



environmental conservation, and natural energy utilization. To be more specific, the technology is not only deployed in hardware areas such as marine vessels, aircraft and spacecraft, automobiles, information and telecommunication equipment, and wind and ocean-current power generation, but also in software areas such as transportation and distribution systems, electronic and computer systems, systems engineering, and a wide range of other areas.

### 3. Academic Awards Policy (Goals of the Program and Policy for Awarding Degrees)

The Program of Transportation Systems aims to nurture engineers and researchers with expertise related to transportation equipment (engineering for planning, manufacturing, building, and maintaining transportation equipment and distribution systems that can coexist in harmony with the natural environment), and coexistence with the environment (engineering for planning, designing, creating and maintaining environment-related equipment and environmental systems to analyze and better understand the geospheric environment, and to reduce the impact on the environment). In addition to that, the Program of Transportation Systems trains engineers and researchers capable of taking action and showing leadership, who are able to actively discover engineering problems, explore solutions to the problems scientifically and rationally, and solve various engineering issues in an ethical and harmonious way.

H 3 ' ' ' ' ' ' ' ' ' ' 'S 'H ' education aimed at developing a broad and deep range of general knowledge, a global perspective for peace, general decision-making skills, and a well-rounded character; a specialized education designed to meet the goals listed below; and the number of credits necessary to meet the standard of the course.

Goal A: The acquisition of general knowledge in the three fields of natural science, humanities and society, and education, aimed at nurturing ethics and the ability to think about things from various perspectives.

Goal B: The acquisition and understanding of the fundamental knowledge required by engineers and researchers.

Goal C: The nurturing of expertise related to transportation equipment and coexistence with the environment, and the nurturing of the ability to apply this expertise to solving problems.

Goal D : The nurturing of the ability to create designs related to transportation equipment and coexistence with the environment, and the nurturing of the ability to run projects.

Goal E : The nurturing of communication skills and the ability to transmit information required by engineers and researchers.

### 4. Curriculum Policy (Policy for Preparing and Implementing the Curriculum )

The Program of Transportation Systems prepares and puts into practice a curriculum based on the following policy, to ensure that students are able to achieve the goals of the program. Learning achievement is evaluated by performance rating in each subject and the attainment of the goals set by the Education Program.

- In the first year, students take core subjects composed of compulsory and elective subjects. These subjects correspond to Goal A. They are composed of languages, information subjects, mathematics and science subjects, the introductory subjects of this program, and other Liberal Arts Education subjects.

- In the second year, students take compulsory subjects and elective subjects. These are composed of mathematical and dynamic systems subjects, which correspond to Goal B, and subjects related to mechanics of materials and fluid dynamics, which correspond to Goal C.

- In the third year, students take subjects that are closely related to transportation equipment and coexistence with the environment. At the same time, students cultivate highly professional knowledge and abilities through experiments, training, and subjects related to design and production projects. These are composed of subjects based on professional dynamic systems, which correspond to Goal C, and subjects based on project work, which correspond to Goals D and E.

- In the fourth year, students work on their graduation theses, making full use of the abilities gained by meeting Goals A to E in the Program of Transportation Systems. Based on the theses and presentations submitted, mastery of Goals A to E is generally evaluated.

### 5. Program Timing/Acceptance Conditions

The second semester of the second year

'J'

Before the start of the second semester of the second year. Assignment to educational programs is decided based on student request and academic results no later than the end of the first semester of the second year.

6. Qualifications to be Acquired

Type-1 High School Teaching License (Industry)

(Students must acquire the required number of credits for the Type-1 High School Teaching License (Industry), in addition to the required number of credits for this program.)

7. Class subjects and course content

\* For class subjects, see the course list table on the attached sheet.

\* For course content, see the syllabus for each fiscal year.

8. Academic Achievements

At the end of each semester, evaluation criteria are applied to each academic achievement evaluation item to

calculate the average value of the academic achievements from admission to the current semester. The average value is calculated by adding the weighted values to the numerically-converted values of their academic achievements (S = 4, A = 3, B = 2, and C = 1) in each subject being evaluated.

