Long Term Internship Program in University of Ulsan

Kabju Hwang[1], Myung-Kook Yang[2]

[1]Innovation Center for Engineering Education, University of Ulsan, Korea
[2]School of Electrical Engineering, University of Ulsan, Korea

hwangkj@ulsan.ac.kr[1], mkyang@ulsan.ac.kr[2]

Abstract

In this paper, a Long Term Internship Program(LTIP) which has been developed and executed in University of Ulsan is introduced. University of Ulsan is in the world famus industrial city: Ulsan Metropolitan City where Hyundai Heavy Industry, Hyundai Motor company, SK, etc. are located. The 6-month LTIP is designed to bring up the field-adaptive engineers and is offered to junior and senior students. LTIP is proposed by analyzing the weak points of previous internship programs. It emphasizes on total managements of whole internship procedures with well defined support systems such as preliminary education, CEO professors, Adjunct professors, and competitive conference. The program participants take 14 credits and 6 of them are counted as engineering design credits. 136 students take part in the LTIP with 46 industries in Fall, 2008. According to the survey, it is investigated that both industries and students are satisfied with LTIP.

1. Introduction

Internship programs are designed for students to obtain both practical knowledge and experiences from the industry during academic years. It also can lead students to have better opportunities to be employed with advantage of practical field-adjusted knowledge. Well designed internship program promotes various chances for the students not only to experiment their academic theories to practical field but also to adapt themselves to industrial environment. These will enhance the competitiveness of students in various ways. Together with these advantages of internship for students, the company would obtain the fresh idea armed with new academic theories as well as have chance to collect information about the talented students for future recruits.

However, there exist difficulties to acquire these positive side merits of internship program. Main cause is the different awareness of each participant: industry, student, and university, which contrasts from the essential goal of the internship. Industry could recognize this matter as a chance to use labor with low wage. Students would participate this opportunity with no specific preparation or plan. University could just send students without detailed programs and supports, i.e. pre-education, assigning field mentor, etc. If each party regards the internship program for their own advantage, it will provide bad effects for every participants rather than a fruitful success. [1-2]

University of Ulsan (UOU) was established to nurture well educated engineers for the industries in Ulsan Metropolitan City: the world famous industrial city. UOU developed and executed various industry & academy collaboration programs including sandwich education system, short term internship programs, industry field trainings, etc.

In case of short term internship program, it is hard to expect the practical training courses for students. Moreover, it has been judged that the program provides a load of burden to industries since they could not arrange students as their formal work force. Because of these problems, the university and industries found the needs to create newly improved internship system to satisfy both students and industries. With these backgrounds, the University of Ulsan proclaimed the “Industry & Academic cooperation” MOU in 2006 and activated close collaborative programs. Hyundai Heavy Industry, Hyundai Motor Co., SK Co., SamChang and other 78 companies in Ulsan Metropolitan City were joined the MOU to open a new era of practical Industry & Academic cooperation programs. Among several programs, the Long Term Internship Program (LTIP) was enforced since fall, 2008. [3]

