[Notice] UST Winter School 2017

A. Schedule and Venue

1) Period: Tuesday, Jan. 9(13:00), 2018 ~ Friday, Jan. 12(11:00), 2018

Type of Session	Schedule		Remarks
2017 Winter Session	Registration & Registration Drops	Dec. 4 ~ 8, 2017	NOT allowed to change and drop after given period
	Winter School	Jan. 9 ~ 12, 2018	
	Grading	Feb. 2018	

※ The above schedule is subject to change.

2) Venue: KT Human Resource Development in Daejeon (KT대전인재개발원)

- Galma-ro 160, Seo-gu, Daejeon(367-17, Goejeong-dong)
- Homepage: http://www.kthrd.com/

B. Eligibility and Credits

1) Eligibility

a. **Currently enrolled students who entered before Fall semester 2016**

b. The students who registered Winter School during registration period

c. The Winter School is **NOT** available for following students

a. Students who have completed their coursework or have entered after Fall semester 2016

b. Students who received S(Satisfied) in the former Winter School(s)

2) Quota: 120 students

3) Credits: 2 common course credits are given to students who take the Winter School

a. Credits will be given when students attend for **more than three quarters of the total course.**

b. Credits for the Winter School will be counted as the credits received for Winter session.

C. Course Registration

1) Period: **Monday, Dec. 4(09:00) ~ Friday, Dec. 8(18:00), 2017**
2) You are NOT allowed to change or drop once the registration period is ended. U(Unsatisfied) will be given to students who did not complete the course.
3) How to Register: Integrated Information System → Registration Management → Changes and Crops → Register for common course

※ If given quota is met within the registration period, the registration may close. However, students may additionally register, if students who cancel the course during the period for Course drops occurs.

D. Programs Information

1) Students are required to **prepare a personal Laptop computer**, as this course is designed to use computer.
2) There are three different themed classes, i.e. Internet of Things, Big Data, and Artificial Intelligence, based on the core technologies of the 4th Industrial Revolution
3) Each class has lectures, discussions, and practices.
4) Students can select one class of theme. In the case of excessive number of applicants for a class, some of them will be reallocated to other classes.
5) All lectures, discussions, and practices will be taught in English.

E. Preliminary Program

1) Theme (classes): the 4th Industrial Revolution (Internet of Things, Big Data, Artificial Intelligence)
2) Organizer: Prof. Sejoong Kim / Coordinator: Prof. Hanmin Jung
3) Overview
   a. In this school, students will learn about the 4^{th} Industrial Revolution.
   b. On the first day of the school, general aspects of the 4^{th} Industrial Revolution will be discussed.

c. Students will choose one topic among Internet of Things, Big data, and Artificial Intelligence, which are core themes of the Revolution. Students will do hands-on exercises related to the topic that they will choose.

d. The basic rule is to make students learn what they want to do. But it is informed that if students are not equally distributed over the three topics, lecturers and staff members can adjust the number of students per each class so that students are well distributed. In this case, it is possible that some students cannot study the topic that they want to learn. Please understand this possibility.

e. Each class is based on group works. Team assignments will be given. Depending on participation and performance, the best teams will be awarded.

〈 Preliminary Program 〉

Constitutions		Hours	Subjects	Contents
Orientation		2h	– Schedule guide and safety education	– Introducing the course and a few rules for the safety
Lecture	Introduction	3h	– Understanding of the 4th Industrial Revolution	– Lecture of theory and use cases
Lecture of theme	Introduction	2h	– Introduction of Internet of Things (IoT)	– Lecture of theory and use cases
			– Introduction of Big Data	– Lecture of theory and use cases
			– Introduction of Artificial Intelligence (AI)	– Lecture of theory and use cases
Lecture of theme	Introduction	3h	– Introducing the technology trends of IoT	– Lecture of theory and use cases
			– Introducing the technology trends of Big Data	– Lecture of theory and use cases
			– Introducing the technology trends of AI	– Lecture of theory and use cases

