

Program Title:
Civil Engineering Course
Period of Accreditation: 2007-2011
(continuous program of 2002-2006)
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*This documents includes a trial (not an official) English translation by Toru Hagiwawa of “Self-review report” for the purpose of reference by NABEEA members. The original is in Japanese.

Introduction

- A program of Civil Engineering Course has been accredited by JABEE since 2002.
- This presentation describes a part of the program with respect to the following five criteria.
- Criterion 1: Establishment and Disclosure of Learning and Educational Objectives.
- Criterion 2: Quantitative Curriculum Requirements.
- Criterion 3(2): Educational Methods.
- Criterion 5: Evaluation of Students' Level of Achievement against the Learning and Educational Objectives.
- Criterion 6: Educational Improvement.

Criterion 1: Establishment and Disclosure of Learning and Educational Objectives

A: Global perspectives and engineering ethics.

B: Skills of English language and other foreign language.

C: Knowledge of mathematics and information technology, and an ability to apply such knowledge.

D: Knowledge of natural sciences, and an ability to apply such knowledge.

E: Knowledge of structural mechanics, soil mechanics, hydraulics, planning, and traffic system engineering, and an ability to apply such knowledge.

F: An ability to solve problems through integrating various technical knowledge by collaborating with others.

Criterion 1: Establishment and Disclosure of Learning and Educational Objectives, cont.

- G: Knowledge of computer sciences and an ability to solve mathematical problems by computer sciences.
- H: An ability to become conscious of social responsibility and engineering ethics.
- I: Design abilities to explore a problem, propose an approach to solve the problem through integrated various scientific knowledge, and discuss results of the approach in terms of scientific point of view with professional people.
- J: Knowledge of engineering solutions related to national and regional issues, environmental issues and social issues.

Minimum credits assigned to each objective

- These minimum credits are criteria that the students belonged to the program must clear.
- The program mainly considers acquisition of basic knowledge as civil engineer and design ability to organize solutions to social issues.

	10 objectives of the program	Minimum credits
A	Global perspectives and engineering ethics.	10
B	Skills of language	8
C	Mathematics and information	20
D	Natural sciences	10
E	Structural mechanics, soil mechanics, hydraulics, planning, and traffic system engineering	18
F	To solve problems	2
G	Computer sciences	1
H	Engineering ethics	4
I	Design abilities	10
J	Engineering solutions	7

How do we design position of each subject within the program?

- Core members of the program (called "JABEE Committee") design how each subject is positioned within the program, and also design the educational content and methods, the achievement level of the program.
- JABEE Committee has discussions with the instructors of each subject about contents of the syllabus, for example, objective of the subject, level of the subject, evaluation process, etc.

Criterion 2: Quantitative Curriculum Requirements

- Number of credits
 - The program requires that the students must earn at least 126 credits for graduation.
 - JABEE requires that a program comprises the equivalent of four years of undergraduate study/education, and must qualify as graduates those students who have achieved a bachelor's degree after earning 124 or more credits.
- Study hours
 - The program requires that the students must have at least 2,137.5 hours.
 - JABEE requires that a program must comprise a total of at least 1,800 study hours.

Example of title of each subject per semester of each academic year assigned to the objective C defined by the program

Learning and Educational Objectives	Subject	Period of Class							
		1st grade		2nd grade		3rd grade		4th grade	
		1st	2nd.	1st	2nd.	1st	2nd.	1st	2nd.
C Knowledge of mathematics and information technology, and an ability to apply such knowledge	Linear Algebra I								
	Linear Algebra II								
	Calculus I								
	Calculus II								
	Introduction to Mathematics			*	*	*	*	*	*
	Applied Mathematics I								
	Exercise on Applied Mathematics I								
	Basic Graphic Science								
	Applied Graphic Science		*						
	Applied Mathematics II								
	Exercise on Applied Mathematics II								
	Introduction to Informatics I								
	Introduction to Informatics II		*						
	Statistics								

Learning and Educational Objectives	Subject	Period of Class							
		1st grade		2nd grade		3rd grade		4th grade	
		1st	2nd.	1st	2nd.	1st	2nd.	1st	2nd.
E Knowledge of structural mechanics, soil mechanics, hydraulics, planning, and traffic system engineering and an ability to apply such knowledge	Structural Mechanics I								
	Structural Mechanics I								
	Structural Mechanics III						*		
	Exercise on Structural Mechanics I								
	Exercise on Structural Mechanics II					*			
	Hydraulics I								
	Hydraulics II								
	Exercise of Hydraulics I								
	Exercise of Hydraulics II						*		
	Hydrology Water Resources and River Engineering					*			
	Coastal Environment						*		
	Soil Mechanics I								
	Soil Mechanics II								
	Exercise on Mechanics of Soils								
	Infrastructure Planning								
	Exercise on Infrastructure Planning								
	Urban Transportation System Planning								
Highway Engineering									

Criterion 5: Evaluation of Students' Level of Achievement against the Learning and Educational Objectives

- The syllabus of each subject is main evidence to guarantees the third party that all graduates have achieved all of the learning and educational objectives designed by the program.
- The instructors of subjects are strongly guided to keep description of the syllabus, and to record materials such as handouts, answer sheets and reports.
- The instructor evaluates student's level of achievement against the goals for each subject according to the evaluation methods and criteria described in the syllabus.

Criterion 5: Evaluation of Students' Level of Achievement against the Learning and Educational Objectives, cont.

- The program organizes an assessment committee to check performance of all of subjects based on evidences. For example, the assessment committee evaluates whether the instructor conducts class according to the syllabus or not.
- The assessment committee checks that each subject has all of materials. The instructor must submit a list shown in Table 7 and materials to the assessment committee after finishing the subject.