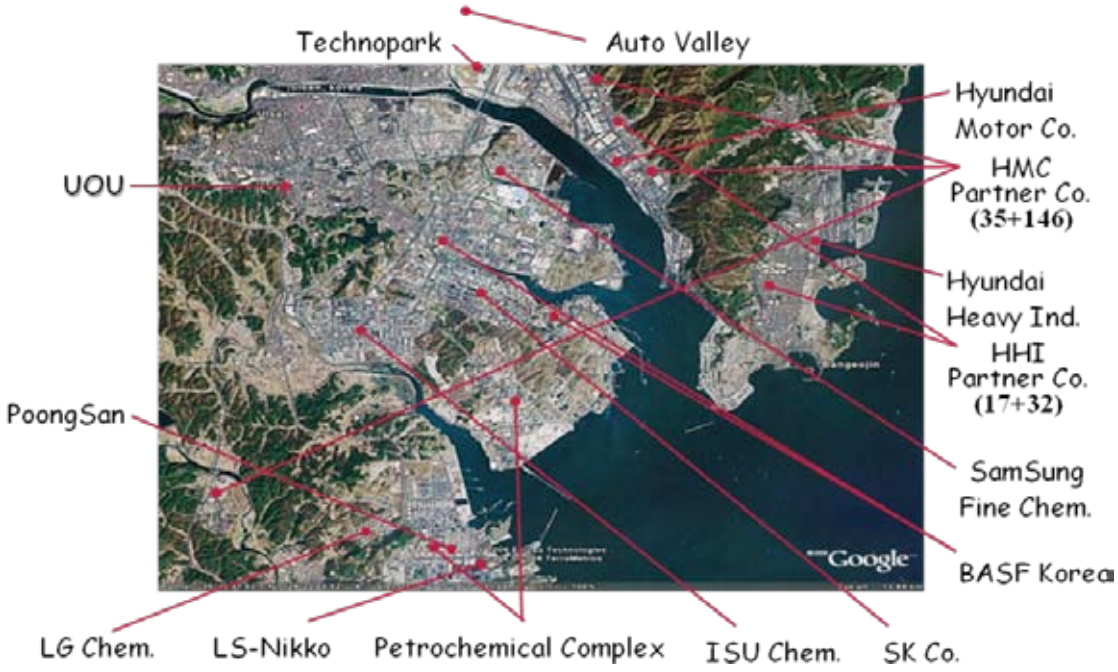
In this paper, detailed important issues of LTIP, such as orientation, preliminary education, mentor in industry, and competitive conference, have been described. UOU also assigned a professor for each industry to monitor the internship process. 127 out of 136 students completed the first LTIP in fall, 2008. It has been investigated through interview and survey that both students and industries satisfied with LTIP for its terms and effectiveness.

2. Long Term Internship Program (LTIP)

2.1 Industries in Ulsan Metropolitan City

University of Ulsan(UOU) is located in the world famous industrial city: Ulsan Metropolitan City (UMC) where Hyundai Motor Company, Hyundai Heavy Industry, SK Co. and more than 300 mid and small size industries are operating. Huge petrochemical complex is also in suburban area of UMC. Figure 1 shows this industrial environment of UMC. According to the statistic report, total amount of industrial production of UMC in year 2006 was 95.5 billion dollars: 23.8 billion dollars by Hyundai Motor Company, 11.7 billion dollars by Hyundai Heavy Industry, and 42.7 billion dollars from petrochemical complex including SK Co., and LG etc. Total population of UMC was reported as 1.1 million.

Figure 1. Industrial environment of UMC



UOU is the only 4-year university in UMC as shown in Figure 1. UOU was established by Hyundai group in 1970 and has made great effort to educate future engineers especially for the industries around UMC. As a result, about 1,000 UOU alumni engineers are on duty at Hyundai Heavy Industries. Moreover, numerous UOU alumni are working at many industries in UMC.

2.2 Long Term Internship Program (LTIP)

UOU enforced Industry & Academic cooperation program since the school was founded. From early 1970s, UOU developed the sandwich program and set obligation for the junior students to participate an intern program for one or two semesters. It was called sandwich program since the internship program was executed between regular coursework in university. The program was possible since the university size was relatively small and industries experienced manpower problems from early 1970s to mid 1980s. As the school size increased and employment circumstance stabilized, the program modification became inevitable. Like other general internship programs as in most universities, term was adjusted to 4 - 8 weeks during summer or winter vacation and internship credits was reduced to 1 – 2 units. The worst effect caused by these changes was diminishing of attractiveness of intern program for both students and industries.

Recently, many industries have requested field adaptive education programs in university. They also appealed that they have to spent too much reeducation expenses for new employees who graduated university. On that account, in 2006, newly improved Industry & Academic cooperation committee was proposed and carried on. Figure 2 was

taken after the agreement of New Industry & Academic cooperation program in UMC. Four major companies in UMC, like Hyundai Motor Company, Hyundai Heavy Industry, SK Co. and SamChang Co. joined the program. “Long Term Internship Program”, LTIP, is the one of the typical programs designed by New Industry & Academic cooperation committee and was first enforced in fall of 2008. Important matters considered for this program are as follows.

