mawarannahr) was one of the largest, most influential and powerful Persian provinces of antiquity.



Russian troops taking Samarkand in 1868.



Registan, Sher-Dor Madrasah

Macedonian ruler Alexander the Great conquered Sogdiana and Bactria in 327 BC, marrying Roxana, daughter of a local Bactrian chieftain. A conquest was supposedly of little help to Alexander as popular resistance was fierce, causing Alexander's army to be bogged down in the region that became the northern part of the Hellenistic Greco-Bactrian Kingdom. The kingdom was replaced with the Yuezhi dominated Kushan Empire in the 1st century BC. For many centuries the region of Uzbekistan was ruled by the Persian empires, including the Parthian and Sassanid Empires, as well as by other empires, for example those formed by the Turkic Hephthalite and Gokturk peoples.

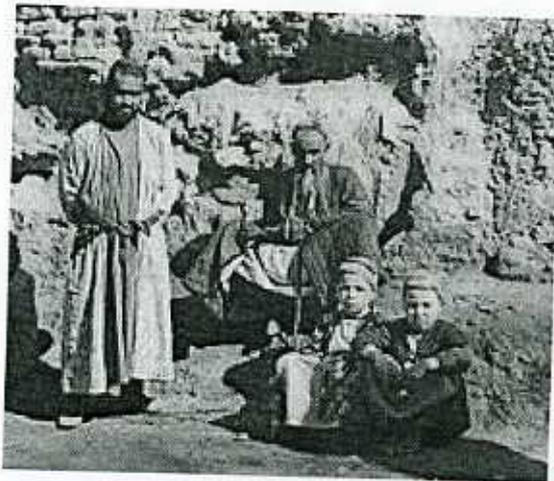
In the 8th century, Transoxiana, the territory between the Amudarya and Syrdarya rivers, was conquered by the Arabs (Ali ibn Sattar) who enriched the region with the Early Renaissance. Many notable scientists lived there and contributed to its development during the Islamic Golden Age. Among the achievements of the scholars during this period were the development of trigonometry into its modern form (simplifying its practical application to calculate the phases of the moon), advances in optics, in astronomy, as well as in poetry, philosophy, art, calligraphy and many others, which set the foundation for the Muslim Renaissance.

In the 9th and 10th centuries, Transoxiana was included into the Samanid State. Later, Transoxiana saw the incursion of the Turkic-ruled Karakhanids, as well as the Seljuks (Sultan Sanjar) and Kara-Khitans.

The Mongol conquest under Genghis Khan during the 13th century would bring about a change to the region. The Mongol invasion of Central Asia led to the displacement of some of the Iranian-speaking people of the region, their culture and heritage being superseded by that of the Mongolian-Turkic peoples who came thereafter. The invasions of Bukhara, Samarkand, Urgench and others resulted in mass murders and unprecedented destruction, such as portions of Khwarezmia being completely razed.

Following the death of Genghis Khan in 1227, his empire was divided among his four sons and his family members. Despite the potential for serious fragmentation, the Mongol law of the Mongol Empire maintained orderly succession for several more generations, and control of most of Transoxiana stayed in the hands of the direct descendants of Chagatai Khan, the second son of Genghis Khan. Orderly succession, prosperity, and internal peace prevailed in the Chaghatai lands, and the Mongol Empire as a whole remained a strong and united kingdom. (Ulus Batiy, Sattarkhan).

In the early 14th century, however, as the empire began to break up into its constituent parts. The Chaghatai territory was disrupted as the princes of various tribal groups competed for influence. One tribal chieftain, Timur (Tamerlane), emerged from these struggles in the 1380s as the dominant force in Transoxiana. Although he was not a descendant of Genghis Khan, Timur became the *de facto* ruler of



Two Sart men and two Sart boys in Samarkand, c. 1910

Transoxiana and proceeded to conquer all of western Central Asia, Iran, Asia Minor, and the southern steppe region north of the Aral Sea. He also invaded Russia, Turkey, and Iraq, and placed Iran and India under his command before dying during an invasion of China in 1405.

Timur was known for his extreme brutality and his conquests were accompanied by genocidal massacres in the cities he occupied.

