Application of the Result of Evaluation in College of Technology

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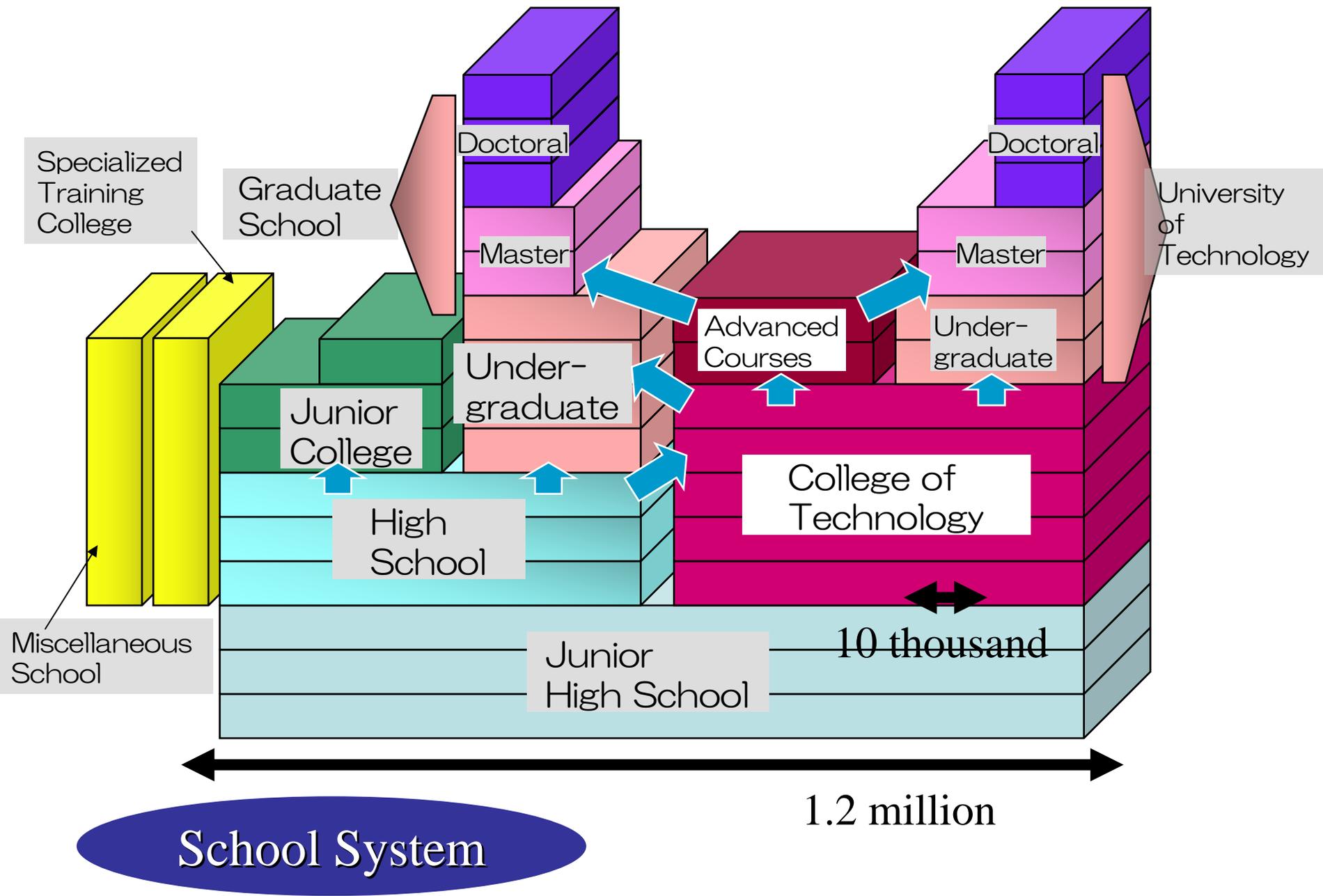
Institute of National Colleges of Technology, Japan

