



University of
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Pioneer in Iranian
Higher Education

May. 2018





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Introduction

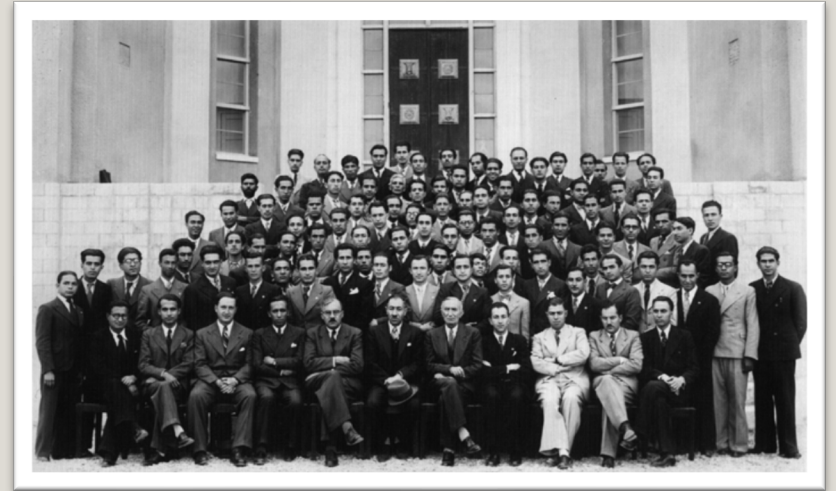
Introduction



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- University of Tehran: Iran's leading modern university.
- Followed in the footsteps of *Darul-Funun* (Polytechnic) School founded in **1851** and incorporating schools such as *Madreseh-ye tebb*, *Madreseh-ye alee-e felahat*, and *Madreseh-ye alee-e hoquq*.
- University of Tehran was officially ratified by the Iranian parliament in **1934**.



Faculty and students of the
Faculty of Medicine, 1940

Introduction



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- a **comprehensive university** offering a variety of disciplines
- 8 campuses in about 1,000,000 m² of educational space



Aerial view of the main
campus, 1960s



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Facts & Figures



Facts & Figures

Geography

- Central campus
- other faculties and institutions in **Tehran**



Tehran



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Facts & Figures

Geography

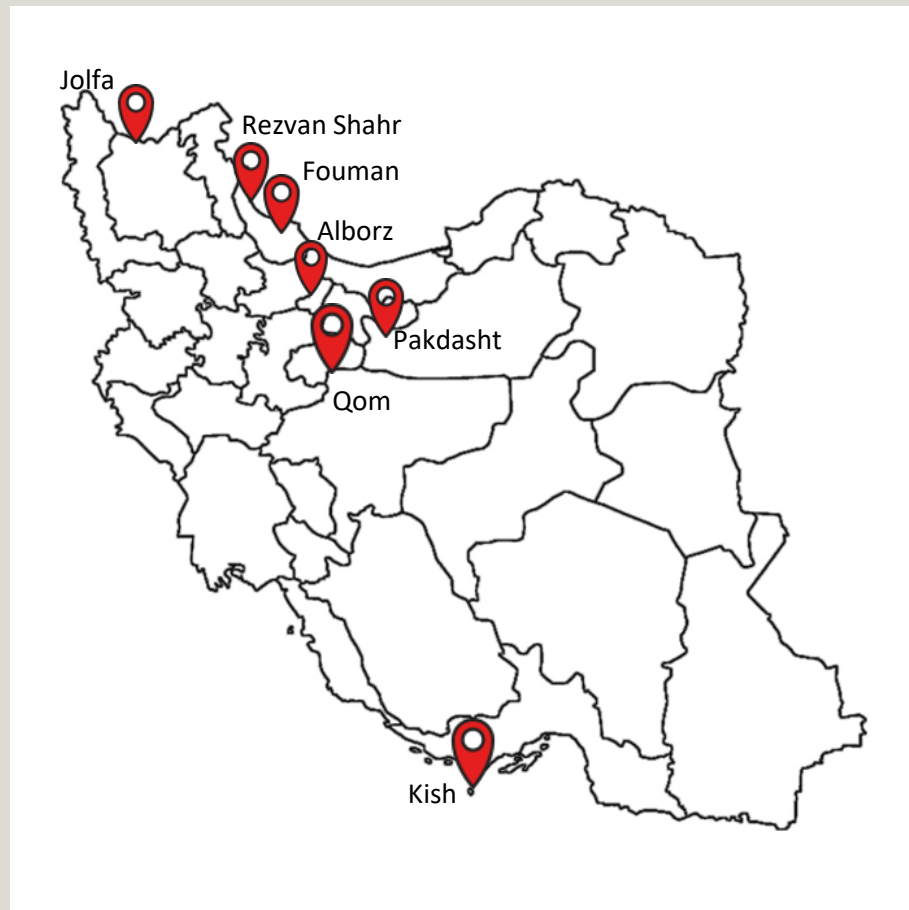
- Central campus
- other faculties and institutions in **Tehran**
- **7** other campuses across **Iran**



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Iran



Facts & Figures

Faculty Members (Feb. 2018)

- Total Number: **2,141**
- Professors: **503**
- Associate Professors: **626**
- Assistant Professors: **968**
- Lecturers: **44**
- Post Doc. **+70**