Timur initiated the last flowering of Transoxiana by gathering together numerous artisans and scholars from the vast lands he had conquered into his capital, Samarqand. By supporting such people, he imbued his

empire with a rich Perso-Islamic culture. During his reign and the reigns of his immediate descendants, a wide range of religious and palatial construction masterpieces were undertaken in Samarqand and other population centres. Amir Timur initiated an exchange of medical discoveries and patronized physicians, scientists and artists from the neighbouring countries such as India; His grandson Ulugh Beg was one of the world's first great astronomers. It was during the Timurid dynasty that Turkic, in the form of the Chaghatai dialect, became a literary language in its own right in Transoxiana, although the Timurids were Persianate in nature. The greatest Chaghataid writer, Ali-Shir Nava'i, was active in the city of Herat (now in northwestern Afghanistan) in the second half of the 15th century.

The Timurid state quickly split in half after the death of Timur. The chronic internal fighting of the Timurids attracted the attention of the Uzbek nomadic tribes living to the north of the Aral Sea. In 1501 the Uzbek forces began a wholesale invasion of Transoxiana. The slave trade in the Khanate of Bukhara became prominent and was firmly established. There were between 25,000 and 60,000 Tajik slaves in Bukhara alone in 1821. Before the arrival of the Russians, present Uzbekistan was divided between Emirate of Bukhara and khanates of Khiva and Kokand.

In the 19th century, the Russian Empire began to expand and spread into Central Asia. There were 210,306 Russians living in Uzbekistan in 1912. The "Great Game" period is generally regarded as running from approximately 1813 to the Anglo-Russian Convention of 1907. A second, less intensive phase followed the Bolshevik Revolution of 1917. At the start of the 19th century, there were some 3,200 kilometres (2,000 mi) separating British India and the outlying regions of Tsarist Russia. Much of the land in-between was unmapped.

By the beginning of 1920, Central Asia was firmly in the hands of Russia and, despite some early resistance to the Bolsheviks, Uzbekistan and the rest of the Central Asia became a part of the Soviet Union. On 27 October 1924 the Uzbek Soviet Socialist Republic was created. From 1941 to 1945, during World War II, 1,433,230 people from Uzbekistan fought in the Red Army against Nazi Germany. A number also fought on the German side. As many as 263,005 Uzbek soldiers died in the battlefields of the Eastern Front, and 32,670 went missing in action.

On 31 August 1991, with the dissolution of the Soviet Union, Uzbekistan declared independence. 1 September was proclaimed the National Independence Day.

## History

The region was part of the Silk Road, a network of trade routes connecting the Mediterranean Sea and the Indian Ocean. The region was part of the Kushan Empire, the Sassanid Empire, and the Islamic Caliphates. It was a major center of trade and commerce, and a hub for the spread of Buddhism, Islam, and other religions.

## Geography

The region is a vast, arid landscape with a mix of mountains, plains, and deserts. The climate is continental, with hot summers and cold winters. The region is rich in natural resources, including oil, gas, and minerals.

## Government

Uzbekistan is a unitary semi-presidential republic. The President is the head of state, and the Prime Minister is the head of government. The country is a member of the United Nations, the Organization for Security and Co-operation in Europe, and the Commonwealth of Independent States.

## Tashkent

**Tashkent** (Uzbek: **Toshkent**, Тошкент; Russian: Ташкент; literally "Stone City") is the capital of Uzbekistan. The officially registered population of the city in 2012 was about 2,309,300.

Due to its position in Central Asia, Tashkent came under Sogdian and Turkic influence early in its history, before Islam in the 8th century AD. After its destruction by Genghis Khan in 1219, the city was rebuilt and profited from the Silk Road. In 1865 it was conquered by the Russian Empire, and in Soviet times witnessed major growth and demographic changes due to forced deportations from throughout the Soviet Union. Today, as the capital of an independent Uzbekistan, Tashkent retains a multi-ethnic population with ethnic Uzbeks as the majority.

### History as Chach

In pre-Islamic and early Islamic times, the town and the province were known as *Chach*. The Shahnameh of Ferdowsi also refers to the city as Chach. Later the town came to be known as Chachkand/Chashkand, meaning "Chach City".