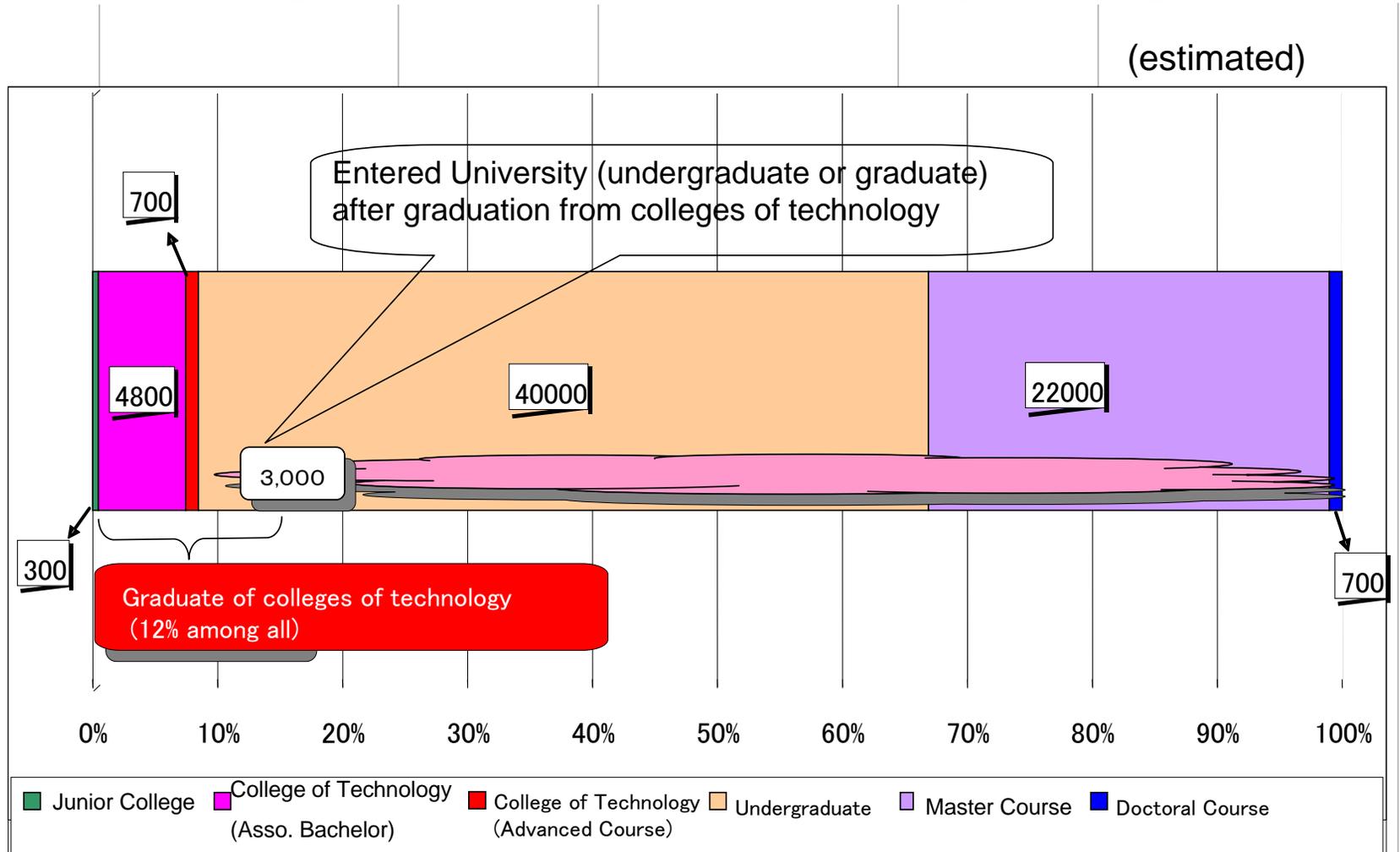Ⅰ　Features of colleges of technology as higher education institutions

Ⅱ　Evaluation in national colleges of technology and the application of the result

Establishment of Colleges of Technology

➢   Established in 1960's by strong request from the industrial sector to foster engineers who develop Japanese high economic growth (economic growth rate of Japan in 1960 was 12%).

