What is happening in the world now...

Economy, Population and Natural Resources

By the year 2050, the world population is expected to be more than 9 billion, compared to the current population of 6.7 billion.

The economic and population growth in newly industrialized countries such as BRICs has been increasing the demand for resources such as oil, natural gas, rare metals, and more over, food and so on.

The world might be only one step away from a reality of intense conflicts over available natural resources. In addition, here, the sufferers are the poor.

Global Warming, Energy and CO₂

The earth is experiencing various adverse effects due to climate change.

In the prevention of the worsening effects of global warming, all available systems and technologies need to be applied. For instance, the introduction of effective policies such as emission trading and clean development mechanisms, and technology development for green energy utilization and energy-efficient technology.

On the other hand, in developing countries, energy consumption is increasing rapidly along with economic growth. There is a need for societies to decrease carbon emissions in 50 to 100 years time.

Urbanization, Water and Waste

Sixty percent of the world population is expected to live in cities by 2030. The demand for water in cities will increase rapidly, and the pollution of rivers, lakes, and the sea from wastewater will be more serious.

An increase of waste generated from cities contributes to substantial impacts on public health and the destruction of nature.

Moreover, we also face the risks of being affected by sea level rise and drought due to global warming.

It is time to tackle the water resource crisis and the challenge to recycle and conserve environmental resources.

Biodiversity

Biodiversity is being lost at an alarming rate. Many ecosystems, species, and genetic resources, as economic values of such resources are recognized.

An overall approach, such as inter-linkage between biodiversity conservation and climate change and water resources management, is needed.
Developing human resources in solving environmental problems

Global Environmental Leaders Program

Nagoya University has been conducting the Nagoya University Global Environmental Leaders Program (NUGELP) since 2004 with the support of the Special Coordination Funds for Promoting Science and Technology by MEXT, the Ministry of Education, Culture, Sports, Science and Technology. This program is to foster future environmental leaders who can propose concrete solutions to various environmental problems around the world.

We look forward to motivated participants from abroad especially from Asia and Africa besides Japanese students in our future-focused program.

Unique education program to develop global environmental leaders

- **Approach to problem solution**

  Through interdisciplinary education, students will be able to understand issues, acquire technological know-how, and design policies and institutions.

- **Education through cross-faculty partnership**

  Students will enroll in lectures and seminars provided by the Graduate School of Environmental Studies and the Graduate School of Engineering. Students can also take related lectures offered at the Graduate School of Biocultural Sciences, the Graduate School of International Development, etc. according to their interests.

- **Networking with external organizations**

  Through networking and coordinating with local companies, NPOs, overseas universities and international organizations, Global Research Internship will be provided. Students can acquire practical know-how as well as more comprehensive learning.

- **Developing international human resources**

  Lectures and seminars are provided in English. The international and interactive program allows both international and Japanese students to improve their communication skills and global perspective.

Program Eligibility

For the Master’s course and the Doctoral course, students of the Graduate School of Environmental Studies and of the Department of Civil Engineering in the Graduate School of Engineering are eligible to apply for this program.

Degree

Students who complete the program will acquire a prescribed degree, Doctor/Master of Environmental Studies or Doctor/Master of Engineering. In addition, a special certificate will be awarded upon acquiring credits in courses specified by NUGELP and composing a Master’s thesis in English.

Curriculum at a Glance

Master’s Course

- **Year One**
  - Expanding one’s knowledge of selected study area
    - Students will enroll in educational programs (lectures, seminars, etc.) provided by the Department of Environmental Engineering and Architecture (the Graduate School of Environmental Studies) and the Department of Civil Engineering (the Graduate School of Engineering). Students have the option to take related lectures offered at the Graduate School of Biocultural Sciences, the Graduate School of International Development, etc.
    - Lectures are also provided through active contribution by prominent external practitioners from companies and government bodies in the Nagoya-Osaka Region.

- **Year Two**
  - Global Research Internship at companies, local governments, or international organizations in order to obtain further knowledge and practical experience in the selected study area
    - Master’s Thesis
      - In addition to lectures and seminars, students shall work on their master’s thesis, which will be dedicated to solving present global environmental problems. Data collection and analysis through domestic and overseas field studies will be an important process of composing the master’s thesis.

Study Tour

Students can participate in a domestic tour (two days and one night) and an overseas tour (about a week).

Curriculum Model

A comprehensive set of lectures, seminars, and internships is provided so that students can acquire deep understanding of scientific mechanism of environmental problems, policy measures, management technologies, interdependence of environment and development, etc. It is possible to meet the requirement of 30 credits for the master’s degree by taking courses offered in English.