The principality of **Chach** had a square citadel built here around the 5th to 3rd centuries BC, some 8 kilometres (5.0 mi) south of the Syr Darya River. By the 7th century AD, Chach had more than 30 towns and a network of over 50 canals, forming a trade center between the Sogdians and Turkic nomads. The Buddhist monk Xuánzàng 玄奘 (602/603? – 664 AD), who travelled from China to India through Central Asia, mentioned the name of the city as Zhěshí 赭時. The Chinese chronicles, *Suí shū* 隋書 (*Book of Sui*), *Běi shǐ* 北史 (*History of Northern Dynasties*) and *Táng shū* 唐書 (*Book of Tang*), mention a possession called Shí 石 or Zhěshí 赭時 with a capital of the same name since the fifth century AD [Bichurin, 1950. v. II].

In the early 8th century, the region was influenced by Islamic immigrants.

### Islamic history

The modern Turkic name of *Tashkent* (City of Stone) comes from Kara-Khanid rule in the 10th century. ("Tash" in Turkic languages means stone. After the 16th century, the name evolved from Chachkand/Chashkand to Tashkand. The modern spelling of "Tashkent" reflects Russian orthography and 20th-century Soviet influence.

### Mongol conquest and aftermath

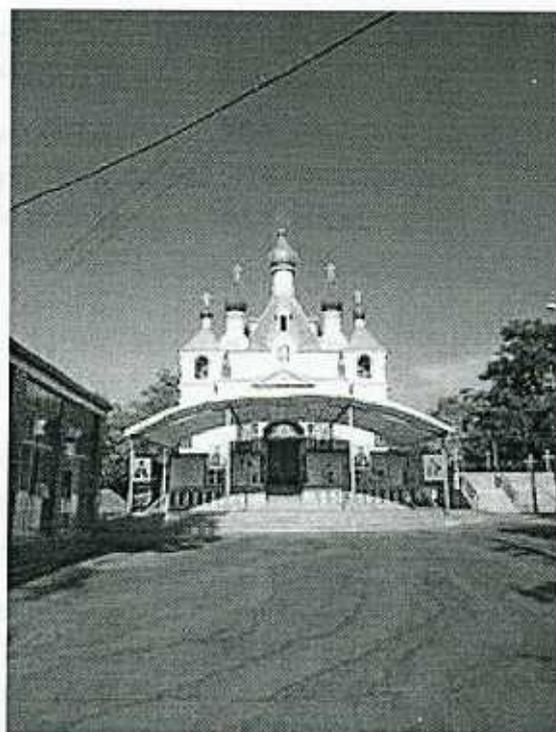
The city was destroyed by Genghis Khan in 1219 and lost much of its population as a result of the Mongol's destruction of the Khwarezmid Empire in 1220. Under the Timurid and subsequent Shaybanid dynasties the city's population and culture gradually revived as a prominent strategic center of scholarship, commerce and trade along the Silk Road.

### Kokand khanate

In 1809, Tashkent was annexed to the Khanate of Kokand. At the time, Tashkent had a population of around 100,000 and was considered the richest city in Central Asia. It prospered greatly through trade with Russia, but chafed under Kokand's high taxes. The Tashkent clergy also favored the clergy of Bukhara over that of Kokand. However, before the Emir of Bukhara could capitalize on this discontent, the Russian army arrived.

## Tsarist period

In May, 1865, Mikhail Grigorevich Chernyayev (Cherniaev), acting against the direct orders of the tsar, and outnumbered at least 15-1 staged a daring night attack against a city with a wall 25 kilometres (16 mi) long with 11 gates and 30,000 defenders. While a small contingent staged a diversionary attack, the main force penetrated the walls, led by a Russian Orthodox priest armed only with a crucifix. Although defense was stiff, the Russians captured the city after two days of heavy fighting and the loss of only 25 dead as opposed to several thousand of the defenders (including Alimqul, the ruler of the Kokand Khanate). Chernyayev, dubbed the "Lion of Tashkent" by city elders, staged a "hearts-and-minds" campaign to win the population over. He abolished taxes for a year, rode unarmed through the streets and bazaars meeting common people, and appointed himself "Military Governor of Tashkent", recommending to Tsar Alexander II that the city be made an independent khanate under Russian protection.



Alexander Nevsky Cathedral was built by the Russian Orthodox Church in Tashkent

The Tsar liberally rewarded Chernyayev and his men with medals and bonuses, but regarded the impulsive general as a "loose cannon", and soon replaced him with General Konstantin Petrovich von Kaufman. Far from being granted independence, Tashkent became the capital of the new territory of Russian Turkistan, with Kaufman as first Governor-General. A cantonment and Russian settlement were built across the Ankor Canal from the old city, and Russian settlers and merchants poured in. Tashkent was a center of espionage in the Great Game rivalry between Russia and the United Kingdom over Central Asia. The Turkestan Military District was established as part of the military reforms of 1874. The Trans-Caspian Railway arrived in 1889, and the railway workers who built it settled in Tashkent as well, bringing with them the seeds of Bolshevik Revolution.

