

Introduction about the Plan of Course System in Lectures of Japanese Geotechnical Society

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ABSTRACT: Japanese Geotechnical Society (JGS) organizes about 30 lectures (workshops) annually for college students and working engineers to encourage the spread of technologies related to geotechnical engineering. Recently, the number of participants is decreasing each year. Taking into consideration the circumstances surrounding geotechnical engineers, the Business Department of JGS has devised a drastic lecture reform plan, which is to adopt a course system as part of the lecture program reforms.

In this report, the authors introduce the plan of course system in JGS lectures.

1 INTRODUCTION

Established in 1949, Japanese Geotechnical Society (hereinafter referred to as “JGS”) aims to promote the development and advancement of geotechnical engineering and has since been specializing in the areas from basics of soil mechanics to survey, design, construction, disaster control, and environment conservation. In order to further facilitate the accumulation and exchange of enormous amount of technology, JGS holds international conferences, symposia, and research presentations, issues academic journals and other publications, and supports research activities with various awards from the Society. As of the year 2008, JGS has about 10,000 members and is one of the most active and largest societies in Japan.

With almost 60 years of history, JGS is expected to help those who are engaged in geotechnical engineering respond to the needs and trust of the society of the 21st century and be acknowledged as those who will build a higher quality of life for citizens. For the last few years, however, alienation of student members after graduation, uneven age and job distribution, and diminution of membership have cast dark clouds over the future of the Society.

JGS organizes about 30 lectures (workshops) annually for college students and working engineers to encourage the spread of technologies related to geotechnical engineering. Although the participants slightly increased this year, as fig.1 shows, the number is decreasing each year.

2 SHIFTING FROM DISSEMINATION TO CULTIVATION

Before discussing the scheme for JGS lectures, a research on the number of participants in the recent years (fig.1) was conducted, which shows the number is decreased to 53% during the years 2003 – 2005.

The board of directors determines the topics for the annual lectures (workshops), taking into account past achievements and lecture plans related to new publications to be released the next year. Past performances with the same topic, publication status of technical standards at different times, disaster

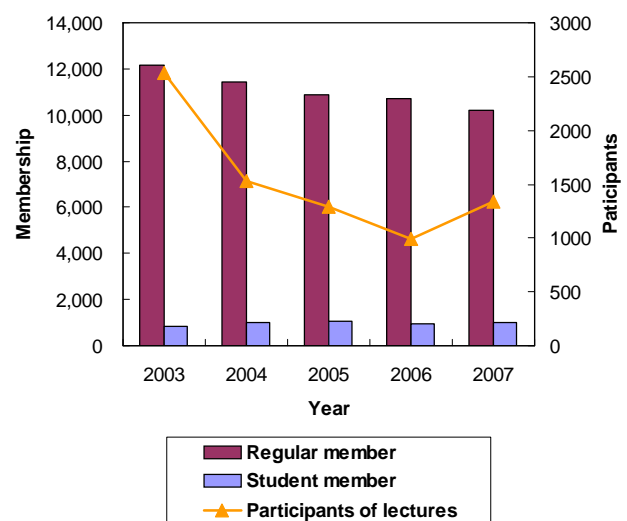


Figure 1. The number of membership and lecture of JGS (Recent 5 years)

conditions, and trends have also been factors to be considered. The original purpose of JGS lectures (workshops) seems to have been the dissemination of technology, as the name of the hosting committee implies. The lectures had sufficiently addressed the social needs of the country in times when development of social infrastructure had been the utmost mission. As fig.1 indicates, however, lectures today have not been very successful in attracting participants.

This may be largely due to the following social backgrounds. First of all, as the social infrastructure has developed and matured, the market reduction has caused intense competition among companies, forcing them to downsize employees and seek immediate gain, which leaves little room for investment in the education of young engineers. Secondly, with the advancement of geotechnical engineering, systematization of design and construction technology and quality improvement of books and manuals have enabled engineers to find answers with a minimum effort if they simply follow the instructions. Finally, the advancement of information technology and computer analysis technology has further encouraged the second-mentioned trend.

With the above in mind, JGS has, since 2006, been undertaking an overhaul of the outdated system, aiming to improve its quality while considering the possibility of collaboration with other related fields. Taking into consideration the circumstances surrounding geotechnical engineers, we have devised a drastic lecture reform plan, which may also promote the reform of JGS itself. In light of social backgrounds in Japan such as the fierce global competition, aging of skilled engineers, and growing tendency among young people to avoid

employment in manufacturing, what must be at the top of the agenda, in addition to addressing the three aforementioned situations, are educating, developing and securing human resources in the geotechnical engineering field and providing them with opportunities to fully utilize their skills and expertise to contribute to the society.