Constitutions		Hours	Subjects	Contents
Basic Practice	Practice	5h	– Constructing Practice Environment for IoT	– Theory of micro-controller – Construction and test of IoT environment
			– Constructing Practice Environment for Big Data	– R Theory and practice preparation – R Programming
			– Constructing Practice Environment for AI	– Understanding of Python Tensorflow Keras – Implementing of ANN (Artificial Neural Network) Model
Advanced Practice	Practice	8h	– Practicing IoT	– Interconnecting and communicating Cloud – Constructing of IoT H/W – Implementing IoT UI
			– Practicing Big Data	– Spatial Data Processing – Temporal Data Processing – Visualization of Spatial and Temporal Data
			– Practicing AI	– Practice of CNN Model – Practice of RNN Model – Result Visualization of Deep Learning
Group Discussion	Discussion 1	2h	– Group Discussion	– Idea discussion and subject selection
	Discussion 2	2h	– Selecting excellent projects	– Selecting excellent projects
Extra Work	Dinner	3h	– Dinner	– Dinner
	Best Award of Excellent Project	1.5h	– Presenting the excellent projects – Best Award Ceremony	– Collecting all together and enjoying the ceremony
	Epilogue	0.5h	– Opinion collection of the course – Satisfaction investigation	– Opinion collection of the course – Satisfaction investigation
Total		32h	–	

※ The programs above will be changed according to any situation.

F. Notice

1) Winter School 2017 is the last Summer & Winter School ever, there is no more Summer & Winter School.
   - Neither Summer nor Winter School is mandatory. Students who do not meet the graduation requirements may take other common courses during regular semester.
2) If you don't attend the Winter School after course registration, it will be **displayed as U(Unsatisfied) in the Transcript.**

G. Contact

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H. Time Table

Class Hours Non-class

Class	Day 1(01.09.Tue.)			Day 2(01.10.Wed.)			Day 3(01.11.Thu.)			Day 4(01.12.Fri.)
	IoT	BD	AI	IoT	BD	AI	IoT	BD	AI	-
08:00~09:00				Breakfast			Breakfast			Breakfast
09:00~10:00				Introducing the technology trends of IoT (Prof. Hanmin Jung)	Introducing the technology trends of Big Data (Dr. Yong Lee)	Introducing the technology trends of AI (Dr. Kyungha Lee)	Interconnecting and communicating Cloud (Dr. Taehong Kim)	Spatial Data Processing (Prof. Myunggwon Hwang)	Practice of CNN Model (Prof. Hanmin Jung)	Presenting the excellent projects and Best Award Ceremony
10:00~11:00										Opinion collection of the course and Satisfaction investigation
11:00~12:00										
12:00~13:00				Lunch			Lunch			
13:00~14:00	Orientation (Schedule guide and safety education)			Theory of micro-controller (Dr. Taehong Kim)	R Theory and practice preparation (Prof. Myunggwon Hwang)	Understanding of Python Tensorflow Keras (Dr. Dongjin Choi)	Constructing of IoT H/W (Prof. Dongmin Seo)	Temporal Data Processing (Dr. Yong Lee)	Practice of RNN Model (Dr. Dongjin Choi)	
14:00~15:00										
15:00~16:00	Understanding of the 4th Industrial Revolution (Prof. Hanmin Jung)									
16:00~17:00				Construction and test of IoT environment (Prof. Dongmin Seo)	R Programming (Dr. Yong Lee)	Implementing of ANN Model (Dr. Kyungha Lee)	Implementing IoT UI (Dr. Taehong Kim)	Visualization of Spatial and Temporal Data (Prof. Myunggwon Hwang)	Result Visualization of Deep Learning (Dr. Kyungha Lee)	
17:00~18:00										
18:00~19:00	Introduction of IoT (Prof. Dongmin Seo)	Introduction of Big Data (Dr. Yong Lee)	Introduction of AI (Dr. Dongjin Choi)	Dinner and Group Discussion	Dinner and Group Discussion	Dinner and Group Discussion	Banquet			
19:00~20:00										
20:00~21:00										

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