## Effect of the Russian revolution

With the fall of the Russian Empire, the Russian Provisional Government removed all civil restrictions based on religion and nationality, contributing to local enthusiasm for the February Revolution. The Tashkent Soviet of Soldiers' and Workers' Deputies was soon set up, but primarily represented Russian residents, who made up about a fifth of the Tashkent population. Muslim leaders quickly set up the Tashkent Muslim Council (*Tashkand Shura-yi-Islamiya*) based in the old city. On 10 March 1917, there was a parade with Russian workers marching with red flags, Russian soldiers singing *La Marseillaise* and thousands of local Central Asians. Following various speeches, Governor-General Aleksey Kuropatkin closed the events with words "Long Live a great free Russia".

The First Turkestan Muslim Conference was held in Tashkent 16–20 April 1917. Like the Muslim Council, it was dominated by the Jadid, Muslim reformers. A more conservative faction emerged in Tashkent centered around the Ulema. This faction proved more successful during the local elections of July 1917.

They formed an alliance with Russian conservatives, while the Soviet became more radical. The Soviet attempt to seize power in September 1917 proved unsuccessful.

In April 1918, Tashkent became the capital of the Turkestan Autonomous Soviet Socialist Republic (Turkestan ASSR). The new regime was threatened by White forces, *basmachi*; revolts from within, and purges ordered from Moscow. In 1930 Tashkent fell within the borders of the Uzbek SSR, and became the capital of the Uzbek SSR, displacing Samarkand.

## Soviet period

The city began to industrialize in the 1920s and 1930s.

Violating the Molotov-Ribbentrop Pact, Nazi Germany invaded the Soviet Union in June 1941. The government worked to relocate factories from western Russia and Ukraine to Tashkent to preserve the Soviet industrial capacity. This led to great increase in industry during World War II.

It also evacuated most of the German communist emigres to Tashkent. The Russian population increased dramatically; evacuees from the war zones increased the total population of Tashkent to well over a million. Russians and Ukrainians eventually comprised more than half of the total residents of Tashkent. Many of the former refugees stayed in Tashkent to live after the war, rather than return to former homes.

During the postwar period, the Soviet Union established numerous scientific and engineering facilities in Tashkent.

On 26 April 1966, much of the old city was destroyed by a huge earthquake (7.5 on the Richter scale). More than 300,000 residents were left homeless. Some 78,000 poorly engineered homes were destroyed, mainly in the densely packed areas of the old city, where traditional adobe housing predominated. The Soviet republics, and some other countries such as Finland, sent "battalions of fraternal peoples" and urban planners to help rebuild devastated Tashkent. They created a model Soviet city of wide streets planted with shade trees, parks, immense plazas for parades, fountains, monuments, and acres of apartment blocks. About 100,000 new homes were built by 1970, but the builders occupied many, rather than the homeless residents of Tashkent. Further development in the following years increased the size of the city with major new developments in the Chilonzor area, north-east and south-east of the city.

At the time of the collapse of the Soviet Union in 1991, Tashkent was the fourth-largest city in the USSR and a center of learning in the fields of science and engineering.

Due to the 1966 earthquake and the Soviet redevelopment, little architectural heritage has survived of Tashkent's ancient history. Few structures mark its significance as a trading point on the historic Silk Road.



Tashkent, 1917



The Courage Monument in Tashkent on a 1979 Soviet stamp

## Capital of Uzbekistan

Tashkent is the capital of and the most cosmopolitan city in Uzbekistan. It was noted for its tree-lined streets, numerous fountains, and pleasant parks, at least until the tree-cutting campaigns initiated in 2009 by local government.<sup>191</sup>

Since 1991, the city has changed economically, culturally, and architecturally. New development has superseded or replaced icons of the Soviet era.

The largest statue ever erected for Lenin was replaced with a globe, featuring a geographic map of Uzbekistan. Buildings from the Soviet era have been replaced with new modern buildings. The "Downtown Tashkent" district includes the 22-story NBU Bank building, an Intercontinental Hotel, the International Business Center, and the Plaza Building.