3 SCHEME FOR GEOTECHNICAL ENGINEERING LECTURES

JGS will be committed to offer lectures (workshops) to support the improvement of the qualifications and quality of engineers, while the Business (Project) Department will work in liaison with the Engineer Training Committee to provide, as part of the engineering educational program, systematized contents corresponding to the different needs and levels of engineers (Fig. 2). The scheme will be implemented from April 2008. The outline is as follows:

- Lecture (Workshop) reforms --- from technology dissemination to engineer development
- Opportunities for Society members (and engineers including nonmembers) to acquire well-balanced knowledge and skills
- Social contribution through human resource development

After repeated discussions between the Engineer Training Committee and the Business Department at JGS on how the above can be achieved, the decision was reached to adopt a course system as part of the lecture program reforms. Again, the key here is to shift the lecture concept from technology dissemination to education.

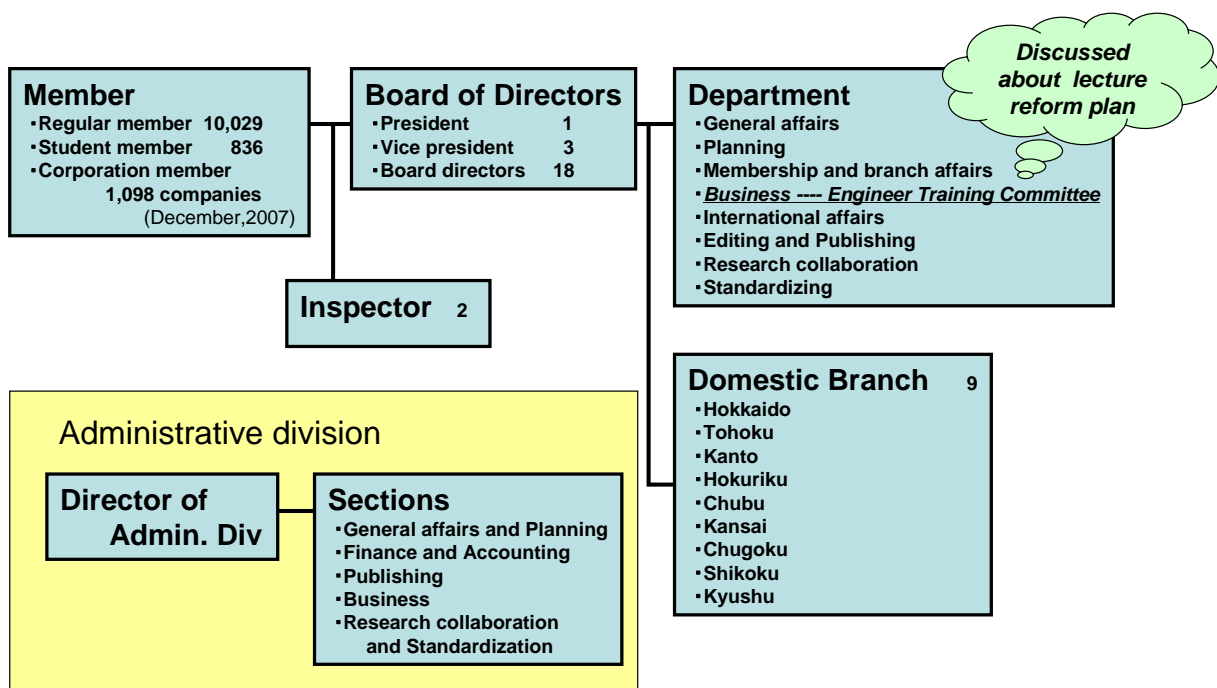


Figure 2. About the JGS (Organization)

4 COURSE SYSTEM PLAN

The course system is scheduled for introduction in April 2008. The system plan is as follows:

4.1 Courses

Lectures of JGS after 2008 will be designed as always to correspond to the new publications and needs of the members, but the main emphasis will be shifted to technology education. Lecture courses are classified as in table 1 for now, taking into account the possibility of developing into practical business. The following is an outline of each course.

- (1) Basics in Geotechnical Engineering
Fundamental skills in geotechnical engineering.
For beginners.
- (2) Soil and Foundation Engineering
Areas include: soils, foundations, geomaterials, and soil survey and testing. For intermediate and advanced.
- (3) Survey, Design, and Construction
Areas include: soil survey, design and construction, and new technology (building methods). For intermediate, advanced, and working engineers.
- (4) Disaster Control and Environment
Areas include: landslides, slope stability, earthquake disasters, disaster control, groundwater, environmental issues, and soil contamination. For intermediate and advanced.
- (5) International/Liberal Arts and Sciences

Areas include: international studies, liberal arts and sciences, and special lectures. For students of all levels.

As table 2 shows, we may establish more than one course per lecture so that we will be able to offer more opportunities for students to take each course.