- Minimize the industry’s burden (such as expenses, job appointment, etc.)
- Enforce the preliminary education before the Internship
- Assigning a mentor in industry: field instructor
- Appointing advisory professor in university: CEO professor
- Thorough management and evaluation of internship procedure
- Secure continuance of practical internship duties (considerate to industry side)

Figure 2. MOU for new Industry & Academic cooperation program in UMC

2.3 Strategies of LTIP

LTIP is designed for 6-month program: Term 1 - January to June, and Term 2 – July to December. The participated students get 14 credits. During the program, industry would involve in evaluation of students. This can provide a chance for the industries to close investigation over students. They can also get some effective information for their future recruit through the internship program. UOU raises fund for LTIP and supplies certain amount of payment for both participating students and mentors in industries. This increases students’ involvement and lightens industry’s burden. After the program, the students receive official certificate of internship which is issued by both university and industry.

LTIP made up for the weak points of the previous short-term internship programs. Specific strategies regarding program improvements are as follows.

- Close collaborations and positive supports between industry and university
- Regular curriculum for one whole semester that covers 14 academic credits with accreditation
- Emphasis on preliminary education
- Construction of integrated support system in both UOU and industries
- Thorough management and evaluation from the job specification to the competitive conference

Figure 3. The process and strategies of LTIP.

2.4 Preliminary education

Preliminary education is the most important procedure that differentiates LTIP from other internship programs. It can determine the degree of gratification for both participants: student and industry. It is scheduled prior to one month of the LTIP and held for one to four weeks depend on the requests of the host company. The preliminary education includes essential curriculum such as safety issues in industrial field, reaction knacks over the calamities and accidents, and computer related skills. Table 1 shows the Four-day essential curriculum that was given for the first LTIP. Figure 4 shows the orientation class.

Table 1. Four-day essential curriculum

Date & Time		Program	Remark
Dec. 19(Fri.)	09:00~18:00	Excel	
Dec. 20(Sat.)	09:00~18:00	Power Point	
Dec. 22(Mon.)	10:00~10:10	Orientation	
	10:10~11:00	Leadership and Challenging Spirit	
	11:10~12:00	Internet Etiquette	
	13:30~15:00	Job Philosophy	
	15:10~16:00	Measurers Against Calamities and Accidents	
	16:10~17:00	Case study on Internship Programs	
Dec. 23(Tue.)	10:00~11:00	Social Etiquette	
	10:30~12:00	Visions in Small and Mid Size Business	
	13:30~15:00	Public Service of Industries	
	16:00~17:00	Q&A	

Figure 4. Orientation

2.5 CEO professor and Adjunct professor

Since there are many world famous industries, UMC is filled with professionals in diverse areas. UOU tried to construct the cooperative network of these professionals and open the faculty positions for the outstanding professionals. In UOU, two faculty positions: CEO professor and adjunct professor are available for the selected industry professionals. These new faculty positions are so attractive for both retired CEO and current professionals that it helps to construct and operate the network of industry professionals in UMC.

An industry professional who has more than 20 years of experience in the industry before the retirement could be a candidate for CEO professor. 17 out of 23 CEO professors are currently employed in college of engineering. Their major missions are organizing and managing the field studies and various internship programs. They also develop special curriculum for the field adaptive merged technologies that are required in the industries. Moreover many of them contact with students in the class and recommend appropriate student to the companies.

The adjunct professor is formed with on-going industry professionals with a lot of experience in their current occupation. About 100 adjunct professors are employed at UOU. These include board of directors, factory managers, local officials, researchers, and numerous industry professionals who can enhance relationship for Industry & Academic cooperation program.

CEO professor and Adjunct professor system not only enhance the Industry & Academic cooperation network but also provide strong driving forces for LTIP.

2.6 Conference

After the LTIP, each participant must submit reports about the individual activities during internship and receive a certification of LTIP. The reports are reviewed by conference committee. The selected reports are presented through conference where students, mentor, and professor participate as a team. Through this conference, presentations are made by students regarding their experience and appreciation to the program. The conference committee determines the most acknowledged presentation. This conference not only makes LTIP valuable but also encourages all participants.