➢   Designed as practical 5-year consistent higher education institutions which start educating from just the graduation of junior high school.

➢   Number of colleges: 55 National, 6 Municipal, 3 Private
In 2004, national colleges reformed as one national corporation; the Institute of National Colleges of Technology has established to manage the reformed national college.

➢   Approximately 300 thousands have graduated so far; graduates contribute mainly in the industrial sector, as engineers, researchers, managers, etc.

Specialized
Training
College

Graduate
School

Doctoral

Doctoral

University
of
Technology

Master

Master

Miscellaneous
School

Junior
College

Under-
graduate

Advanced
Courses

Under-
graduate

High
School

College of
Technology

Junior
High School

10 thousand

1.2 million

School System

Ratio of graduates from colleges of technology among new engineers graduate from schools of engineering in 2005

(estimated)

Entered University (undergraduate or graduate) after graduation from colleges of technology

700

4800

40000

22000

3,000

300

700

Graduate of colleges of technology
（12% among all）

0%   10%   20%   30%   40%   50%   60%   70%   80%   90%   100%

■ Junior College ■ College of Technology (Asso. Bachelor) ■ College of Technology (Advanced Course) □ Undergraduate □ Master Course ■ Doctoral Course
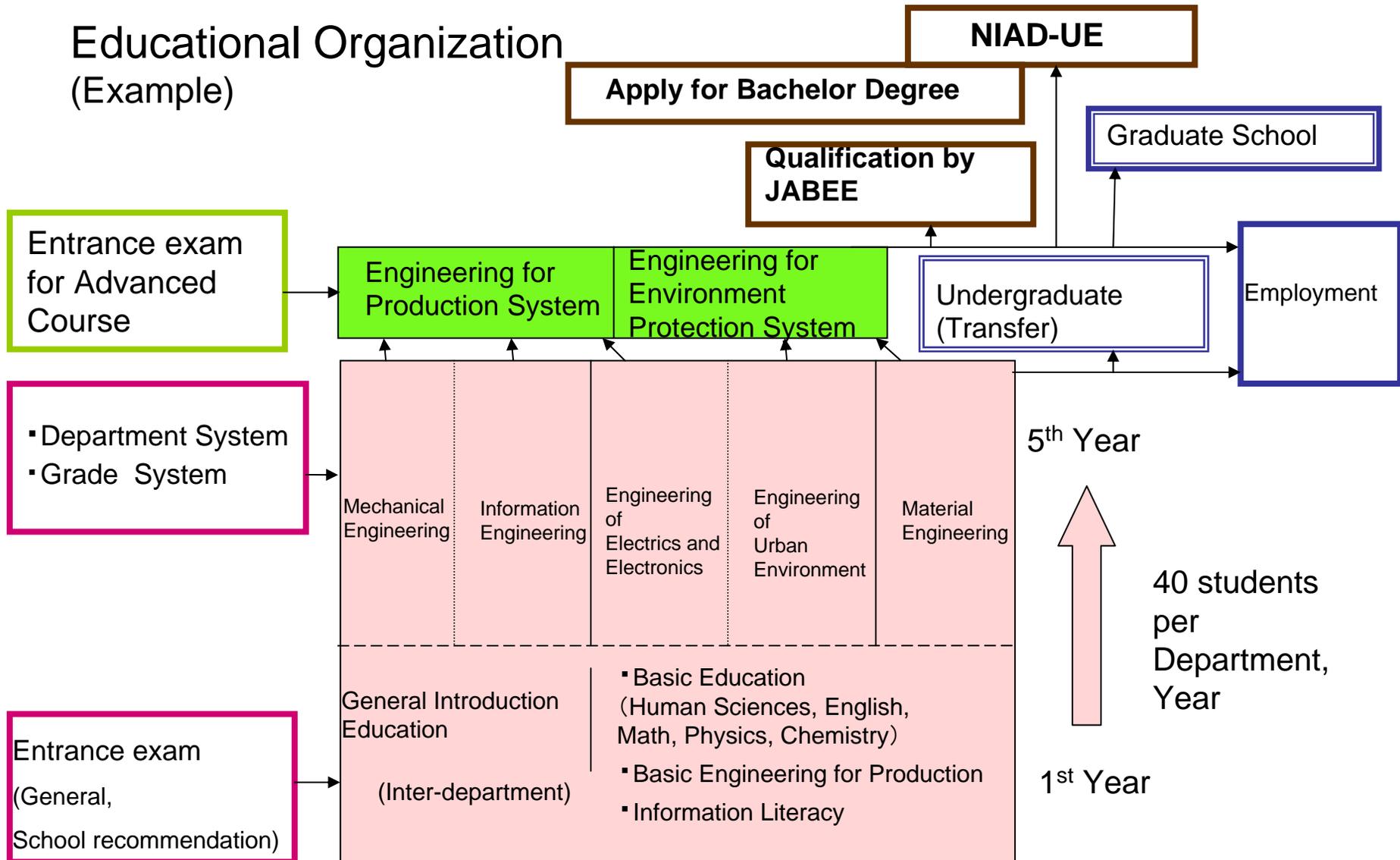
Engineers fostered in colleges of technology