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Variety of Disciplines and Activities

- Educational Departments: **150+**
- Laboratories: **550+**
- Scientific Journals: **130+**
- International Agreements/MOU's: **415+**



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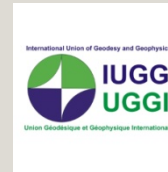
Variety of Disciplines and Activities

- Membership in International Associations/Unions: **25+**



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Research Priority



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- Water
- Environment and climate change
- Cybernetics and virtual space
- Energy
- Health
- Natural Disaster
- Social Welfare
- Food and Nutrition Security
- Land used planning
- Social harms

Facts & Figures

Research Institutions & Centers



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- **55+** research centers and institutions
- **37** centers of excellence
- **%14** of centers of excellence of the country



Joint research institutes



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- Oil institute (Ministry of oil and UT)
- Hydro turbine institute (Ministry of Energy and UT)
- Research in Energy management (Ministry of Energy and UT)
- Small CNG Institute (Ministry of oil and UT)
- NBIC (Iran vice president in Science and Technology)
- YONIDRO (IMIDRO and UT)
- MAPFAN (Mapna power plant manufacturer and UT)
- Climate Change
- Brain Mapping Institute (Iran vice president in Science and Technology, Tehran medical University and UT)
- Water Institute (Ministry of Energy, UNESCO, IHE Delft)

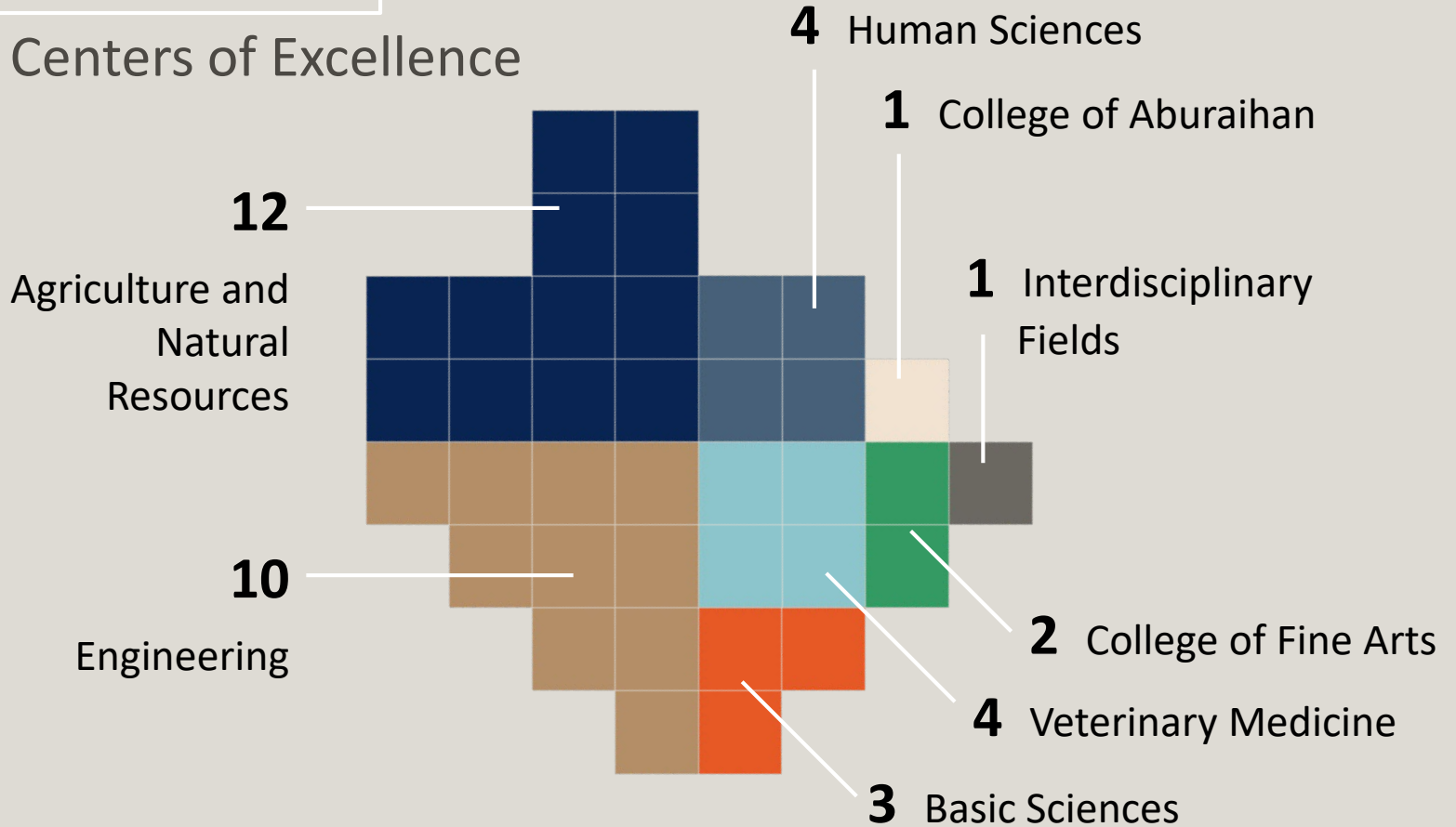
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Centers of Excellence