First LTIP conference was held on Dec. 10, 2008. 46 industries and 32 certified teams were participated. The conference committee selected ten teams for award. Figure 5 shows the winner of the 2008 LTIP conference.

Figure 5. Winner of the 2008 LTIP conference.

Table 2. Survey on LTIP, 2008

Items	Strongly Agree	Agree	Average	Disagree	Strongly Disagree	Total
Do you satisfy with LTIP?	32 (25.2)	62 (48.8)	23 (18.1)	9 (7.1)	1 (0.8)	127 (100.0)
Did you have sufficient knowledge about your mission in LTIP?	12 (9.4)	32 (25.2)	53 (41.7)	24 (18.9)	6 (4.7)	127 (100.0)
Did you do your best for LTIP?	62 (48.8)	58 (45.7)	7 (5.5)	0 (0.0)	0 (0.0)	127 (100.0)
Was your mission in LTIP successful?	40 (31.5)	71 (55.9)	16 (12.6)	0 (0.0)	0 (0.0)	127 (100.0)
How well did you adapted to field organization?	52 (40.9)	63 (49.6)	11 (8.7)	1 (0.8)	0 (0.0)	127 (100.0)
Did you satisfy about the management and support on LTIP?	22 (17.3)	54 (42.5)	34 (26.8)	13 (10.2)	4 (3.1)	127 (100.0)
Is your practical ability improved?	31 (24.4)	70 (55.1)	23 (18.1)	3 (2.4)	0 (0.0)	127 (100.0)
Is term adequate?	21 (16.5)	48 (37.8)	34 (26.8)	23 (18.1)	1 (0.8)	127 (100.0)
Do you want to have a permanent job at the company you took LTIP?.	53 (41.7)	49 (38.6)	17 (13.4)	8 (6.3)	0 (0.0)	127 (100.0)

3. Outcome Evaluation

After the first LTIP, the outcome evaluation was conducted via survey on 127 participated students. Table 2 demonstrates survey items and their answers. It has been investigated that majority of participants were satisfied with the program. Students took LTIP with sincere effort to adapt to new circumstances in the field. Preliminary education and monitoring effort of related professors raised interest to LTIP.

Also individual interview with subjective questions was performed to each student. Through this survey, participants responded that experience in the field as an intern was helpful to recognize how it is in the real world. But they

pointed out that the lack of chance to take necessary class from university was a problem. Although professors were grateful to assist students with career, students could not take required class at needed period. In addition, industries can have advantages to reduce the training expenses for new hires.

4. Conclusion

Recently new issue comes up that more than half of graduate students are going through dilemma because of lack of job positions. Yet industries are complaining of difficulty in finding talented employees, and once they hire a new employee, they have to spend too much expense for the training course. These problems clearly support the need for Industry & Academic co-education programs. In this paper, Long Term Internship Program (LTIP) of University of Ulsan has been introduced. The key issues of LTIP are preliminary education, CEO professors, Adjunct professors, and competitive conference.

127 students completed the LTIP in fall, 2008, and 88 students are currently enrolled for spring program. It has been investigated through interview and survey that both students and industries satisfied with LTIP for its terms and effectiveness. It is also observed that the LTIP participants take better opportunity to get a job after the graduate. University of Ulsan has a plan to develop the LTIP as its peculiar education program using the excellent industrial environments of UMC.

Acknowledgements

We would like to thanks to Foundation of Industry Corporation of UOU for providing valuable data.

References

01. M.H.Yoon, J.H.Kim, H.H.Kim, S.S.Park, “Evaluation of Industrial & Academic Internship Program”, The Journal of Vocational Education Research, pp. 183-206, Vol. 25, No. 3, 2006
02. Park Cheol-woo, “A Study on Engineering Education based on Cooperation between University and Enterprises”, Engineering Education Research, pp. 5-10, Vol.11-4, Dec. 2008
03. Long Term Internship Program”, Foundation of Industry Corporation, University of Ulsan, Dec., 2008