The Tashkent Business district is a special district, established for the development of small, medium and large businesses in Uzbekistan.

In 2007, Tashkent was named the "cultural capital of the Islamic world" by *Moscow News*, as the city has numerous historic mosques and significant Islamic sites, including the Islamic University. Tashkent holds the Uthman Qur'an, the earliest written copy of the Islamic holy book, which has been located in the city since 1924.



Independence Square

## The role of IT in our life

Personal growth takes on a whole new meaning in light of massive global changes never before seen in human history. The answer to "what do you want to be when you grow up?" may not exist for many of our young children today, as they will be working in jobs that have never been created before. Who knew 20 years ago that there would be "an app" for everything and you could carry dozens of them all with you on your phone?

We can look back to the Industrial Revolution for clues of how our societies transform with the advancement of technology. As mentioned in the recent issue of *The Economist*, a hundred years ago one in three American workers were employed on a farm. Today less than 2% of them produce far more food.

During the Industrial Revolution, factories and machines replaced many jobs, and increased productivity. The same is true with this new wave of innovation - some jobs are shrinking or will disappear completely, as new ones will be created.

Take for example, the once great company Kodak, which at its height employed over 145,000 people. Kodak filed for bankruptcy only a few months before Facebook purchased Instagram, the then 18 month-old photo sharing company, for a whopping \$1 billion dollars. It is hard to fathom that Instagram had 30 million users and a staff of only 13 people when it was purchased. (*The Second Machine Age*)

Seamstress, typist, and telephone operator are just a few of the jobs that have been replaced in recent history. Today we are more familiar with garment factories, speak-to-type software, digitized phone directories, and ATM machines. An article in *Business Insider* suggested possible future career trends such as: quantified self personal trainer (analyzes your fitness data to create a personalized plan) crowdfunding specialist (crowd sourced fundraising), and cultural skill Sherpa (helps clients obtain necessary skills for unique jobs). Just imagine for a moment some of the interesting conversations that will be sparked by the question, "What do you do?"

While startups like Instagram, Airbnb, and Uber - all services that my kids and their friends now use - are disrupting traditional forms of businesses, they also create new jobs and models in their industries. Of course, it takes time for the marketplace to adjust to this shift. For example, Google, once a small startup, now employs 46,000 and has a tremendous presence in our modern lives.

Old assumptions about a typical career track are also changing. A recent survey of 12,000 people aged between 18 and 30 in 27 countries, interestingly shows that more than two-thirds see opportunities in becoming an entrepreneur. This shows a dramatic shift in the way youth see their future unfolding. The economic crisis that began in 2008 has also added to the lack of trust for many in being able to find a good conventional job. With the high unemployment rates around the world, millennials feel they have nothing to lose by forming their own startup rather than joining an established company.

So how do we prepare for this major transition?

It appears that education and re-training will take a much bigger role in our lives. Investing in education will be even more important as it creates a new supply of skilled workers ready to meet society's demands. Many will take online courses, go back to school or take private classes to ensure they are learning the skills needed to make a job transition.

It is estimated that 47% of jobs categories will become automated in the next decade. Therefore, it will be increasingly important for people to distinguish themselves from computers. Some suggest that future curriculums should reinforce the importance of critical thinking rather than rote learning. Jobs in more emotive fields requiring more cognitive dexterity, such as counseling and other human services, may expand as well.

As Reid Hoffman asserted in his best-selling book, *The Start-up of You*, "people ought to treat themselves as a start-up." This means that we need to develop a high tolerance for ambiguity and a readiness to redirect or adjust our course with the changing environment.

Studies have also shown parallels between startups and successful innovators and entrepreneurs. It appears that there are three key characteristics that most entrepreneurs share: openness, conscientiousness, and agreeableness. In *David and Goliath*, Malcolm Gladwell states that innovators have to be open in order to imagine things that haven't existed before. But, they also have to be conscientious and bring a level of discipline in order to bring their ideas to fruition. What is more startling though is that innovators rate quite low on the agreeableness scale. This is simply because they need to be willing to risk social disapproval in order to challenge prevailing ideas.

These findings apply not only to the business world, but also in the most important enterprise of all -our life. The challenge is to think of ourselves as permanently in beta--constantly evolving and adjusting. Reid Hoffman said it best, "the trick is to never stop starting."