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Centers of Excellence



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- Applied electro-magnetism
- Electronic and Nano-Electronic
- Design and Optimization of Energy Systems
- Oil and Gas Processing
- Application of smart and applied methods in mechanical engineering
- Smart processing and control
- High Performance Materials

10

Engineering

- Engineering of surface and protection from erosion in industries
- Surveying Engineering in confronting with natural incidents
- Engineering and management of developmental infrastructures

Facts & Figures

7 UNESCO Chairs

- Water Reuse
- Interdisciplinary Research in Diabetes
- Education of Engineering
- Entrepreneurship
- Islamic Architecture and Inter-Cultural Dialogue
- Cultural and Cyberspace: Dual-Spacization of the World
- Social Health and Development



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Students (2017-18)

9,221

PhD

501

Prof. Doctorate

18,152

Master

16,619

Bachelor

44,493

Total

%63

Graduate Level

12,000

Tehran Dormitory
Capacity



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UT Science & Technology Park



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Founded: 2006

Mission:

- supporting University of Tehran spin-offs
- Bridging industry and university
- Facilitating internationalization of the resident companies



High standard office spaces
provided in incubator

Facts & Figures

UT Science & Technology Park (2017)



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UTSTP



Resident
Companies

155 Pre-Incubation

69 Incubation

83 Post-Incubation

1 Anchor Companies



75%

Percentage of Knowledge
Workers



2130

Employees



7 Trillion Rials

Companies Turnover



780

Products/Services

Facts & Figures

Global Subject/Faculty Rankings (2017-2018)



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- Engineering, Petroleum: **4**
- Engineering, Manufacturing: **10**



- Engineering, Petroleum: **48**



- Architecture: **151-200**



- Engineering: **42**
- Agricultural Sciences: **75**
- Materials Science: **140**
- Computer Science: **149**
- Plant and Animal Science: **232**
- Chemistry: **303**
- Biology and Biochemistry: **352**
- Physics: **477**

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Academic Publications

(Feb. 2018)



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- No. of Web of Science Indexed Documents: **37,296**
- No. of Scopus Indexed Documents (From 1953): **45,415**
- No. of WoS 2017 Indexed Documents: **3,817**
- No. of Scopus 2017 Indexed Documents: **4,796**
- Citations per Paper (ESI): **7.67**
- H-Index (WoS): **104**
- H-Index (Scopus): **122**
- International Collaborations: **~26%** of WoS Indexed Documents, **127** Collaborating Countries

Facts & Figures

International Students (2016-17)



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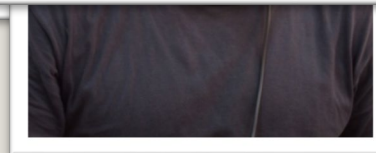
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Number of Students: **1,047**

(more than 50 nationalities)

- PhD: **352**
- Master's: **484**
- Bachelor's: **211**

Non-degree Programs: **1700+**



Facts & Figures

Joint & Dual Degree Programs



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ENSAM, France

Industrial Engineering



Indiana Univ.–Purdue Univ., USA

Electrical, Mechanical, and Computer
Engineering

Dual Deg.

Dual Deg.



SAPIENZA
UNIVERSITÀ DI ROMA

Sapienza Univ. of Rome, Italy

Iranian Studies



LUND
UNIVERSITY

Lund University, Sweden

GIS



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In the Future

In the Future

Main Goals of the 3rd Strategic Plan



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1. Internationalization



2. Innovation & Entrepreneurship



3. Ethics & Social Responsibility

In the Future

Central Campus Expansion Plan: Knowledge City, Green and Smart



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UT is dedicating a large portion of the vicinity of the main campus to start up business and knowledge-based companies.

The rules of free trade zone applies to UTSTP, thus companies benefit more when they open a branch or invest.



Current status of the central
campus

In the Future

Central Campus Expansion Plan: Knowledge City, Green and Smart

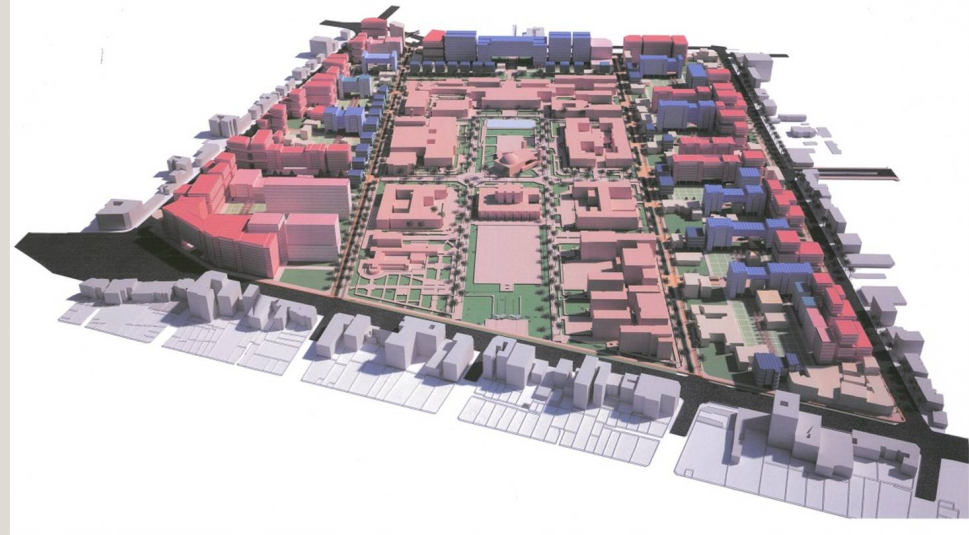


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Central campus expansion
plan