Evaluation of academic achievement	Converted values
S(Excellent: 90 points or higher)	4
A(Superior:80-89 points)	3
B(Good: 70-79 points)	2
C(Fair: 60-69 points)	1

Academic achievement	Evaluation criteria
Excellent	3.00~4.00
Very Good	2.00~2.99
Good	1.00~1.99

\* For the relation between evaluation item and evaluation criteria, see the attached sheet 2.

\* For the relation between evaluation item and class subjects, see the attached sheet 3.

\* For curriculum map, see the attached sheet 4.

9. Graduation Thesis (Graduation Research) (Positioning, when and how it is assigned, etc.)

○Class Goals

Students are assigned to their respective educational subjects and tutors from the Program of Transportation Systems, and choose a topic related to a specialized field. Students apply their acquired knowledge and abilities and conduct research that enables them to enhance their problem-solving abilities while trying to gain new knowledge.

Doing the above aims at cultivating the following abilities (the learning goals and corresponding evaluation items are also given):

1. Students can demonstrate scientific knowledge concerning multiple solutions to the challenges of the research. (Goal A, evaluation items: Knowledge/Understanding-1, Ability/Skills-1).
2. Students can explain knowledge and methodology that forms a basis for constituent technology related to the challenges of the research. (Goal B, evaluation items: Knowledge/Understanding-2, -3, Ability/Skills-2, -3)



Knowledge/Understanding -2, 3 Ability/Skills -2, 3), specialized knowledge and applied skills (Goal C, evaluation items: Knowledge/Understanding -4, 5, 6 Ability/Skills -4, 5, 6) design skills and the ability to get things done (Goal D, evaluation item: Overall Ability -1), communication skills and information transmitting skills (Goal E, evaluation item: Overall ability -2), all of which are obtained through taking the Program of Transportation Systems. Also, based on the thesis and presentation content, mastery of the abilities that graduates of this program must acquire is evaluated in a comprehensive manner.

#### 10. Responsibility-taking System

##### (1) PDCA Responsibility-

In order to monitor and improve this education program, an educational monitoring and improvement system has been established, as shown in the chart below, and has been in operation since 2003. This educational monitoring and improvement system is composed of two PDCA systems, the PDCA system responsible for the monitoring and improvement of each subject and its related subjects, and the PDCA system responsible for the monitoring and improvement of the entire Education Program, including the educational goals and the image of students that is presented.

Under the monitoring and improvement system for each course, each subject and its related subjects are monitored and improved in PDCA cycles as described below.