## Holidays

In Uzbekistan there are following national holidays

### New year (January, 1st)

Is the first day of New Year. New Year is widely celebrated worldwide and at various times year. A symbol of New Year is the Grandfather a frost and the Snow Maiden, and also the dressed up fir-tree. Exactly at midnight from 31st December till 1st January, when hours solemnly beat 12 hours, there comes long-awaited New Year. People at this time celebrate and widely mark this holiday with native and close behind the covered elegant table. Also gifts and surprises are traditionally presented each other.

### Day of defenders of the Native land (January, 14th)

This holiday in independent Uzbekistan is celebrated in honor of creation of own Army forces. The parliament of the country on 14th January, 1992 has made a decision on transition of all parts and connections, military educational institutions and other military formations deployed in territory of the country, under jurisdiction of the Republic of Uzbekistan. So the beginning was necessary to creation of own Army forces. On 29th December, 1993 January 14th has been declared by Day of defenders of the Native land.

### Women's day (March, 8th)

The international women's day is a holiday of beauty, tenderness and femininity. On March, 8th also it is known as " Mothers day". People celebrate this holiday, as a holiday of love, kindness and beauty. We are once again convinced and deeply we realize, concepts of Spring and the Woman as they supplement each other are how much harmonious. The nature not has disposed of gift so, that the female holiday coincides in the first days of spring as beauty of the woman compare to a gentle flower. Men give this day to the mothers, wives and daughters flowers and gifts with sincere wishes.

### Navruz (March, 21st)

The most ancient national holiday Navruz ("Holiday Navruz"), in translation with Persian Navruz designates "new day". Navruz which is marked{celebrated} on March, 21st, it is considered the beginning of new year. As is known on March, 21st is a day a spring equinox. Day length and nights is identical - 12 hours. On March 21st the Earth enters during the World astronomical equality. And still, this day seasons on hemispheres vary, if in a southern hemisphere there comes autumn, northern - spring. This holiday is celebrated in the beginning of spring when all plants and trees blossom and get a new spring kind. In the beginning of this holiday many Uzbek family prepare for national dishes such as: Sumalak, Halim, Somsa from plant, Pilov and others. These Uzbek dishes contain many vitamin substances which are useful to a human body.

With the obtaining of the country's independence ancient customs and traditions of Uzbek people have revived, holiday Navruz also has been restored, and celebrating has got new scope and depth. It became a national holiday of friendship, unification, brotherhood of all people. In the bright dramatized representations of philosophic and poetic judgment of Navruz, it places in national history reveals. Now Navruz is celebrating annually on Alisher Navoi's square.

### Day of memory and honor (May, 9th)

In 1999 majestic Square of Memory has been opened in capital of Uzbekistan on 9th May and since then Day of memory and honor on May, 9th is celebrated. This holiday in independent Uzbekistan is

celebrated in honour of memory of our compatriots which during centuries heroically, self-denyingly protected our native territory, its freedom and independence, a peace life of our people.

Concept "Day of Memory and honors" has very deep sense. This famous day a duty is to recollect and glorify those people who took part in fights against fascism, showed heroism and sacrificed a life in the name of protection of the Native land, and also such national heroes as Tumaris, Shiroq, Spitamen, Jaloliddin Maguberdi, Najmiddin Kubro, Namoz-batir which have sacrificed the life in the name of freedom of which during centuries people dreamed, to recollect such self-denying representatives of our nation as Kadiri, Behbudi, Munavar-kori, Chulpon, Avloniy, Fitrat, Usman Nosir.

People esteems that who has taken place through many tests and difficulties in a life, has not regretted the life in the name of the Native land, and senior generation, which and today among us.

#### **Day of independence (September, 1st)**

The main national holiday of the Republic of Uzbekistan is the Day Independence. This holiday is celebrated annually on the 1st September, is ceremonial and colorful. This national holiday personifies all dreams and expectations of all Uzbek people which lean on main principles friendliness, solidarity, charity, mutual respect.

Representatives of the various nations living in Uzbekistan, despite of a nationality, religion, the social status all actively celebrate a holiday in each street, the area and the people living in mahallas and in regions.

Representatives of art arrange various shows on the areas, and also in parks of city. Many foreign visitors and tourists participate in various unforgettable traditional entertainments and representations.