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MIDDLE EAST - EUROPE FORUM

Collaboration in Translational Research for a Sustainable Future

October 19-21, 2018
KISH ISLAND, IRAN

The banner features a central graphic of a globe with a cityscape on top, divided into four colored segments: Water (blue), NCDs (red), Renewable Energies (yellow), and Smart City (orange). Below the globe are five logos of participating institutions.

Water
The Middle East requires water resources and suitable land for agriculture. Much of the land that is available for producing crops is occupied by increasing desertification. Solving environmental problems is a Middle East concern.

NCDs
NCDs (Cardiovascular diseases, cancer, chronic lung diseases, diabetes, kidney and obesity) are recognized as "one of the major challenges for sustainable development in the 21st century".

Renewable Energies
The renewable energy, mostly solar power and wind, with its particular regional climate advantage offers Middle East a most effective and significant role as a cost competitive alternative to conventional fossil fuels.

Smart City
A Smart City should have Sustainable High Quality of Life, Intelligent Energy, High Standards of Living, and Resilience.

- To establish and strength a network of key decision makers in the science systems of Middle Eastern and European research institutions
- The international participant:
- European grant bodies, and researchers some Middle East Universities and 5 Iranian Universities
- Forum subjects: Water, Renewable energy, Non communicable disease and Smart cities



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The Role of Iranian Universities in Research

The Universities Mission

- Education
- Research
- The Third Mission, Social responsibility
- Society challenges and sustainable development should be reflected in research and Education?



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Research

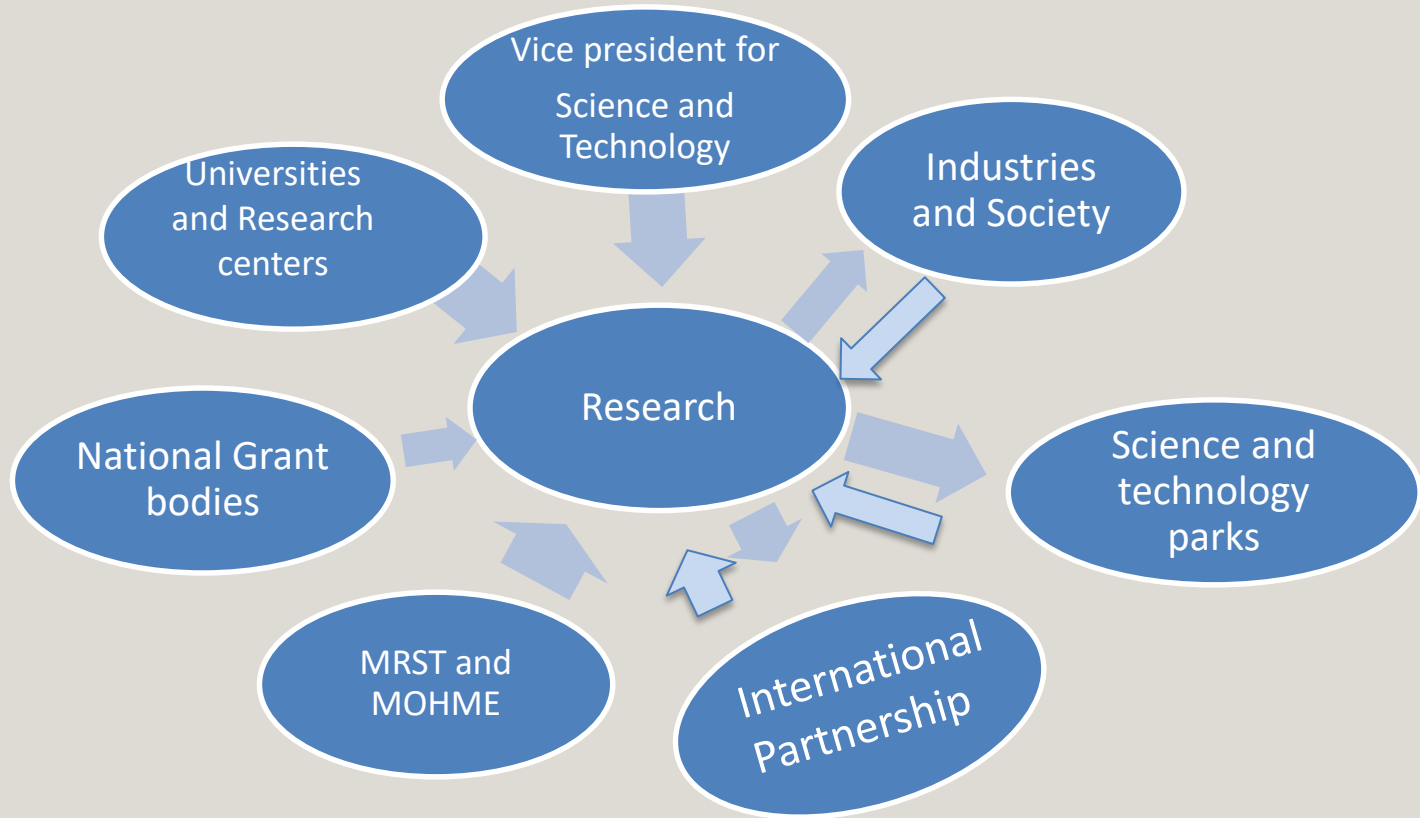
- **context-driven**” should research carried out in a context of application, arising from the very work of problem solving or;
- governed by the paradigms of traditional disciplines of knowledge."