##### Plan: Preparing the Syllabus

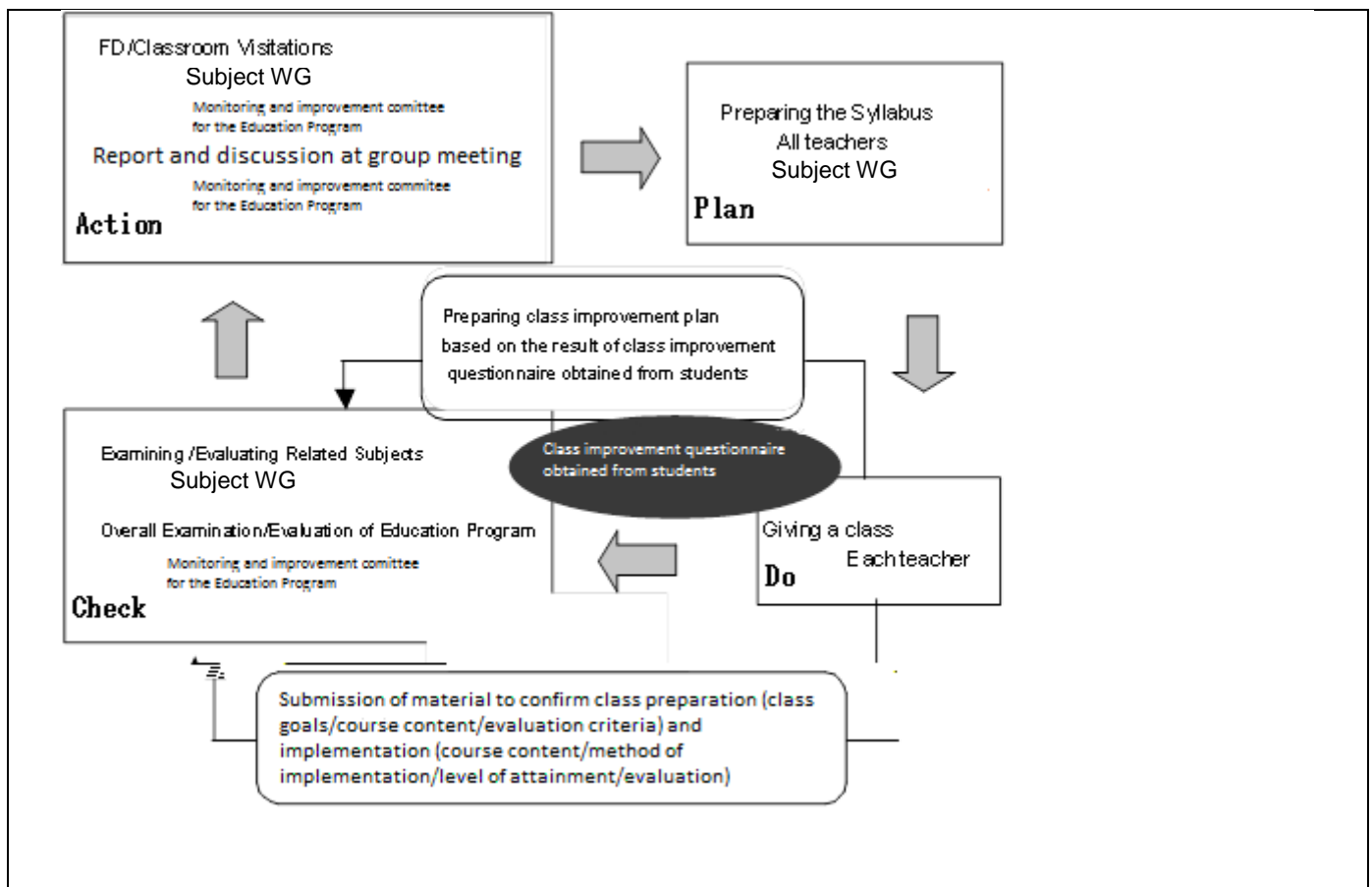
- For each subject, a WG checks the syllabus prepared by the person in charge of the subject, then either ratifies it or makes improvements.

##### Do: Giving a class

- The person in charge of the subject gives a class based on the syllabus approved by the subject WG.

##### Check: Examining and Evaluating Related Subjects, Overall Examination and Evaluation of the Education Program

- The subject WG checks if the planning and implementation of the class is appropriate, then ratifies it or makes improvements.
- The monitoring and improvement committee for the Education Program checks if the planning and implementation of the class is ap



## (2) Education Program PDCA

In the monitoring and improvement system for the Education Program, the Education Program is monitored and improved in the PDCA style described below.

**Plan:** Creating the Education Program

- The Education Program is created at by the subject WG, the monitoring and improvement committee for the Education Program, and the Educational Affairs Committee of the School of Engineering.