Checking items	Checking
Attendance note: attend or miss	Yes/No
List of handouts: text books, handouts based on Microsoft-power-point files and etc.	Yes/No
Reports: questions, sample answers, grade, reports submitted by the students, and etc.	Yes/No
Examinations: examination paper, sample answers, grade, answer sheets written by the students, and etc.	Yes/No
Grading sheet: accept, acceptance line and reject	Yes/No

Criterion 5: Evaluation of Students' Level of Achievement against the Learning and Educational Objectives, cont.

- All graduates of the program must have achieved all of the program's learning and educational objectives.
- The students can understand the achievement level easily and can decide what kind of subjects she or he should take at the coming semester according to the criteria of the program.
- At the final semester, the assessment committee confirms that total number of credits earned by each student corresponding to each objective defined by the program is over the minimum.
- Also, the assessment committee reports results of evaluations regarding each subject, and all of subjects performed correctly according to each syllabus.
- Since the program has been started in 2002, all of graduates belonged to the program achieved all of the program's learning and educational objectives.

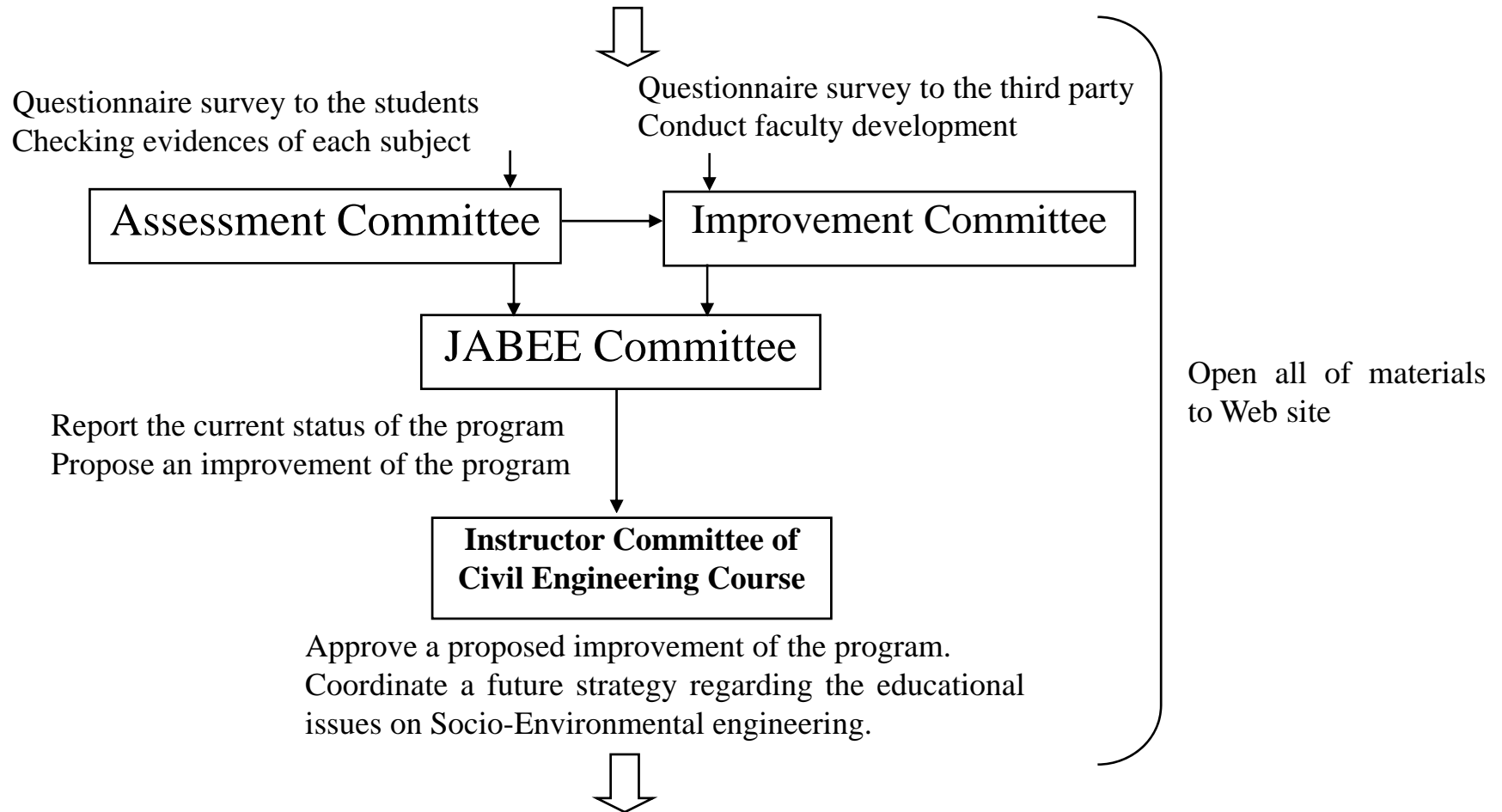
Criterion 6: Educational Improvement

- Assessment committee
 - a) Checking performance of each subject.
 - b) Questionnaire survey to the students about educational conditions, curriculum of civil engineering course, and the accredited program.
 - c) Recommendation to improve the syllabus of each subject.

- Improvement committee
 - a) Questionnaire survey to the alumni of Civil Engineering Course, professional civil engineers working in society, parents of the students, and so on.
 - b) Conduct faculty development.
 - c) Conduct improvement of objectives of the program and syllabus of each program based on evaluation results of the program according to , recommendations of the assessment committee. For example, the program has added two subjects of "Public design" and "Excise on public design" since 2005.

Criterion 6: Educational Improvement

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Thank you for your attention!!!