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Research in Iran



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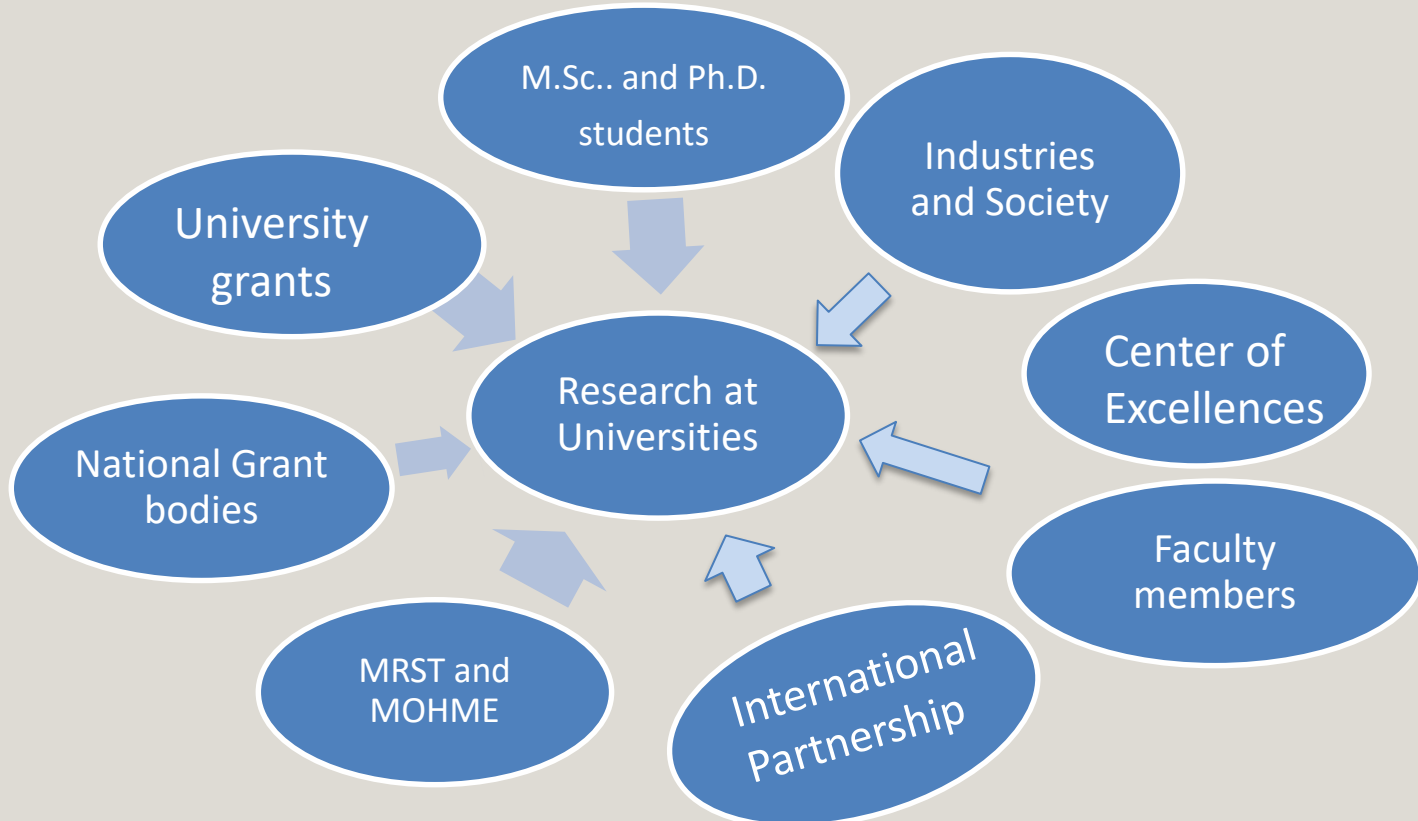
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Universities as the main Research player in Iran



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Research at Universities as the main research body



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- Human resources
 - ✓ Ph.D. students, around 115000 students; 52% MRST
 - ✓ Faculty members, around 80,000; 58% Governmental universities
 - ✓ Post docs
 - ✓ Researchers

Research Financing and National Grant bodies



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- Universities Budgets
- INSF, Iran National Science Foundation
Supporting basic research, Post Doc.,
supports patenting cost, co-funding with international grant bodies,..
- National councils for promotion of Science and Technologies: Nano, Bio, Materials and manufacturing, Cognitive, ICT,...
Is mainly supporting innovation in Science and Technology, seed money, start up business, VCs, incubators, and so on



National Grant Body

- The supreme council for Science, research, and Technology:
Joint Mega applied Projects between industry and Universities for implementation
- Innovation and prosperity foundation
Low rate loan to start up and knowledge based companies
- Venture Capitals
to put the knowledge to business by financial support
- Industrial grants



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Iran-German collaboration in Research



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- Joint research
- Dual Degree Programs
- Joint Workshop, Internship and summer school
- Exchange students and Faculty members
- Co-funding
- Students mobility, Erasmus
- Match making summit in specified subjects



... thank you for
your attention.