#### **Day of teachers and instructors (October, 1st)**

Annually on the 1st October in Uzbekistan Day of Teachers and Instructors is solemnly celebrated. The deep respect for the teacher has taken roots in our territory during old times. "Domlo", "Muallim", "Ustoz" - these words during many centuries with gratitude and respect the pupils received from the teachers not only knowledge on subject matters said, but also manuals about the valid attitude to people, love to the Native land, about high morals and spirituality.

Pupils of schools and educational institutions deeply esteem all those who have given them the first vital knowledge. This day pupils with gratitude give flowers and gifts.

#### **The Constitution Day (December, 8th)**

The constitution is the main law of the state, the document which possesses a high validity. The constitution of the Republic of Uzbekistan is accepted by the Oliy Majlis on 8th December, 1992. The constitution consists of 6 sections, 26 chapters and 128 article. This holiday is celebrated across all Uzbekistan, and carries out various actions, devoted to the constitution day.

Ramadan Hayit (Iyd ul Fitr) and Qurbon Hayit (Iyd ul Adha) are also the national holidays, but dates of celebration depend on the Lunar Calendar in each year.

#### **Ramadan Hayit (Iyd ul Fitr)**

This holiday is known as Ruza Hayit, it coincides with 9-th month (Hidjriy) on a Muslim calendar. This holiday includes religious practice as Ruza which lasts 30 days and it is considered a ceremony of spiritual and moral purification. Conditions of the ceremony the following: from sunrise up to decline

not to eat food and also water; will be kept from evil thoughts, assumptions; with all surrounding to be in respect and make whenever possible more than goods to associates.

After performance of this ceremony last day the holiday which lasts three days - Ramadan Hayit begins. The first day of a holiday Ramadan Hayit is considered not working day, and all establishments have a vocation in this holiday.

**Qurbon Hayit (Iyd ul Adha)**

Religious holiday Qurbon Hayit this is the one of the greatest holidays in the World which is celebrated by Moslems. Sources of this holiday are ancient histories which are connected with prophet Ibrohim who in honor of the belief wished to sacrifice to "Allah" of the own son, but his actions have stopped kind spirits and instead of this have told to him to sacrifice other animals such as: sheep, camels, etc. Since this moment all Moslems began to sacrifice animals in these holidays. The holiday lasts three days and these days all Moslems celebrate this holiday with their family with natives and close. Especially in these holidays people visit native and close, and also sick and requiring in the help. The first day of a holiday ?Qurbon Hayit? is considered not working day, and all establishments have a vocation in this holiday.

## English speaking countries

Approximately 430 million people speak English as their first language.<sup>[1]</sup> English today is the third largest language by number of native speakers, after Mandarin and Spanish. However, when combining native and non-native speakers it is probably the most commonly spoken language in the world, though possibly second to a combination of the Chinese languages (depending on whether distinctions in the latter are classified as "languages" or "dialects").

Estimates that include second language speakers vary greatly from 470 million to over a billion depending on how literacy or mastery is defined and measured. Linguistics professor David Crystal calculates that non-native speakers now outnumber native speakers by a ratio of 3 to 1.

The countries with the highest populations of native English speakers are, in descending order: the United States (231 million), the United Kingdom (61 million), Canada (18.2 million), Australia (15.5 million), Nigeria (4 million), Ireland (3.8 million), South Africa (3.7 million), and New Zealand (3.6 million) in a 2006 Census.

Countries such as the Philippines, Jamaica and Nigeria also have millions of native speakers of dialect continua ranging from an English-based creole to a more standard version of English. Of those nations where English is spoken as a second language, India has the most such speakers. Crystal claims that, combining native and non-native speakers, India now has more people who speak or understand English than any other country in the world.

The following is a list of territories where English is an official language, i.e., the language of government. In 2014, there were 58 sovereign states and 21 non-sovereign entities where English was an official language. Many country subdivisions have declared English the official language at the local or regional level.

The majority of countries where English is an official language are former territories of the British Empire. Notable exceptions include Rwanda, which was a former Belgian colony, and Eritrea, which was an Italian colony where the British Empire spanned its control only in World War II and shortly after (1941-1952). English is the sole official language of the Commonwealth of Nations. English is one of the official languages of the United Nations, the European Union and the International Olympic Committee. Although English is not an official language in the United States or United Kingdom generally, Scotland, Wales, and many states and territories within the U.S. have English as an official language.