4.2 Regulations

The outline of regulations about course system is shown in Fig.3.

- (1) From 2008, members can choose from the courses (1) to (4) listed above upon enrollment.
- (2) Students must complete at least 12 classes per course within 3 years for the course to be certified as complete.
- (3) International/Liberal Arts and Sciences is not a stand-alone course and is transferable from other courses.
- (4) If students attending Basics in Geotechnical Engineering take other courses (intermediate and advanced), the lectures will be transferred to the course they are originally attending.
- (5) Upon course completion, certificates and 10 points as incentives in addition to the CPD (Continuing Professional Development) points earned in lectures are issued.
- (6) The above certificates and incentives are issued upon declaration by members.

Table 1. Classified Lecture courses

Classification (Course name)	Content of course	Level for attending a lecture
Basics in Geotechnical Engineering	Fundamental skills in geotechnical engineering.	beginners
Soil and Foundation Engineering	Soils Foundations Geomaterials Soil survey Testing (Field / Laboratory)	intermediate advanced
Survey, Design, and Construction	Soil survey Design Construction New technology (building methods)	intermediate advanced working engineers
Disaster Control and Environment	Landslides Slope stability Earthquake Disasters Disaster control Groundwater Environmental issues Soil contamination.	intermediate advanced
International / Liberal Arts and Sciences	International studies Liberal arts and sciences Special lectures	all levels

Table 2. Example of applying courses of lectures

Lecture name	Basics in Geotechnical Engineering	Soil and Foundation Engineering	Survey, Design, and Construction	Disaster Control and Environment	International / Liberal Arts and Sciences
Construction method against earthquake and liquefaction disasters	○		○	○	
Overseas construction and international cooperation	○	○			○
Reliability design method for foundations		○	○		
Explanation about the method of ground survey	○		○		
Ground engineering that considers risk engineering		○	○	○	○
Underground water engineering		○	○	○	
Beginner's class of analysis that uses FEM	○				

4.3 Remaining Tasks

Shifting to course system has the following tasks to be resolved. These will be dealt with as we run the system.

- (1) Troubleshooting
- (2) Shifting of lectures held by branch divisions to course system
- (3) Hearing of opinions of members and branch divisions, and modifications of implementation plan if required
- (4) Encouragement of other academic societies to shift to course system.

5 CONCLUSION

The Technology Dissemination Committee of the Project Division is currently reviewing the previous lectures and in the process of arranging lectures effective from April 2008 and considering course classification. As has been previously described, JGS lectures will shift its aim to the technological education. Course system will be the tool, but the Committee must continue to offer lecture contents for continuing education program that fully satisfy not only the beginners but also intermediate and advanced participants.

This series of attempts is of such substantial importance in terms of continuing education that we consider it vital to broaden our appeal to not only the members but all engineers interested in geotechnical engineering as well.

While the initial plan for this fiscal year is to establish a framework for lectures at the head office and put it into effect, we are also looking at incorporating lectures hosted by branch divisions into the course system as much as possible anytime during the year. The lectures need publicity activities as well.

JGS will continue its efforts, with both anticipation and concerns in mind, to prepare for the implementation of course system effective as of April 2008.

PREFERENCES

- M. Nakano and N. Suemasa. 2008. Program of Continuing Professional Development for Geotechnical Engineers by Japanese Geotechnical Society, First International Conference on Education and Training in Geo-Engineering Sciences, Romania, to appear.
- Japanese Geotechnical Society. 2007. Report of 4th Committee of Engineer Education (in Japanese)
- Japanese Geotechnical Society. 2005. Mid/long-term vision of Japanese Geotechnical Society (in Japanese)

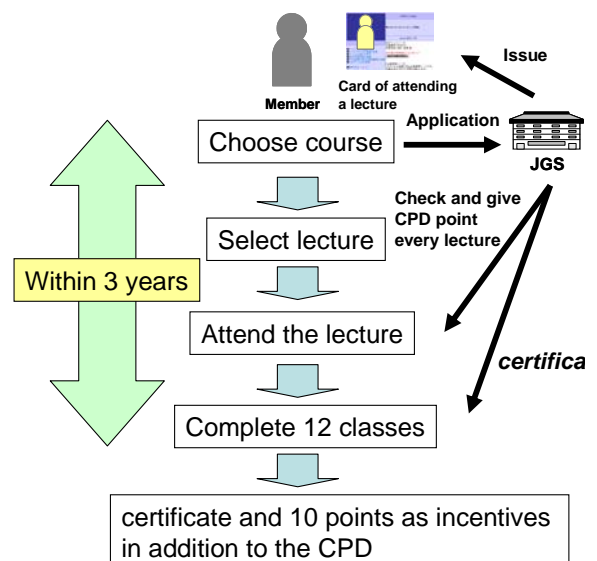


Figure 3 Regulation