Facts & Figures

Library Resources



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- **1.5+ millions** books
- **60,000+** historically significant and unique documents
- **2,000+** historical maps
- **16,000+** manuscripts
- **2,700+** Newspaper and magazine titles (since 1843)
- Seismic data (all records over 3 Richter in Iran since 1993)



In the Future

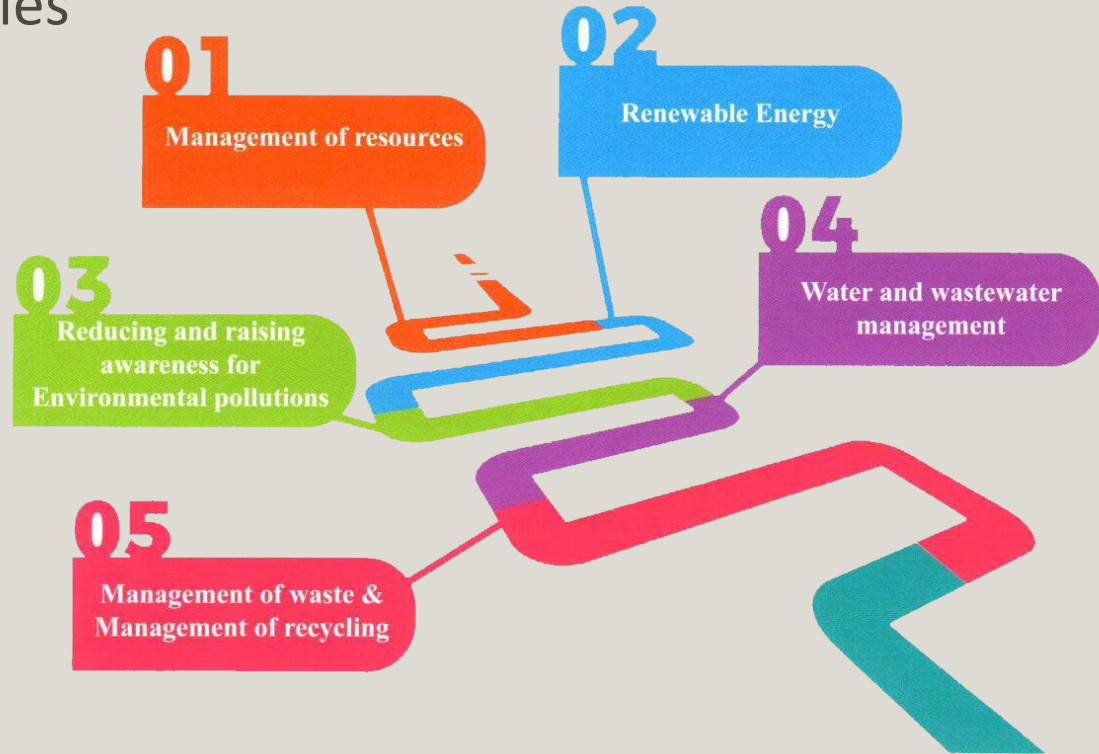
Environmental Policies



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As a social forerunner, UT plays its role by emphasizing on sustainable policies and strengthening the infrastructure needed for a green university.



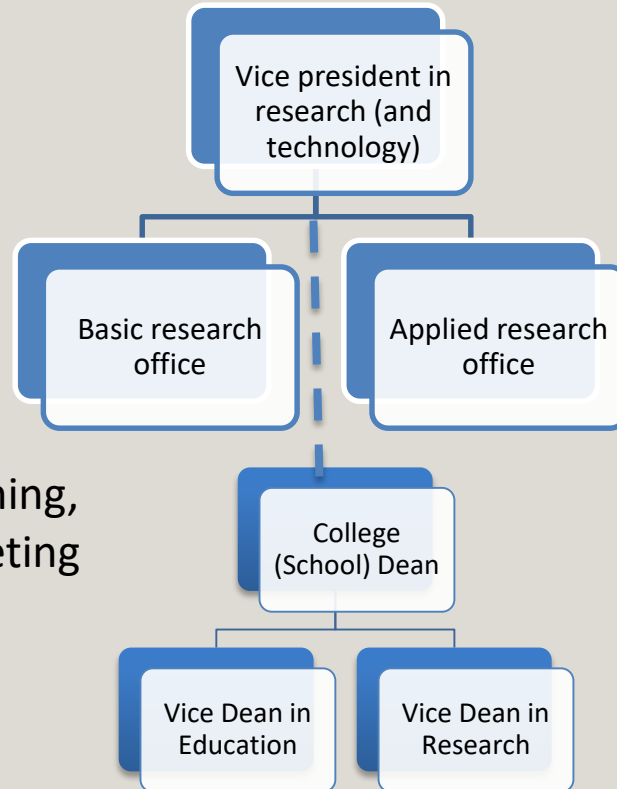
University Research Organization



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Regulation, Policies, Planning,
University research budgeting
Applied research