Practical Engineer with high capacity who play a role in the industrial workplace consisted of interdisciplinary technological fields and develop the technology by originality and ingenuity

Each college has further concrete goals. For example:

- Engineers who follow the proper standard for engineers (such as independent acting), and have cooperativeness and leadership for group
- Engineers who have the capacity for cross-cultural understanding and communication
- Engineers who have distinguished basic achievement and special achievement (idea for production, skill for analogy, skill for structuring), and have the capacity for sustainable self-enrichment
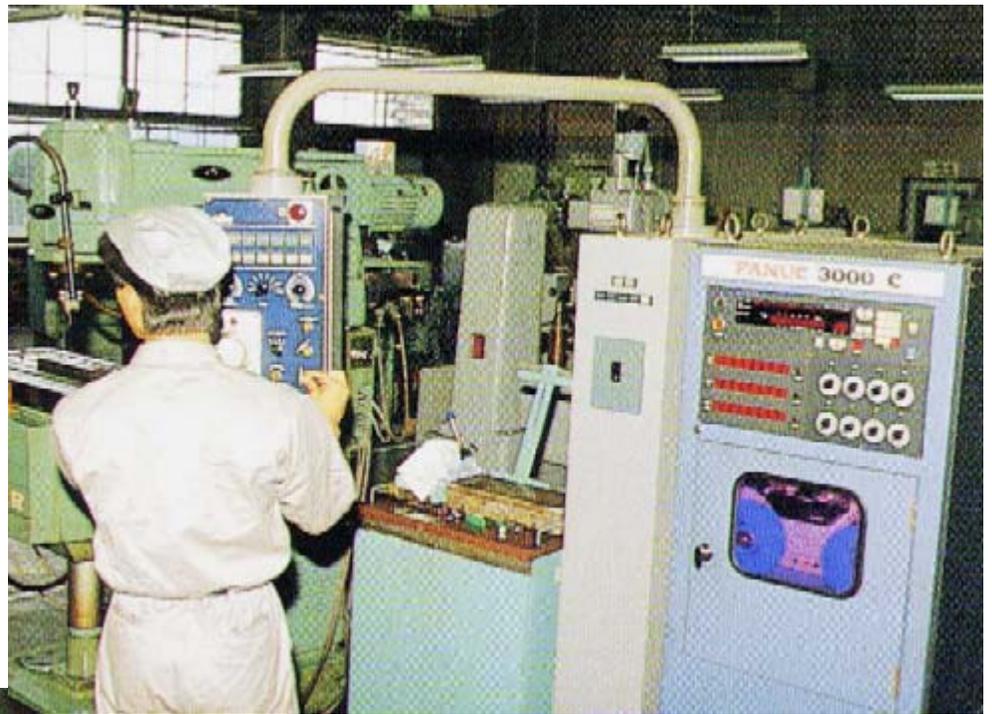
Educational Organization
(Example)

