

Cooperative Education Program in Tokyo University of Technology

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Keywords: Cooperative Education Program, Long-Term Work Experience, Pre- and Post-Experience Learning

1. Introduction

The Cooperative Education Program in Tokyo University of Technology is a type of educational program that combines on-campus lectures with work experience outside of the university. Students work at a company for a certain period, gaining work experience, compensation, and university credits. At the same time, they are expected to develop practical and comprehensive foundational skills necessary for the professional world, which are often difficult to acquire through traditional coursework alone.

2. Cooperative Education Centered on Long-Term Work Experience

The Faculty of Engineering at Tokyo University of Technology was one of the earliest institutions in Japan to introduce the Cooperative Education Program as a formally recognized mandatory course for university credit. The curriculum is systematically structured, starting with foundational coursework before work experience and extending to post-experience report writing and presentations. To support the smooth implementation of the program, a Co-op Center has been established.

Through this program, students gain practical skills, a

sense of responsibility, and proactive initiative, along with an understanding of the meaning and value of work. They acquire the ability to work effectively and enhance their motivation for learning and their awareness of employment. This innovative program, introduced by the university ahead of national initiatives, has garnered significant attention from both inside and outside the institution.

In the fiscal year 2015, it was adopted into the Ministry of Education, Culture, Sports, Science and Technology's "Acceleration Program for University Education Rebuilding (AP)," receiving support from the government for up to five years. In December 2018, the program received the "Internship Award" from the Ministry of Education, Culture, Sports, Science and Technology, highlighting its excellence.

There are several advantages to the Cooperative Education Program at our university that are not typically found in regular internships. Firstly, it provides the opportunity for an extended period of employment experience. Internships typically last for a short duration (around 1-2 weeks), but Cooperative Education internship spans a longer period (approximately 8 weeks), allowing students to engage in more practical activities.

Furthermore, the Cooperative Education Program is a

structured program that encompasses both pre-and post-experience learning. While regular internships may offer some pre-guidance, the Cooperative Education program spans an entire year, allowing for comprehensive pre-experience learning. Additionally, it systematizes post-experience learning to help students apply the insights and gains from their work experience to their subsequent studies and job searches.

Moreover, Cooperative Education internships are paid positions. Regular internships typically involve short-term company visits or job shadowing experiences, and they are generally unpaid. In contrast, Cooperative Education internship is carried out as paid positions since students work as full-fledged members of the company for an extended period.

Lastly, the working program is developed through industry-academic collaboration. The content of regular internships is usually determined by the company, with limited involvement from the university. In contrast, the Cooperative Education Program recognizes credit for industry-academic collaborative course subjects, which requires universities and companies to collaborate in developing more effective programs. This initiative is receiving attention as a model case of industry-academic collaboration for talent development, often referred to as the "creation of individuals" through such collaborations between universities and companies.

3. The Cooperative Internship I Undertook

I completed an approximately 8-week internship at a company called Amada Weld Tech. Amada Weld Tech is a company that specializes in the design and manufacturing of laser welding machines, laser marking machines, fine spot welding machines, and more. During this extended internship, I was assigned to the Quality Assurance Department of the Technical Management Division within the Technology Department. My primary responsibilities during this period can be broadly categorized into two main tasks.

The first task involved verifying whether the control software of laser processing machines worked correctly under the Windows 11 environment. I conducted the validation of both the Japanese and English versions of the control software using a simulation device for laser processing machines.

The second task involved assisting the Pre-Service Department, which conducts pre-verification experiments on samples before entering contracts with customers. In this department, I had the opportunity to interact with welding and processing machines manufactured and sold by Amada Weld Tech, enabling me to learn more about their processing techniques. I can highlight two significant learnings from this internship experience. First, the importance of delivering results became evident. While working on the verification of control software, I identified several minor errors. Rather than merely identifying these issues and leaving them unresolved, I conducted in-depth investigations into the conditions under which these errors occurred and was able to provide comprehensive reports. Neglecting such issues could potentially lead to customer dissatisfaction and complaints when they use the equipment. Therefore, delivering results in one's work can contribute to preventing complaints and improving the quality of products and services.

The second important lesson was gaining a sense of what it means to work as a professional in society. During these approximately 8 weeks, I worked as a full-fledged member of the company from the beginning of the workday to the end. This was an experience that is not typically attainable in a regular internship and will undoubtedly prove valuable in my future job search and eventual career.