

East China University of Technology

Master's and PhD Program for IAEA

I. Overview of ECUT - IAEA Program

The program is a high degree academic education program jointly organized by East China University of Technology (ECUT) and the International Atomic Energy Agency (IAEA) in a cost-sharing manner.

The program is meant to meet the needs of the member states of the IAEA to educate professionals in the fields of nuclear technology application, uranium mining and metallurgy, nuclear safety, radiation protection, and nuclear waste disposal. For master's or doctoral degree candidates, combined with the traditional strengths of the ECUT's characteristic disciplines, the project focuses on teaching nuclear geology technology and culture including uranium metallogenic theory and metallogenic prediction models, nuclear resource exploration methods and technologies, uranium mining environmental standards, nuclear waste treatment and geological disposal methods, etc. The goal of the project is to cultivate the future managers, leaders and decision-makers in the nuclear energy sector.

Through the recommendation of the IAEA, the ECUT recruits 5-10 candidates every year who work in nuclear energy or related fields, show interest in studying scientific uranium mining and metallurgy technology, nuclear safety and radiation protection technology and aim at maintaining global security and promoting the establishment of a Community of Shared Future for Mankind.

II. Brief Introduction to ECUT

The ECUT is a comprehensive university jointly established by the Jiangxi Government and the China Atomic Energy Association (CAEA), the Ministry of Natural Resource (MNR), and the China National Nuclear Corporation (CNNC). It focuses on science and technology

education, while also covering disciplines such as economics, management, humanities, law, education, and arts. Disciplines such as Chemistry, Engineering, and Earth Science at the ECUT are ranked in the top 1% globally according to the ESI (Essential Science Indicators) ranking. The ECUT has established more than 30 high-level scientific research platforms, including national key laboratories, international joint research centers, and the Reference Laboratory of the IAEA. It undertakes international scientific and technological cooperation projects, international conferences, and talent development tasks. It has conducted teacher training and exchange student programs with universities and research institutes in the United States, Germany, Ireland, Australia, Czech Republic, Hungary, Poland, and other countries. Every year the ECUT - IAEA admits 5-10 applicants with outstanding academics and global vision in of Nuclear Science, Earth Science and relative fields, who are willing to further their studies in China and to make contributions to the cooperation between China and their motherlands.

For more details, please visit: <http://www.ecut.eud.cn>

III. Brief Introduction to IAEA

The IAEA is the world's central intergovernmental forum for scientific and technical cooperation in the nuclear field. As the world's "Atoms for Peace and Development" organization within the United Nations family, it works for the safe, secure and peaceful uses of nuclear science and technology, contributing to international peace and security and the United Nations' Sustainable Development Goals.

The objectives of the IAEA's dual mission – to promote and control the Atom – are defined in Article II of the IAEA Statute. "The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose."

The IAEA has 178 Member States and is governed by Board of Governors and General

Conference. The IAEA is headquartered in Vienna, Austria. and has two regional offices located in Toronto, Canada and Tokyo, Japan, as well as two liaison offices in New York City, United States of America and Geneva, Switzerland. The Agency runs laboratories specialized in nuclear technology in Vienna and Seibersdorf, Austria, and, in Monaco.

For more details, please visit: <https://www.iaea.org/about/overview>

IV. ECUT - IAEA Program Features

- A 3-year academic master’s degree program (English as Media of Instruction) (EMI)
- A 4-year academic doctoral degree program (EMI)
- Co-supported by East China University of Technology (ECUT) and the International Atomic Energy Agency (IAEA)
- Full Scholarship sponsored by the ECUT and the IAEA (covering tuition, accommodation, living expenses, insurance fee, resident permit, medical examination, and miscellaneous)
- Unique Inter-cultural exposure and experience in China and collaboration with ECUT-IAEA,
- Annual intake: 5-10

V. ECUT - IAEA Program

Program Categories	Field	Duration
Doctoral Program	Geological Resource & Engineering	4 years
	Nuclear Science & Technology	
Masters Program	Geological Resource & Engineering	3 years

	Chemistry	
	Environmental Science and Engineering	

※ The duration of the Scholarship will be defined upon the student's admission to the university and will not be extended in principle.

VI. Curricula

Since the Ministry of Education of China requires universities to manage international student's education accordingly, the curriculum system is divided into two categories: degree courses and non-degree courses, including commonly required courses, professional basic courses, professional compulsory courses, professional elective courses, supplementary courses, and self-study courses. In addition, postgraduates are required to invest some time in the front line of scientific research and production to gain practical experience and participate in national or international academic conferences to present their own thesis or give lectures.

For specific information please visit: <https://eng.ecut.edu.cn/9374/list.htm> (Master's) ;
<https://eng.ecut.edu.cn/9375/list.htm> (PhD)

Application for ECUT - IAEA Program

Eligibility

- The applicants should be citizens of non-Chinese nationality in good health, from emerging nuclear power countries.
- The scholarships are only available to the qualified applicants recommended by the IAEA.
- The applicants should have the knowledge of Mathematics and Physics, and excellent ability in scientific research.