**Do:** Implementing the Education Program and Cooperating with Related Subjects

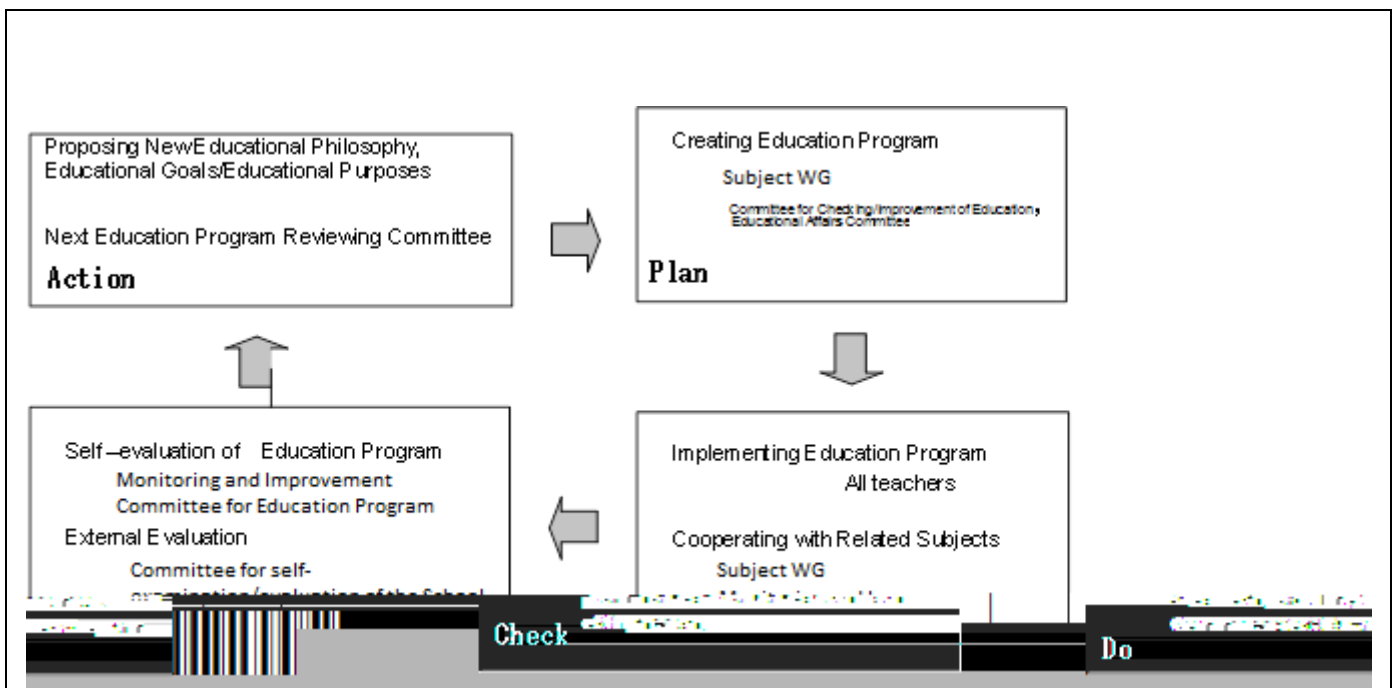
- The Education Program is implemented by each teacher, by the subject WG, and by the monitoring and improvement committee for the Education Program. At that time, cooperation is enlisted from related subjects.

**Check:** Self-examination of the Education Program and External Evaluation

- In the monitoring and improvement committee for the Education Program, problems with the program are examined based on the questionnaires obtained from graduates and students of the school for confirmation or making improvements
- In the monitoring and improvement committee for the School of Engineering, external examination and evaluation of the planning and implementation of the Education Program are made.

**Action:** Proposing New Educational Philosophy, Educational Goals/Educational Purposes

- At the next Education Program review committee, the educational philosophy and educational goals and purposes are reviewed by using the results of the above self-examination and external evaluation as reference.



### (3) Program evaluation

Under the two PDCA systems detailed above, the subject WG and monitoring and improvement committee for the Education Program carry out their checks and evaluations. The following describes the activities of each committee in detail.

#### Subject WG

All subjects provided by this Education Program are divided into several categories. A subject WG is held by the person in charge of each related subject.

In the subject WGs, class plans, achievements, and the result of classes given (based on class improvement questionnaires) are discussed.

#### Monitoring and Improvement Committee of the Education Program

While the responsibility for planning and implementing each subject, and its related subjects, lies with the above-mentioned WGs, the responsibility for identifying and solving problems with the entire Education Program rests on the monitoring and improvement committee for the Education Program. This committee is composed of directors and the persons responsible for the subject WGs. The committee checks and analyzes the activities of the subject WGs, as well as discussing problems with the entire Education Program.











A  
B  
A  
B

