



**Course** CS 6348  
**Professor** Murat Kantarcioglu  
**Term** Spring 2018  
**Meetings** Friday: 10:00am-12:45pm @ ECSN 2.126

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### Professor's Contact Information

**Office Phone** 972-883-6616  
**Other Phone** None  
**Office Location** ECSS 3.225  
**Email Address** muratk  
**Office Hours** Fridays 3pm-5pm or by appointment  
**Other Information** All announcements will be made in class, course web page and/or via UT Dallas email.

### General Course Information

**Pre-requisites, Co-requisites, & other restrictions** CS 5343 and knowledge of SQL

### Course Description

The course will teach principles, technologies, tools and trends for data and applications security. Topics to be covered include: confidentiality, privacy and trust management; secure databases; secure distributed systems, data privacy.

### Learning Outcomes

- Ability to understand and use basic cryptographic techniques and tools for data security
- Ability to understand and use discretionary and mandatory access controls
- Ability to understand and use integrity policies
- Ability to understand and use database access control tools
- Ability to understand and use defensive tools against common data management system cyber attacks
- Ability to understand and use basic privacy-enhancing technologies

### Required Texts & Materials

None.

### Suggested Texts, Readings, & Materials

Very useful reference that also covers the history of the field:  
Database and Applications Security: Integrating Information Security and Data Management by Bhavani Thuraisingham Publisher: Auerbach Publications; first edition ISBN-10: 0849322243, ISBN-13: 978-0849322242

Please check course web page for additional reading material.  
<http://www.utdallas.edu/~muratk/courses/dbsec18s.htm>

## Assignments & Academic Calendar

01.12.18	Access control basics <b>Reading:</b> Fred B. Schneider's book chapter ( <a href="#">pdf</a> )
01.19.18	Access Control Foundations <b>Reading:</b> Fred B. Schneider's book chapter ( <a href="#">pdf</a> ) <b>Reading:</b> HRU paper ( <a href="#">pdf</a> )
01.26.18	Access control models
02.02.18	Integrity/Hybrid Models
02.09.18	Basic Cryptography Overview Authentication <b>Reading:</b> Fred B. Schneider's book chapter ( <a href="#">pdf</a> ) <b>Homework 1 is available on elearning.</b> <b>Project Description is available on elearning</b>
02.16.18	Bitcoin/Block Chain and Data Integrity <b>Reading:</b> <a href="#">Original Block Chain article (must read)</a> <b>Reading:</b> <a href="#">Block chain overview</a> , <a href="#">Ethereum overview</a>
02.23.18	Block Chain continues..
03.02.18	Database Security Encrypted Data storage in Databases <b>Reading:</b> Please read the following overview paper ( <a href="#">pdf</a> ) <b>Reading:</b> Intel Sgx Overview ( <a href="#">link</a> ) <b>Reading:</b> Please read the following tutorial from Microsoft Research ( <a href="#">pdf</a> ) <b>Homework 2 is available on elearning.</b>
03.09.18	Access control in distributed systems <b>Reading:</b> Please read the following <a href="#">overview paper</a>
03.16.18	<b>Spring Break !!!</b>
03.23.18	<b>Midterm !!!</b> <b>Homework 3 is available on elearning.</b>
03.30.18	SQL and Code injection attacks <b>Reading:</b> Please see the <a href="#">tutorial</a> from Oracle.
04.06.18	Introduction to Data Privacy <b>Reading:</b> K-anonymity ( <a href="#">pdf</a> ), l-diversity ( <a href="#">pdf</a> ), differential-privacy ( <a href="#">pdf</a> ), privacy-preserving distributed data mining ( <a href="#">pdf</a> ) <b>Homework 4 is available on elearning.</b>
04.13.18	Introduction to Data Privacy cont.
04.20.18	Introduction to Data Privacy cont.
04.27.17	Introduction to Data Privacy cont.
????? Final	<b>We will have the final exam at the time scheduled by the university.</b>

### Course Policies

<b>Grading (credit) Criteria</b>	Grading on a curve technique will be used. Homeworks % 16 (4 homeworks, each worth 4%) Project % 24 (Group project that may require programming) Midterm % 25 Final % 35
<b>Make-up Exams</b>	No make-up exam will be given.
<b>Extra Credit</b>	None.
<b>Late Work</b>	<b>Late submissions will not be graded.</b>
<b>Special Assignments</b>	None.
<b>Class Attendance</b>	<b>Strongly recommended.</b>
<b>Classroom Citizenship</b>	<b>Good classroom citizenship is expected.</b>
<b>Comet Creed</b>	<i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i>  <i>“As a Comet, I pledge honesty, integrity, and service in all that I do.”</i>
<b>UT Dallas Syllabus Policies and Procedures</b>	<i>The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus.</i>  <i>Please go to <a href="http://go.utdallas.edu/syllabus-policies">http://go.utdallas.edu/syllabus-policies</a> for these policies.</i>

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.***

***Please check the course web page for the latest updates!!!***

<http://www.utdallas.edu/~muratk/courses/dbsec18s.htm>