- The applicants should have good English-proficiency in writing, reading and communication.
- Educational background requirement:
 - The applicants for master's degree program should hold a bachelor's degree;
 - The applicants for doctoral degree program should hold a master's degree.

Application Time

From January 1, 2024, to March 31, 2024.

Application Documents

The applicants must fill in and provide the documents truly and correctly.

Applicants can apply and submit the application materials through Online Application System (<http://202.101.245.195:2000>, Account: 12252265@qq.com, code: Ecut123456@) and send a copy of the application materials to lzhou@ecut.edu.cn. The application materials are as follows:

(1) The highest official diploma (notarized photocopy) of Bachelor program/ Master program.

(2) Transcripts (notarized photocopies in English or Chinese). The applicants for Doctoral degree program are required to submit both transcripts of Bachelor and Master Programs.

(3) Study/ Research Plan.

(4) Copy of Passport Information Page.

(5) Photocopy of Foreigner Physical Examination Form and copies of blood test reports.

(6) Recommendation Letters. The applicants should submit two recommendation letters by professors or associate professors in English or Chinese with signatures.

(7) English-proficiency Certificate. An applicant, whose native language is not English, should submit an English-proficiency certificate, with a score of at least 75 on the TOEFL

Internet-based exam or 5.5 on the IELTS, or English proficiency certificate with equivalent level from home university.

(8) Non-criminal Certificate (notarized photocopies in English or Chinese).

East China University of Technology will check the admission qualification, materials and professional level of the applicants, and send the approved list to the IAEA who will determine the name-list of funding. International School of East China University of Technology will issue the admission notice, handle relevant recruitment procedures, and mail JW202 form to applicants themselves.

NOTE:

- All the application documents will not be returned whether the application is accepted or not.
- If the qualifications or application documents of the applicants cannot meet the requirements are deemed invalid and not accepted.
- The applicants shall be required to inform timely if documents cannot be submitted on time for some reason.
- The university reserves the right to suspend the scholarship upon discovering that there is any inaccurate information or false documents found in the application documents provided by the applicants.
- The applicants who do not register before September 30th are regarded as giving up the scholarship.

Contact Us

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Geological Resource & Engineering (Doctoral Program)

The discipline is originated from the earliest undergraduate majors founded in 1956 in Radioactive Geological Survey and Exploration, Radioactive Geophysics Exploration, and Radioactive Hydrogeology, and also are key disciplines of the Ministry of Nuclear Industry, Technology and Industry for National Defense and key disciplines of Jiangxi province, national defense characteristics disciplines, Jiangxi province first-class disciplines. In 2012, it was approved to serve the national special needs doctoral talents training program, and in 2014, it was approved to build post-doctoral research station. In 2021, it has been approved to award doctoral degree in first-level disciplines, covering 4 second-level disciplines, namely Mineral Prospecting and Exploration, Geophysics Exploration, Hydrogeology and Engineering Geology, and Earth Information Technology. The discipline focuses on the strategic needs of China's nuclear power development as well as the needs of local economic and social development. It focuses on the exploration and development of uranium and Non-ferrous metal resources, and thus four stable research directions have been formed, namely Mineral Survey and Exploration, Exploration Geophysics, Hydrogeology and Engineering Geology, and Geo-information Technology, in the fields of uranium metallogenic theory and exploration technology, 3D geological modeling, and microbial leaching of uranium, which has constructed the most unique scientific and technological innovation and personnel training system in China. It has teaching and research platforms such as the State Key Laboratory of Nuclear Resources and Environment, the National Defense Key Laboratory of Radioactive Geology and Exploration Technology, the International Atomic Energy Agency Uranium Geology Training Center, and the State-level Experimental Teaching and Demonstration Center of Radioactive Geology. Besides, the discipline has been equipped with National Defense Science and Technology Innovation Team, Jiangxi Province Science and Technology Innovation Team and Teaching Team. Two majors of Resource Exploration

Engineering, Exploration Technology and Engineering with the discipline have passed the International Engineering Education Certification and have been approved as a national and provincial first-class professional construction major.

Nuclear Science & Technology (Doctoral Program)

The discipline began in 1956 as an undergraduate major in Radioactive Geophysics Exploration, Radioactive Rock and Mineral Analysis, and started in 1993 to enroll postgraduate students in Nuclear Technology and Applications, relying on the discipline of Radioactive Geology. It was approved to grant master's degree in Nuclear Technology and Application in 2000, award master's degree in first-level disciplines in Nuclear Science and Technology in 2010, and grant Doctor's degree in first-level disciplines in Nuclear Science and Technology in 2021, starting to enroll the doctoral postgraduate students in 2022. Based on the nuclear energy industry, the discipline has developed three stable research orientations, namely, Nuclear Technology and Applications, Radiation Protection and Environmental Protection, and Nuclear Fuel Cycle and Materials. The East China University of Technology has strong disciplinary features in fields of deep uranium exploration and nuclear technology exploration, nuclear electronics and radiation detection technology, high-level radioactive waste geological disposal, and radionuclide in the environment, among which uranium mine logging and quantitative methods, small radon chamber development and atmospheric radon measurement, has filled the gaps in China, and thus making East China University of Technology one of leading research institutions in China for high-level radioactive waste clay rock geological disposal research.