NIAD-UE

Apply for Bachelor Degree

Graduate School

Qualification by JABEE

Entrance exam for Advanced Course

Engineering for Production System	Engineering for Environment Protection System

Undergraduate (Transfer)

Employment

·Department System
·Grade System

5th Year

Mechanical Engineering	Information Engineering	Engineering of Electrics and Electronics	Engineering of Urban Environment	Material Engineering

40 students per Department, Year

General Introduction Education

(Inter-department)

·Basic Education （Human Sciences, English, Math, Physics, Chemistry）

·Basic Engineering for Production

·Information Literacy

1st Year

Entrance exam

(General,

School recommendation)

Feature of education in colleges of technology

- ✓ Engineer education of 5-year consistent from 15-year old - Curriculum carefully organized by grade, education for creativity based on the basic math, physics, etc and respected environments and exercises
- ✓ Internship by active cooperation with local industrial sector
- ✓ Living in a group in a dormitory
- ✓ Inter-college competition such as robot contest
- ✓ Ratio of job offer: 16 times of the total of graduates

  (40% of graduates enter upper school (in 2006)

Basic Engineering for Production

(Department of Mechanical Engineering)

(Tokyo National College of Engineering)
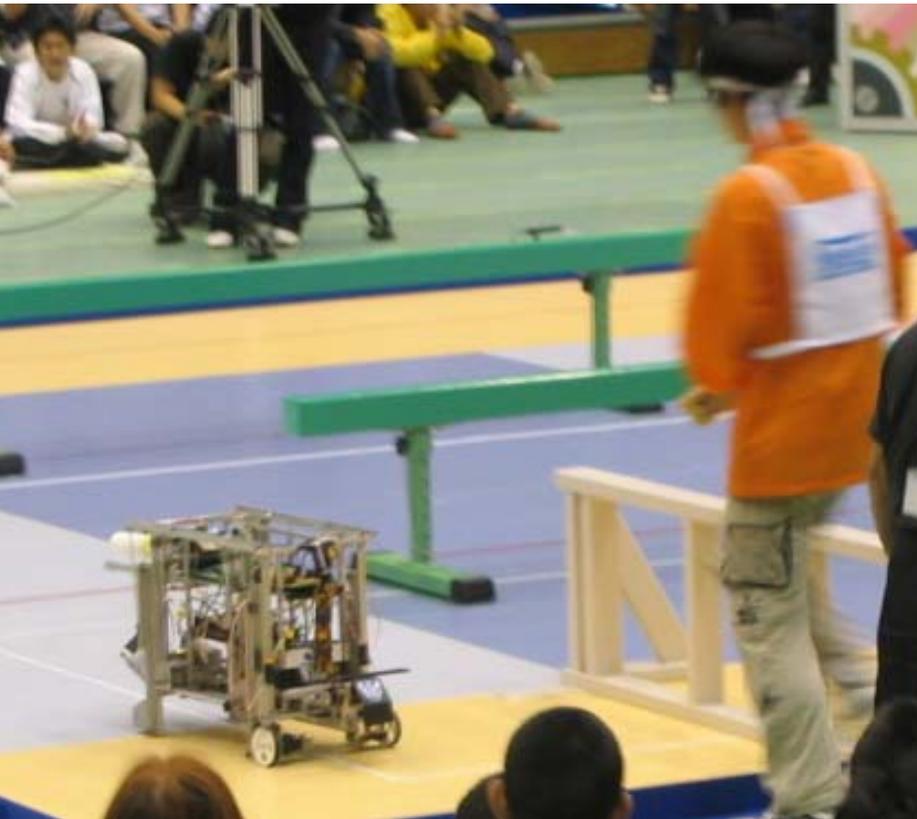
Machine Practice Workshop

