

# Introduction of PBL Education of the Department of Conceptual Design

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## 1 Introduction

This report explains about PBL education of department of Conceptual Design, College of Industrial Technology, Nihon University. The department of Conceptual Design was founded in 2009, to develop designer or “conceptor” who could take an active part in innovative industries. Recently, to be designer or “conceptor”, it is said that effective PBL education in initial stage is needed. In consequent of this, the department has prepared numbers of PBL programs from first grade.

## 2 Project-Based Learning (PBL)

In Japan, drawing classes in architectural departments, physics experiment classes in physic departments or survey classes in civil engineering departments has been practiced

for many years. In this relation, in recent years, project based learning (PBL) has attracted attention as one of active learning. What is important is that PBL makes much account of solving problems compared with the prior of the experiments or other trainings<sup>1)2)3)4)</sup>. In addition, it is done by plural students independently. PBL classes of the department has same characteristics mostly.

## 3 Characteristics of PBL education of the department of Conceptual Design

The department provides many PBL classes especially in 2nd and 3rd grade year of their bachelor program (Table 1). Each class has subject including solving problems (with different levels according to

Table1 List of PBL Classes in the Department of Conceptual Design

Class Name	Credit	Class Hours (minute)	Number of Classes	Student Capaticy	School Year	Level of Solving Problems	Single/Group
Design Studio I	2	180	15	132	2nd	Mid	Single
Design Studio II	2	180	15	132	2nd	High	Single
Design Studio III	2	180	15	132	3rd	High	Single
Design Drafting I for Product Design	2	180	15	66	2nd	Low	Single
Design Drafting II for Product Design	2	180	15	66	3rd	Low	Single
Design Drafting I for Space Design	2	180	15	66	2nd	Mid	Single
Design Drafting II for Space Design	2	180	15	66	3rd	Mid	Single
Design Experiment	3	180	15	132	2nd	Low	Group
Seminar A	1	90	15	132	3rd	High	Single/Group
Seminar B	1	90	15	132	3rd	High	Single/Group
Conceptual DesignExercise	1	90	15	132	3rd	High	Single/Group
(Graduate Study)	4	-	-	132	4th	High	Single/Group

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Table 2 Subjects of Design Studio in FY2018

Design Studio I	Design Studio II	Design Studio III
Digital Design and Fabrication	Furniture Design	Contemporary Art
Material Design	Paper Crafting	Playground Equipment II
Environmental Engineering	Making Concept Method	Space Lighting
Visual Design	Tool Design	Personal Space Design
Censing and Interaction	Lighting design	Product Design Environment
Color Dynamics	Playground Equipment	Wearable Design
Human Centered Design	Area Management	Prototyping Design

school year) which consists of survey and analysis, to set a goal, to create guiding means which is called “Design” generally, and feedback.

“Design Drafting” and “Design Experiment” proceed with same contents of subjects for all students. On the other hands, “Design Studio”, “Seminar”, “Conceptual Design Exercise” and “Graduate Study” proceed with various contents each students selects, or, professor’s recommend. Each “Design Studio” has 7 subjects (total 21 subjects), and each “seminar” has 14 subjects (total 28 subjects). It follows from this that the PBL classes of the department need many classrooms, large and small.

#### 4 Subject of Design Studio

As mentioned previously, each “Design Studio” has 7 subjects (Table 2), and has 7 sub-classrooms. One subject needs 7days (180 minutes × 7 classes) . Two subjects are followed to taken 2 credits by students, for one “Design Studio” (total 15 classes includes a guidance class).

With a new special apparatus (Fig.1), the department will provide a new subject “Workshop Design” in “Design Studio III” in FY2019. The new apparatus is mobile workshop called “Fabrication Truck”. The “Fabrication Truck” provides fabrication tools such like 3D printer, laser scanner, digital sewing machine, cutting plotter, and so on.

The truck with students is dispatched to public spaces, for example, a park or a junior school, which have some problems.

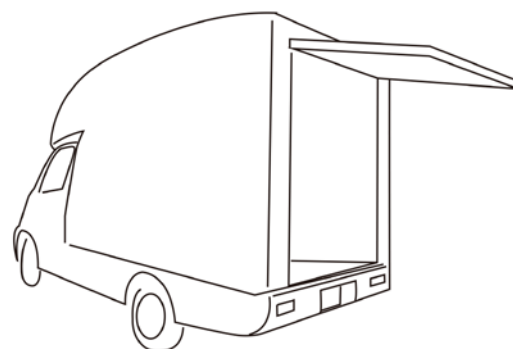


Fig.1 An image of the Fabrication Truck  
(Provided by Fuji Enterprise Co.,Ltd.)

Students who selects the subject do workshop which they proposed with the fabrications in the public space outside of their campus.

#### References

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