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- Iranian Resources:
Students, Ph.D. students, High quality
High Standard Universities

The Right Approach to research



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It is necessary that the share of research of GDP in the 6th Development Plan to be about 2% but despite its approval, and following it up in higher levels, its fulfillment is usually half percent and it has not been allocated more than that and this has discontinued planning by the planner organizations in the area of research. Research should not be seen as a cost, because research is the infrastructure of decision making in a

country. There are administrative and bureaucratic problems like the relations among university and other institutions and offices, because in this case, there are regulations which impose limits on research activities of university professors.

A Goal to Reach



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Iran is aware of the significance and position of research and considers it as its pivot of economic, social, political and cultural development.

Thus, in order to achieve scientific progress and playing a referential role, it has taken action to make strategic plan and investment.

In our country, in the 20-year Vision

Document, Iran has been targeted as a country with the first scientific and economic position in the region.

It is our understanding that this lofty objective will be possible only through research and research-based knowledge.

University & Production of Knowledge



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University as the knowledge producing institution, undertakes the main load of the duty to fulfill these important goals. The production of science and scientific development as the full-fledged development driving force plays a main role.

Research produces knowledge and application of knowledge in practice

causes development. The responsibility of development of research and production of knowledge is undertaken by universities which act based on their abilities, facilities and scientific experiences.

The National & International Aspects



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In a period of time, education and training students was the main mission of universities and higher education centers but now, universities have changed their structures and made a change in their mission to reinforce and enhance their position in the areas of science, research, technology and innovation.

Research has two aspects. One aspect is completion at international scene and

the other is the share of research in solving the problems of the country.

All countries have problems in the areas of economy, health, treatment, culture, politics, social issues, etc and the duty to solve these problems is undertaken by research.

Application Matters.

If researches are not applied and directed at solving a problem, finally no link is made between industry and research.

The universities of the third generation are applied and research-oriented universities. Besides training students, they do researches which lead to solving the problems of the society and respond to the questions made by the

executive managers.

The rate of development in research and investment in research in the last 40 years have not been sufficient, and naturally our country would have had a greater progress.



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From Research... to Product



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Our country is a developing country and each developing country is in need of researches, development of researchers and updating the researches.

Because the result of researches is presented to the society in form of innovation and this innovation is converted into technology and finally to product and therefore, the country can achieve the production of a product.

In general, we have observed that in the last 40 years in the areas which our country has utilized research, it has had good growth and been able to present its outcomes to the region and the world.

Budget: The Main Problem

The culture of using the researches of researchers to solve the problems of organizations and institutions has been institutionalized and the organizations are not ready to invest in it. There is the problem of budget.

If a Ministry gives budget for a research, these researches are not client-oriented researches and on the other side, the clients get accustomed to use the

results of free of charge researches.

Researches should be applied and based on the needs of the country.



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Foreign Investment



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For this reason, in the same method which is used by research institutes and big universities, it has been tried to establish start-up, side companies, absorb foreign investments outside the research domain and absorb the investors who invest in industry, and within the framework of *Science and Technology Park* to absorb budget for research work and outcomes in university.

In many areas which are based on technology, our equipment are not sufficient and modern. Of course universities have taken many steps and positive actions but it is hoped in participating with international partner university, we could have further improvement in it.

3rd Strategic Plan of the UT



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Universities are in the activity period of the third generation and entrepreneurship and pursuing to convert science into wealth. Relying on its strategic objective , the so called, “entrepreneurial university” , it intends to help the development of the society by training creative and innovative and research oriented graduates.

Today, there is a noticeable gap

between scientific potential and demands of industry and this gap should be filled in with the further interaction between industries and universities or higher education centers and University of Tehran makes attempts at this line.

Cooperation between University & Industry



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Our industry is not in need of graduates with degree but in need of expert and change-oriented applied forces, the experts who could give ideas and convert the idea into a new competitive product and service.

Cooperation between University and Industry will help with the direction of research, prevention from repetition, and encourage the industry to invest in

research and development to remove the problems of the society.

The increase of partnership between these two sections will lead to further employment of graduates and production of new product.

Towards Entrepreneurial University



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Our universities have been mostly education and research oriented universities and in recent years, it has been tried to move towards entrepreneurial universities with the establishment of centers such as incubation centers, innovation centers, entrepreneurship centers, science and technology parks, inside the universities. In this process, efforts have been made to have a further link

between RD parts of industry and universities.

Researches in UT are preformed individually and collectively commissioned by industry or public-private organizations by the students under the supervision of professors.

Using the National & International Capacity

There are many supportive programs by the government, *Ministry of Science, Research and Technology* & private institutions as well on supporting the researches. UT tries to use these capacities at national and international levels and to encourage the necessity of the culture of using the knowledge-based thoughts in line with solving the problems of the country.