Geological Resource & Engineering (Master's Program)

The discipline is originated from the earliest specialty of Radioactive Geology and Exploration in China, known as "The Cradle of Nuclear Geology Talents in China" and "The

Precious Wealth of Atomic Energy in the World", and has trained a large number of talents in fields of uranium geological. The discipline has formed five research orientations around uranium resources exploration and development, namely, "Mineral Survey and Exploration", "Exploration Geophysics", "Earth Information Technology", "Geological Engineering" and "Tourism Geoscience and Planning Engineering", with its distinct characteristics of nuclear geology. It has such scientific research and teaching platforms as State Key Laboratory of Nuclear Resources and Environment, the National Defense Key Laboratory of Radioactive Geology and Exploration Technology, the Key Laboratory of Digital Territory of Jiangxi Province, and Uranium Geology Training Center of International Atomic Energy Agency (IAEA), National Experimental Teaching Demonstration Center of Radioactive Geology.

The discipline mainly studies the geological background, metallogenic conditions, geological characteristics and metallogenic mechanism of uranium and radioactive minerals, and thus establishes metallogenic model by the exploration to the regularity of spatial distribution and temporal evolution of uranium and radioactive minerals; establishes the effective prospecting and exploration model by researches on the scientific and effective theory, method and technology of mineral prediction, exploration and evaluation; explores technical and theoretical knowledge of 3D geological modeling, geodata information visualization, etc. Besides, the discipline studies geological engineering problems in the fields of hydrogeology and engineering geology, including the evaluation of hydrogeological and engineering geological conditions for mining, the research and development of key technologies for uranium processing and metallurgy, and the site selection and evaluation of high-level radioactive waste repository.

Environmental Science & Engineering (Master's Program)

The discipline was founded in 1998 with the Environmental Monitoring of Environmental Engineering, based on the majors of Radiation Science and Applied Chemistry (Environmental Chemistry), which have been granted Master's Degree in the

second-level disciplines respectively in 2004 and 2006. The discipline has also been awarded Master's degree in the first-level disciplines in Environmental Science and engineering in 2010, and thus the specialty of Environmental Engineering is characteristic specialty and brand specialty of Jiangxi province, with its distinct and promising researches on environmental treatment and restoration, mining and metallurgical environmental biotechnology, environmental purification materials, radionuclide transfer and transformation. The research orientations in The discipline mainly involve the fields of environmental pollution and remediation and radioactive contamination and prevention. In the field of environmental functional materials, new theoretical models and technologies for efficient removal of environmental pollutants (including radionuclide), such as photocatalysts, magnetic materials and electrochemical materials, are studied. In fields of soil pollution and remediation, the transport and transformation of radionuclide, heavy metals and organic pollutants in soil and their environmental risks are studied to develop a new model for efficient remediation of soil pollution. Besides, based on the basic and applied research of the new theory and equipment of bio-metallurgy, the discipline aims also to build up the acidophilic microbial species library and enrich the research methods of extreme acidophilic Microbial ecology, develop a green recovery process suitable for uranium, copper mine tailings and waste rock containing uranium.

Chemistry (Master's Program)

The discipline was founded in 1959, and is now the first-class discipline in Jiangxi province, with ESI ranking the top 1% of disciplines in the world, and five secondary disciplines, named Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Physical Chemistry and Macromolecular Chemistry and Physics. It has the Department of Applied Chemistry under the College of Chemical Biology and Materials Science, the Jiangxi Key Laboratory of Mass Spectrometry Science and Instrument, and the Jiangxi Province's Center for Analysis and Testing for its researches and teachings. It also has two provincial

innovation teams named Mass Spectrometry Science and Instruments Team, Nuclear Chemistry and Nuclear Fuel Technology Team. In recent years, the discipline has undertaken more than 200 research projects at the provincial or ministerial level and above, including major equipment projects of the Ministry of Science and Technology, projects funded by the National Natural Science Foundation of China, projects funded by the National Defense Administration of Science and industry, projects funded by the Jiangxi Provincial Natural Science Foundation of China, and projects funded by the Jiangxi Provincial University Science and Technology Landing Program, with the total expenditure close to 100 million yuan, and it has won 4 first-class prizes, 5 second-and third-class Prizes in Natural Science of Jiangxi province. Besides, The discipline aims at the major scientific problems and development needs of new and emerging national strategic industries such as new materials and new energy, and a high-level research platform has been set up in the fields of mass spectrometry instrument development, organometallic framework materials, radionuclide functional materials, green synthesis methods and processes, green energy chemistry, etc. It also possesses the first scientific research base (namely "111" Project in China), the International Joint Research Center of Mass Spectrometry Science and Instrument, the Key Laboratory of Jiangxi Province, and the Basic Experimental Teaching Demonstration Center of Jiangxi Province.