Graduate School of Environmental Studies

- Climate Change, Waste and Waste Management and other global challenges
  - Low Carbon Cities Studies
  - Climate Change Policies
  - Waste and Waste Management Policies
  - Waste and Waste Engineering

Graduate School of Civil Engineering

- Environmental Industry Systems
  - Sustainability and Environmental Studies
  - Spatial Development and Environment
  - Environmental Systems Analysis and Planning
  - Transportation Systems Analysis
  - Environmental Communication and Environmental Issues
  - Future in Civil Engineering
  - Civil Engineering and Public Policies for Developing Countries
  - Advanced Urban Engineering and Management

Seminars

Global Research Internship

Doctoral Course

Doctoral students will be able to cultivate more professional and global views benefiting from the strength of the Integral Environmental Studies Course in the Graduate School of Environmental Studies.
Through University-Wide Support and Regional Partnerships
Promotion of the Program

Nagoya University Center for Global Environmental Leaders
Nagoya University established the Nagoya University Center for Global Environmental Leaders in order to promote the development of environmental specialists who will lead environmental policy and measures in the coming decades. Through the cooperation and coordination of university-wide faculties, and also with the participation of external specialists, a comprehensive curriculum for environmental human resource development will be established to promote interdisciplinary education.

Besides the program teaching staff, faculty members mainly from the Graduate School of Environmental Studies and the Graduate School of Engineering are involved in the educational program.

Partnership among academic, industrial and governmental sectors
In order to promote the development of global environmental leaders, cooperation among academic, industrial and governmental sectors will be established. Lectures based on practical experiences will be provided by specialists from companies, government bodies, etc. Through internships at cooperating organizations, students can also learn the most advanced environmental technologies and policies available.

Center and Program System Structure

President of Nagoya University

Nagoya University Center for Global Environmental Leaders
Director: Vice-President (Education)

Nagoya University Global Environmental Leaders Program

Continuous Development of Environmental Leaders
Promotion of Interdisciplinary Education

Academic-Industry-Government Collaboration

Knowledge and Experiences Accumulated in the Nagoya-Chubu Region
- Accumulation of Environmental and Energy Efficient Technologies
- Experience of VideoScope between Business and Environment
- Experience in Implementing Advanced Technology at Local Governments
- Successful Implementation of Participatory Environmental Policies such as Waste Reduction
- Education for Sustainable Development (Chubu-based ESD)

The faculty

Graduate School of Environmental Studies
Department of Environmental Engineering and Architecture (Spatial Planning and Environment Course)

- Hiroshi Tanikawa Professor Environmental Systems Engineering
- Hideki Nakamura Professor Transportation Engineering
- Hironao Shikazawa Associate Professor Environmental Economics
- Takayuki Morikawa Professor Environmental Studies
- Yoshitaka Hayashi Professor Sustainable Transport and Spatial Development, Technology Transfer of Mitigation and Adaptation
- Toshio Ishikawa Professor Sustainable Transportation and Environment
- Atsushi Inoue Professor Architectural and Urban Environmental Engineering, Computational Fluid Dynamics
- Keisuke Takahashi Professor Architectural and Urban Environmental Engineering
- Arata Kato Professor (Joint Research Institute Research, National Institute for Environmental Studies)
- Yuko Takeda Visiting Professor
- Toshiki Itoh Visiting Professor
- Masamichi Nagashima Professor International Affairs Department, Nagoya University

Graduate School of Environmental Studies
Department of Social and Human Environment

Nobuo Sugiyama Associate Professor

Graduate School of Engineering
Department of Civil Engineering

Yoshio Buij Professor Structural Engineering, Environmental Structures
- Kazuo Takashige Professor Structural Engineering, Environmental Structures
- Yoji Toda Associate Professor
- Masahiko Nakano Professor

Hikaru Nakamura Professor Structural Engineering, Environmental Structures
- Yoshitomo Noda Professor Civil Engineering
- Noriyuki Mizutani Professor Environmental Earthquake Engineering

Kazuo Kitanaka Associate Professor
- Kenjiro Nakashima Associate Professor
- Takeshi Hanada Associate Professor
- Satoru Yamao Associate Professor

Shinichiro Nakamura Lecturer
- Yoshitomo Yamamoto Associate Professor

- Academia-Industry-Government Collaboration
- Knowledge and Experiences Accumulated in the Nagoya-Chubu Region