Basic Engineering for Production

(Department of Electrical Engineering)

(Tokyo National College of Technology)

Basic Engineering for Production
(Department of Chemical Science
and Engineering)

(Tokyo National College of Technology)

Robot Contest of Colleges of Technology

Dormitory

(Tokyo National College of Technology)

Evaluation of colleges of technology and application of result

【Institutional evaluation for colleges of technology】

- Evaluation by NIAD-UE

- Program evaluation by JABEE (Japan Accreditation Board for Engineering Education)

- Part of the evaluation which evaluate the Institute of National Colleges of Technology

Evaluation by NIAD-UE

【Viewpoint】

To evaluate the whole activities of the college mainly focused on the educational activities for regular students

＊e.g.: admission

"An admission policy in which required student qualifications and the basic policy of applicant selection are clearly provided according to the purpose of education is made public and disseminated."

【Application of result】

☐ Through analyzing and reviewing the activities of the college, they can evaluate the adequacy of their current system and activities for achieving the goal in the viewpoint of legal standard, purpose of establishment of the college, etc.

☐ Through external evaluation, they know their strong points and weak points objectively, then they can make an improve plan and make more proper budget request to the government.

☐ All of national colleges of technology will have the evaluation in the first 3 years from the start of the new evaluation system. Through contributing the new system positively, the colleges of technology can show their attitude toward the accountability to the public.

Program evaluation by JABEE①

| Advanced course 2nd year |
| Advanced course 1st year |
| 5th year |
| 4th year |
| 3rd year |
| 2nd year |
| 1st year |

Accreditation Institution：
JABEE（Japan Accreditation Board for Engineering Education).

Since last year, JABEE is a member of Washington Accord, under which the substantial equality of programs are recognized internationally (It is organized by members from 10 countries or regions).

Objective of the Accord: Engineering program of undergraduate level. In colleges of technologies in Japan, the program from the 4th or 3rd year of Asso. Bachelor degree course to the 2nd year of Advanced course.

Program evaluation by JABEE②

【Viewpoint】

To foster independent engineers ,and to assure the quality of education by considering the field graduates will belong to and demands from students and the public (demands from employers, global recognition)

＊e.g. of standards: Recognition of effects of technology to the public and the nature ,and responsibility engineers have to the public (Ethics for engineers)

【Application of the result】

☐ Graduates who completed the accredited program are qualified to exemption of the 1st phase of the test for professional engineering by the notice by Ministry of MEXT (Education, Culture, Sports, Science and Technology); it gives the graduates motivation and proud as prospective engineers.

☐ Incentive for practical foreign language education and introductive education of ethics for engineers.

☐ Public recognition as education institution for engineers by evaluated by the same standards as other higher education institutions are evaluated.

Evaluation as a part of evaluation to the Institute of National Colleges of Technology

【Viewpoint】

　　Evaluation of mid-term plan to the Institute as an independent administrative institution

　　Achievement through 2004-2008 will be evaluated.

　　　　＊examples of annual evaluation：
　　　　　maintaining the efficiency of entrance number
　　　　　- improvement of entrance examination, advertisement to
　　　　　　prospective students

【Application of result】

☐ Through collecting and publication of the examples of practice by the Institute, each colleges know good practices of other colleges.

☐ The Institute and colleges share the roles and cooperate with each other for improvement.

☐ Appeal the strong points of colleges to the public by getting a good results of evaluation.

Intention of evaluations

〇Evaluation by NIAD-UE

⇒Assurance and improvement of proper educational organization and quality of education

〇Program evaluation by JABEE

⇒Assurance and improvement of engineer education as education for special field

〇Evaluation to the Institute of National Colleges of Technology

⇒Utilize the strong point that 55 colleges are managed by one institute

Challenges

- ✓ Preparation the database and making it common to deal with the tasks for evaluation by shorter time

- ✓ Assurance of communication and mutual recognition for keeping reliable relationship between evaluator and institution evaluated

- ✓ Active application of the result of evaluation and fostering evaluators