

Course #	457.658	Lecture #	001	Title	Construction IT and Automation	Credit	3.0
Lecture	Monday 2-5pm (35-223)						

Lecturer	Name: Seokho Chi (Professor)	
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Course Objectives	<ul style="list-style-type: none"> • Understand the fundamentals of data mining and knowledge discovery in database • Apply data management techniques for data classification, prediction, clustering, and mining association rules • Demonstrate how knowledge discovery in database can be used to support construction management • Recognize the design, analysis, and implementation issues for data management in civil engineering
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Textbook and References	<ul style="list-style-type: none"> • Textbook <ul style="list-style-type: none"> - Lecture slides and handouts • References <ul style="list-style-type: none"> - Tan, P., Steinbach, M., and Kumar, V. (2005) Introduction to Data Mining, 1st edition, Addison-Wesley, ISBN: 0-321-32136-7. - Witten, I. and Frank, E. (2005) Data Mining: Practical Machine Learning Tools and Techniques, 2nd edition, Morgan Kaufmann, ISBN: 0-12-088407-0. - Han, J. and Kamber, M. (2000) Data Mining: Concepts and Techniques, 1st edition, Morgan Kaufmann, ISBN 1-55860-489-8.
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Assessment	Attendance	Individual Assignment	Group Project	Final Exam	TOTAL
	10%	20%	40%	30%	100%

Note	<ul style="list-style-type: none"> • English lecture, presentation, and assignment • Ready for group assignment “data mining to solve construction problems” - Teamwork and active participation are required • The course schedule is subject to changes • Follow SNU’s assessment standards • 본 강의/실습은 사회적 거리를 두고 대형 강의실(223 호)에서 대면으로 진행함
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Cheating and Plagiarism	<ul style="list-style-type: none"> • 0% for the given assessment item without any excuse • Penalty by SNU’s regulations
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Detailed Lecture Schedule	Week (Date)	Lecture Contents	Due
	Week 1 (9.7)	Introduction Data Mining Overview	
	Week 2 (9.14)	Data Types Data Pre-Processing Data Exploration and Visualization	
	Week 3 (9.21)	Classification	
	Week 4 (9.28)	Classification	HW#1 Due
	Week 5 (10.5)	Prediction Deep Learning	
	Week 6 (10.12)	Computer Lab (1)	HW#2 Due
	Week 7 (10.19)	Natural Language Processing	HW#3 Due
	Week 8 (10.26)	Computer Lab (2)	
	Week 9 (11.2)	Interim Group Presentation	Interim Group Report Due
	Week 10 (11.9)	Keywords and Network Analysis Computer Lab (3)	HW#4 Due
	Week 11 (11.16)	Cluster Analysis	
	Week 12 (11.23)	Mining Association Rules	HW#5 Due
	Week 13 (11.30)	Mining Complex Data Types Trends and Construction Applications	HW#6 Due
	Week 14 (12.7)	Final Examination	
Week 15 (12.14)	Final Group Presentation	Group Final Report Due	