Since 1985, medical faculties have been detached from UT and have been reestablished as *Tehran University of*

Medical Sciences which is affiliated to the Ministry of Health and Medical Education. Due to shared campus and missions, both sides have signed MoU which allows each university to sign academic agreements representing the other side.



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Reaching the Global Standard



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In recent years, the name of our universities including UT has been put forth in world rankings. Our universities are planning to attract more foreign students.

The scientific journals in our country have researched to world standards or are in progress. In the last year, a great number of journals have been indexed by Thomson Reuters and Scopus and this signs an international belief for the

emergence of standard scientific journals in our country.

Inviting Iranian scholars to present speech at world events is increasing. The name of some of the Iranians is seen in multi-author papers and research groups in international research projects.

Reaching the Global Standard



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All these cases have happened in recent two decades and this indicates scientific and research dynamisms and joy of universities in international scenes. The world is believing our universities and we all should provide necessary bed grounds for the scientific interaction and accepting foreign students and

researchers. Despite the budget problems and imposed sanction, our researchers and academic community have played valuable roles.



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Iran & Germany Academic Collaborations

History



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- German and Iran modern relationship dates back the 19th century.
- It is also worth mentioning Goethe's dedication of his West-östlicher Divan (West-Eastern Divan) to Iranian poet Hafez in 1819
- During the establishment of Iran's Dar-al-Fonoon, the forerunner to the University of Tehran, 160 years ago, the then prime minister Amir Kabir preferred the hiring of German teachers.



Academic Collaborations



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- UT has signed MOUs with more than **20** German universities.
- We have two direct department:
 1. German Language
 2. German Studies.
- There are several common projects between faculty members of the University of Tehran and German universities through individual endeavors and also through various programs such as *DAAD* and *Erasmus Mundus*.

select number of international programs of University of Tehran via the framework of joint programs or exchange of knowledge. DAAD has been supportive of a group of UT programs in particular the exchange of professors and students and it is believed that **there are numerous areas in which the University of Tehran & German universities could have long lasting and uninterrupted bilateral ties.**

- German universities have supported a

Our Partner Universities in Germany

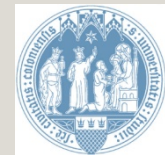


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UNIKASSEL
VERSITÄT



Already Established...

- Cooperation with DAAD on Iran-Iraq universities programs
- Granting mutual scholarship by University of Marburg and UT
- Facility Management M.Sc. degree program with Karlsruhe Institute of Technology
- Joint cooperation with The Freie Universität Berlin on environmental and economic aspects of the Caspian Sea
- Exchange of staff with the Free University of Berlin within Erasmus Mundus projects
- Holding photo exhibition on the anniversary of German unification
- MoU signed between Dekhoda Encyclopedia Institute with University of Hamburg on exchange of students for Persian Language
- Holding photo exhibition on Cold War at Central Library and Documentation Center



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Already Established...



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- Receiving students from Germany within The International Association for the Study of Traditional Environments (IASTE) program (19 students)
- Receiving students of Iranian studies from Koln university and Bamberg University
- Receiving Prof. Waibel, from DAAD to represent DAAD at UT and teach
- A visit made by Dr. Margret Winter Mantel, President of DAAD to UT
- Lecture by H.E. Frank-Walter Steinmeier, Foreign Minister of Germany at UT
- Visit of 30 researcher and professors from Germany to cooperate with UT in different faculties
- German students studying at UT leading to degree (5)
- A great number of Master's & Ph.D. students from different universities in Germany have conducted short term research in Iran (such as Ludwig-Maximilian Univ. of Munich, Humboldt, etc)

Already Established...



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- German language and literature is taught at UT
- Many German professors have come to UT within the DAAD projects
- Faculty of Entrepreneurship has signed MoU with Technische Universität Braunschweig recently.
- UT president visited Dresden University, signed MoU and cooperation to use the lab facilities has started
- UT president visited Leipzig University and agreed to cooperate on human sciences and digitalization of historical Islamic documents

Suggested Areas of Cooperation

- There is a gap in practical skills on some fields. So the German experiences on vocational training as a supplementary and essential course can be very effective.
- Germany can equip some of the laboratories of UT within the framework of public-private-partnership scheme.
- UT has an experience of working with some ministries such as petroleum, energy, or industries such as Iran Khodro (car industry). Germany can help the UT with sharing experience on this area.
- UT intends to promote its international programs and education and exchange of qualified students can be very useful.
- In the Development Plan, UT intends to allocate the vicinity and surrounding area of the main campus to knowledge-based companies, and as the rules of free trade zone will prevail there, so Germany companies can open a branch there or invest in the companies.



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Suggested Areas of Cooperation

- Germany can help UT in expanding the green and smart university.
- DFG, The Max Planck Society and similar foundations can invest in science and technology at UT and help with the conversion of idea into product.
- German companies can give technical advice to UT Science and Technology Park.
- Research foundations in Germany can give a special quota for cooperation with UT.
- Research institutions in Germany can help UT to establish joint research institutions.
- Joint venture investment on research projects is of great significance.
- Holding joint degree programs or dual degrees are very significant in learning about both societies and training skilled labor force.



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